



# Jumping Creek Road Development Framework



Final  
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Manningham City Council

# Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>1 INTRODUCTION .....</b>	<b>2</b>
<b>2 BACKGROUND .....</b>	<b>5</b>
<b>3 EXISTING CONDITIONS.....</b>	<b>10</b>
3.1 AVAILABLE INFORMATION .....	10
3.2 SITE HISTORY .....	11
3.3 SITE LOCATION .....	11
3.4 ROAD CORRIDOR FUNCTIONALITY (TYPES OF USES) .....	12
3.5 EXISTING ROAD GEOMETRY AND PROPERTY CONSTRAINTS.....	12
3.6 TRAFFIC COUNTS .....	14
3.6.1 <i>Daily Volume and Speed Counts</i> .....	14
3.6.2 <i>Morning Peak Period Counts</i> .....	15
3.6.3 <i>Evening Peak Period Counts</i> .....	15
3.6.4 <i>Vehicle Classes</i> .....	15
3.6.5 <i>Traffic Comments</i> .....	16
3.6.6 <i>Traffic Counts: 2007 to 2016</i> .....	17
3.7 CRASH DATA.....	17
3.8 ENVIRONMENTAL VALUES (FLORA AND FAUNA) .....	19
3.8.1 <i>Early Environmental Studies</i> .....	20
3.8.1.1 Study 1 – ‘ <i>Jumping Creek Road, Wonga Park and Warrandyte: Flora and Fauna Assessment (Way S.L. &amp; Muir A.M, 1999)</i> ’ .....	20
3.8.1.2 Study 2 – ‘ <i>Manningham Roadside Vegetation Mapping</i> ’ (Practical Ecology P/L, Ecocentric Environmental Consulting & Geocode Mapping and Analysis P/L, July 2002 (Gannon P., Allan I. & Kern L.))	22
3.8.2 <i>Broader Environmental Values</i> .....	23
3.8.2.1 <i>Manningham Biosites – Sites of (Biological) Significance, Manningham City Council (Foreman P, November 2004)</i> .....	23
3.8.2.2 <i>Sites of Botanical and Zoological Significance in Wonga Park, (Ecology Australia, Bedggood B.E. et. al., January 1997)</i> .....	23
3.9 RESIDENT AND USER CONCERNS .....	24
3.9.1 <i>Road Environment</i> .....	24
3.9.2 <i>Natural Environment</i> .....	25
<b>4 STRATEGIC CONTEXT – LEGISLATION AND POLICY .....</b>	<b>26</b>

4.1	FEDERAL AND STATE ENVIRONMENTAL LEGISLATION AND PLANNING CONTROLS .....	26
4.1.1	<i>State and Federal Legislation</i> .....	26
4.1.2	<i>Federal /State/ Local Planning Controls</i> .....	28
4.1.2.1	Planning and Environment Act 1987/Manningham Planning Scheme.....	28
4.1.3	<i>No Net Loss / Planning Controls</i> .....	35
4.1.4	<i>Vic Roads / AustRoads Road Standards and Guidelines</i> .....	37
4.2	LOCAL POLICIES AND STRATEGIES .....	38
4.2.1	<i>Manningham Council Plan</i> .....	38
4.2.2	<i>Link Road Improvement Strategy (2014)</i> .....	38
4.2.3	<i>Manningham Integrated Transport Strategy 2009 (Making Manningham Mobile)</i> .....	40
4.2.4	<i>Road Safety Strategy (2010 – Supplemented 2014)</i> .....	40
4.2.5	<i>Manningham Bicycle Strategy (2013)</i> .....	41
4.2.6	<i>Principal Pedestrian Network (PPN)</i> .....	42
4.2.7	<i>Public Open Space Strategy (2004)</i> .....	43
4.2.8	<i>Manningham Green Wedge Strategy 2004 / Green Wedge Action Plan 2020</i> .....	44
4.2.9	<i>Roadside Environmental Management Strategy (2004)</i> .....	46
4.2.10	<i>Horse Riding Strategy (2002)</i> .....	47
4.3	OTHER PROPOSALS.....	48
4.3.1	<i>Proposed Northern Arterial Route</i> .....	48
<b>5</b>	<b>IDENTIFICATION OF ISSUES</b> .....	<b>49</b>
5.1	ROAD HIERARCHY – ROAD MANAGEMENT ACT 2004.....	49
5.2	ROAD SAFETY CONSIDERATIONS.....	50
5.3	PROJECTED POPULATION AND TRAFFIC GROWTH .....	51
5.4	STREETSCAPE CHARACTER.....	52
5.5	VEGETATION AND WILDLIFE CONSIDERATIONS.....	53
5.5.1	<i>Recent Environmental Studies</i> .....	53
5.5.2	<i>Summary of Environmental Issues &amp; Recommendations</i> .....	61
5.5.2.1	Environmental Issues - Flora and Fauna.....	61
5.5.2.2	Environmental Recommendations - Flora and Fauna .....	63
5.5.2.3	Environmental Issues during Construction – Storm Water, Soils and Sediments .....	68
5.5.2.4	Environmental Recommendations - Storm Water, Soils and Sediments .....	71
5.6	ABORIGINAL CULTURAL HERITAGE ISSUES .....	72
5.7	UTILITY SERVICES CONSIDERATION .....	72
5.8	DRAINAGE .....	73
5.8.1	<i>Sub-catchments Characteristics</i> .....	73

5.8.2	<i>Rainfall and Runoff</i> .....	74
5.8.3	<i>Existing Drainage Systems</i> .....	78
5.8.4	<i>Existing Water Quality</i> .....	78
5.8.5	<i>Flooding</i> .....	79
5.8.6	<i>Future Drainage Infrastructure</i> .....	80
5.8.7	<i>Drainage Comments</i> .....	84
5.9	CATERING FOR ALL ROAD USERS .....	84
5.10	FUTURE INFRASTRUCTURE MAJOR PROJECTS .....	85
5.11	SETTING OF ROAD DESIGN STANDARDS .....	85
5.12	CONTRIBUTORY WORKS BY ABUTTING OWNERS.....	86
5.13	PROPOSED LAND ACQUISITION .....	87
<b>6</b>	<b>SOLUTION OPTIONS</b> .....	<b>89</b>
6.1	RECLASSIFICATION OF THE ROAD .....	89
6.2	RESTRICTING TRAVEL SPEEDS .....	90
6.3	RESTRICTING TYPE OF VEHICULAR TRAFFIC AND LOAD LIMITS .....	91
6.4	ROAD CLOSURE – RESTRICTION TO LOCAL TRAFFIC ONLY .....	92
6.5	LEAVE IN CURRENT FORM (DO NOTHING APPROACH) .....	93
6.6	‘DO NOTHING’ AND RELY ON NORTHERN ROUTE DEVELOPMENT .....	94
6.7	ROAD IMPROVEMENTS.....	95
6.7.1	<i>Road Widening</i> .....	95
6.7.2	<i>Pedestrian/Shared Path</i> .....	96
6.7.3	<i>Roadside Clear Zones</i> .....	97
6.7.4	<i>Road Realignment</i> .....	97
6.7.5	<i>Partial Land Acquisition (of Private Properties)</i> .....	98
6.7.6	<i>Emergency Stopping Points/Bays</i> .....	100
<b>7</b>	<b>PROJECT BUDGET AND FUNDING</b> .....	<b>101</b>
<b>8</b>	<b>PROJECT IMPLEMENTATION AND PROGRAMME</b> .....	<b>102</b>
<b>9</b>	<b>IMPACTS OF CONSTRUCTION</b> .....	<b>104</b>
<b>10</b>	<b>COMMUNICATION</b> .....	<b>106</b>
10.1	INITIAL COMMUNITY CONSULTATION (2011).....	106
10.2	SUBSEQUENT COMMUNITY CONSULTATION (2016) .....	107
10.2.1	<i>Detailed Engagement and Communication Plan</i> .....	109

10.3	ONGOING COMMUNITY CONSULTATION.....	109
<b>11</b>	<b>RECOMMENDATIONS .....</b>	<b>111</b>
11.1	KEY MATTERS TO BE CONSIDERED IN PLANNING AND DESIGN .....	112
<b>12</b>	<b>ATTACHMENTS .....</b>	<b>115</b>
	<b>ATTACHMENT 1 – DESIGN SPEEDS: EXISTING CONDITIONS .....</b>	<b>116</b>
	<b>ATTACHMENT 2 – JUMPING CREEK ROAD TRAFFIC COUNTS .....</b>	<b>117</b>
	<b>ATTACHMENT 3 – JUMPING CREEK ROAD TRAFFIC COUNTS: MORNING PEAK.....</b>	<b>118</b>
	<b>ATTACHMENT 4 – JUMPING CREEK ROAD TRAFFIC COUNTS: EVENING PEAK.....</b>	<b>119</b>
	<b>ATTACHMENT 5 – AUSTRROADS VEHICLE CLASSIFICATION SYSTEM.....</b>	<b>120</b>
	<b>ATTACHMENT 6 – TRAFFIC CLASSIFICATIONS AT EACH COUNT SITE.....</b>	<b>121</b>
	<b>ATTACHMENT 7 – JUMPING CREEK ROAD CRASH LOCATIONS .....</b>	<b>122</b>
	<b>ATTACHMENT 8 – VICROADS DEFINITIONS FOR CLASSIFYING ACCIDENTS .....</b>	<b>123</b>
	<b>ATTACHMENT 9 – PLANNING OVERLAY MAPS: ESO1, ESO2, ESO3, ESO4 .....</b>	<b>124</b>
	<b>ATTACHMENT 10 – PLANNING OVERLAY MAP: SL01.....</b>	<b>125</b>
	<b>ATTACHMENT 11 – PLANNING OVERLAY MAP: LSIO, WMO .....</b>	<b>126</b>
	<b>ATTACHMENT 12 – JUMPING CREEK ROAD: ROADSIDE VEGETATION SIGNIFICANCE MAP.....</b>	<b>127</b>
	<b>ATTACHMENT 13 – SUPPLEMENTARY REPORT ‘CONSIDERATIONS UNDER THE BIODIVERSITY ASSESSMENT GUIDELINES FOR JUMPING CREEK ROAD UPGRADE, WARRANDYTE VICTORIA’, (ECOLOGY AND HERITAGE PARTNERS PTY LTD, MARCH 2015).....</b>	<b>128</b>
	<b>ATTACHMENT 14 – ‘FLORA AND FAUNA ASSESSMENT: AND NET GAIN ANALYSIS OF JUMPING CREEK ROAD RESERVE, WONGA PARK, VICTORIA’, (ECOLOGY PARTNERS P/L (ABOLTINS A., HYNES L. &amp; FROOD D), JANUARY 2008) .....</b>	<b>129</b>
	<b>ATTACHMENT 15 – ‘NET GAIN ANALYSIS OF THE CONCEPT DESIGN FOR THE PROPOSED JUMPING CREEK ROAD UPGRADE, WARRANDYTE-WONGA PARK’, (ECOLOGY PARTNERS P/L, 2010) .....</b>	<b>130</b>

**ATTACHMENT 16 – ‘SPRING SURVEY OF JUMPING CREEK ROAD RESERVE, WARRANDYTE VICTORIA’,  
(ECOLOGY PARTNERS P/L, APRIL 2009) ..... 131**

**ATTACHMENT 17 – JUMPING CREEK ROAD UPGRADE MAP ..... 132**

**ATTACHMENT 18 – PRELIMINARY CONCEPT DESIGN PLANS..... 133**

## Executive Summary

Manningham City Council has prepared the following ‘Jumping Creek Road Development Framework’ document to guide the future upgrade of the Jumping Creek Road corridor between Ringwood-Warrandyte Road in Warrandyte and Homestead Road in Wonga Park. The Development Framework is intended to provide a strategic assessment and justification for the preferred option or solution to upgrade Jumping Creek Road.

The purpose of the Development Framework is to develop a solution that:

- examines all relevant data and information to provide a suitable solution to upgrade the corridor;
- improves overall safety for all users of Jumping Creek Road;
- responds to requests by the community to investigate opportunities to improve the corridor;
- satisfy the functional design standards of the road;
- caters for the growing travel demand along this corridor;
- manages competing objectives in regards to road design and the preservation of the environment and wildlife habitats;
- protects the semi-rural character of the area and preserves local amenity;
- provides a basis for engagement and community input into the Framework development; and
- provides a framework to enable partial acquisition of private land.

Extensive consultation was undertaken with the community in 2011 and subsequently in 2016 to assist in the preparation of the Framework to determine the most suitable upgrade option for Jumping Creek Road.

Community engagement is proposed to occur on an ongoing basis throughout the delivery of the upgrade.

## 1 Introduction

Manningham City Council is proposing to upgrade the entire length of Jumping Creek Road in progressive stages between 2017 and 2023. The upgrade is proposed to be guided by the objectives outlined within this *‘Jumping Creek Road Development Framework’*.

### **Jumping Creek Road**

Jumping Creek Road is an important local link road that carries in excess of 8,100 vehicles per day (2013), with the volume expected to nearly double to 15,000 vehicles per day by 2035. The road provides a five kilometre link between Ringwood-Warrandyte Road in Warrandyte to Homestead Road in Wonga Park, as well as linking surrounding suburbs and the tourist destinations of the Yarra Valley and the Dandenong Ranges.

### **Why Upgrade Jumping Creek Road**

Jumping Creek Road is being upgraded to improve safety for all users, including motorists, cyclists and pedestrians. The deteriorating state of the road, increasing traffic volumes (of three to four per cent per year), poor pedestrian and cycling accessibility and the sustained incidences of crashes on Jumping Creek Road, highlight the need to upgrade the road.

The current road environment has inadequate road lane widths with sharp corners and poor sight distances in some locations. Many sections also have trees, power poles and deep open drains located close to the edge of the road, which pose safety risks for road users should they veer off the sealed road pavement for any reason.

The roadway has experienced higher-than-average casualty crashes (of those reported to authorities) including a number of fatalities, and countless incidents involving collisions with local wildlife. Many of these crashes involved vehicles



leaving the road and colliding with objects on the side of the road, such as trees, fences and open drains.

### **Jumping Creek Road Development Framework**

Responding to community requests for improvements, a strategic document for the future development of Jumping Creek Road was prepared in 2011 and subsequently finalised in 2016, following extensive consultation with the community.

The purpose of the Development Framework is to consider options to address the identified safety and functional issues impacting Jumping Creek Road for all road users – in a balanced manner that minimises impacts on roadside vegetation and best maintains the rural character of the environs.

### **Concept Design Proposal**

A concept design for the future development of Jumping Creek Road has been prepared and will generally encompass the following works:

- Upgrade of the road alignment to improve sightlines and visibility (i.e. improve sharp bends and crests in the road);
- The installation of roundabouts at suitable locations to reduce the speed environment along the road and improve safety;
- Provide kerb and channel, drainage pits and underground drainage pipes to replace open drains, limit uncontrolled overland flows and minimise the footprint of the proposed works;
- Provide safety barriers, where warranted, to improve safety and minimise loss of roadside vegetation;
- Create a new shared path to provide for suitable pedestrian and cycling demand, improve safety and enhance sustainable transport options;
- Construct fauna road crossing(s) at appropriate locations;
- Undertake any necessary alterations to service authority assets;

- Improve safety and access to private driveways; and
- Removal of vegetation to accommodate the works, where necessary, and the undertaking of associated re-vegetation works, as required.

## 2 Background

Jumping Creek Road provides an important five (5) kilometre link within Manningham, between Ringwood-Warrandyte Road in Warrandyte to Homestead Road in Wonga Park.

The road links the communities of Warrandyte and Wonga Park and existing employment and retail precincts in Croydon, Chirnside Park and Lilydale, and serves as an important transport corridor between the municipalities of Manningham, Maroondah and Yarra Ranges. The road is classified as a Council 'Link Road', with the function of providing the main avenue of traffic movements within the municipality to the wider road network.

Jumping Creek Road carries in excess of 8,100 vehicles per day (2013) with traffic volumes expected to increase by 3 to 4 per cent per annum. It is expected that by 2035, traffic volumes on the road will exceed 15,000 vehicles per day (nearly double the current volume), as the population in the north-eastern region of Melbourne continues to grow.

Warrandyte is one the 52 Victorian towns identified as being subject to a higher bushfire risk, following the 2009 Black Saturday bushfires. The area is characterised by a sparse road network and opportunities for access and egress for the local communities are limited. Therefore the importance of the function of Jumping Creek Road in the local road network is considerable.

Given the importance of Jumping Creek Road in the network, gradual deterioration of the road under increasing traffic loads and safety issues associated with the road alignment, there is a need to improve the road at some stage in the near future.

The current road presents a number of safety issues including:

- inadequate road lane widths;
- substandard horizontal alignment at some locations;
- poor sight lines in many locations;
- non-compliance with current State roadside clear-zone requirements, with many sections encumbered with trees, power poles and deep open drains located close to the edge of the road and a general lack of road shoulders in many locations; and
- a general lack of safe sustainable transport facilities, such as dedicated paths.

These existing characteristics have an impact on the sightlines and sight distance for through-traffic, property (driveway) access and at intersections, further reducing the ability for drivers to safely see around a bend or when entering and exiting their properties.

Between January 2009 and December 2013, there have been a total of 17 reported vehicle crashes resulting in casualties along Jumping Creek Road. This includes one (1) fatal crash (head on collision between a motorcyclist and vehicle) in 2009 and six (6) crashes causing serious injury. Many of these crashes involved vehicles leaving the road and colliding with objects on the side of the road, such as trees, fences and open drains.

No statistics are available regarding crashes which do not result in casualties. This includes crashes resulting only in property damage or wildlife injuries.

Jumping Creek Road is considered as a 'Black-Length' road (where a significant number of crashes have occurred over a 5 year period) and currently ranks as one of the higher crash risk sites of Council Link Roads within Manningham.

Of significant note is the crash which occurred in March 2004 in the vicinity of 292 Jumping Creek Road in Warrandyte. This crash involved a truck and a school bus, and received wide-spread media attention. The accident allegedly resulted when the truck partially left the pavement then speared across the road into the path of a bus carrying school children. The Plaintiff engaged Road Safety Audits (RSA) to provide a Report on the accident. The RSA Report stated that the road width is significantly substandard, with inadequate shoulders.

The road geometry along much of Jumping Creek Road is similar to that found at this particular crash location. Other major safety issues along the existing road alignment, as identified through a road safety audit conducted in 2006, included inadequate clearances from traffic lanes to trees on the road edge, other fixed objects along the road and inadequate sight distance at many horizontal and vertical bends.

### **Earlier Works**

In order to address various safety issues, Council has undertaken a number of works on Jumping Creek Road in the past. These include:

- In 1998 a '*Jumping Creek Road Strategy Plan*' was prepared, which identified 14 road safety projects to improve Jumping Creek Road. Whilst this Plan was not adopted by Council, the recommendations formed the basis of works in Jumping Creek Road from 1999. The Plan also recognised the need to be sensitive to the existing environmentally significant flora and fauna along the road alignment.
- Since 1999, Council has expended approximately \$4 million on capital improvements and pavement rehabilitation works which have included:

- replacement of the Jumping Creek (Road) bridge;
  - improvements at the Stane Brae Court intersection;
  - construction of the roundabout at the Ringwood-Warrandyte Road intersection;
  - asphalt overlay of the road pavement from Ringwood-Warrandyte Road to Stane Brae Court;
  - pavement delineation via line-marking of edge lines and installation of Raised Reflective Pavement Markers (RRPM) for the full length of the road; and
  - relocation and undergrounding of utility and communication services.
- 
- A proposal to improve the sight distance over the crest from Vine Crescent to Yarra Road was deferred due to strong community opposition to the removal of approximately 70 trees for the works. As a result, some minor pavement shoulder widening and road sealing was undertaken to improve access to private properties along this section of the road.

All works undertaken have been cognisant of the need to minimise the impact on the roadside vegetation and retain the rural character of the area.

Achieving a desirable outcome has required maintaining a balance between the road user needs, safety and the environment.

### **Considerations**

Further to many road safety improvements that were undertaken since 1998, in July 2004, Council received a petition with 90 signatures formally *“requesting Council [to] explore all avenues to improve safety along Jumping Creek Road, including roadside reserves, without destroying roadside vegetation and rural character”*.

In 2006 a Road Safety Audit identified a list of minor works that have subsequently been completed. In addition other interim improvement works undertaken have also included the installation of guard rail opposite the Hooper Road intersection, preliminary service alterations and works to reduce the depth of deep roadside open drains have been completed.

Preliminary investigations revealed that more substantial works of pavement widening and road realignment with potential substantial tree removal would be required to maintain a safe road to meet the increasing vehicular, pedestrian and cycling use of this road corridor.

The *Jumping Creek Road Development Framework 2016* seeks to identify the optimal solution to satisfy the functional demands of the road in a manner that minimises the impact on the roadside vegetation, the semi-rural character of the area and the general amenity of the surrounding communities.

The construction standards to be adopted will involve the use of retaining walls to limit the extent of earthworks, kerb and channel to define the pavement edge, underground pipe drains to eliminate open drains and use of guardrail fencing to manage the risk of vehicles running off the pavement and colliding with fixed roadside obstacles, in particular trees. The provision of guardrail will also limit the extent of vegetation removal while meeting necessary safety requirements.

## 3 Existing Conditions

### 3.1 Available Information

The recommendations of three major studies undertaken between 1998 and 2006 focussed on road safety improvements and identification of significant native flora and fauna sites within the road reserve. These studies were the:

- *Jumping Creek Road: Road Development Framework Plan (GHD, 1998);*
- *Jumping Creek Road, Wonga Park and Warrandyte: Flora and Fauna Assessment (Ecology Australia Pty Ltd, 1999); and*
- *Jumping Creek Road Existing Conditions - Road Safety and Audit Report (Road Safety Audits Pty Ltd, 2006).*

During the preparation of the Development Framework, the following additional major studies were commissioned to assist the process of determining a suitable solution for the corridor:

- *Flora and Fauna Assessment and Net Gain Analysis of Jumping Creek Road Reserve, Wonga Park (Ecology Partners Pty Ltd, 2008);*
- *Spring Survey of Jumping Creek Road Reserve, Wonga Park (Ecology Partners Pty Ltd, 2009);*
- *Preliminary Net-Gain Analysis of the Proposed Jumping Creek Road Upgrade, Warrandyte – Wonga Park (Ecology Partners Pty Ltd, 2009);*
- *Addendum to the above report: ‘Considerations Under the Biodiversity Assessment Guidelines for Jumping Creek Road Upgrade, Warrandyte (Ecology and Heritage Partners Pty Ltd, 2015); and*
- *Preparation of Concept Plans for Road Works on Jumping Creek Road (Paroissien Grant & Associates, 2009)*



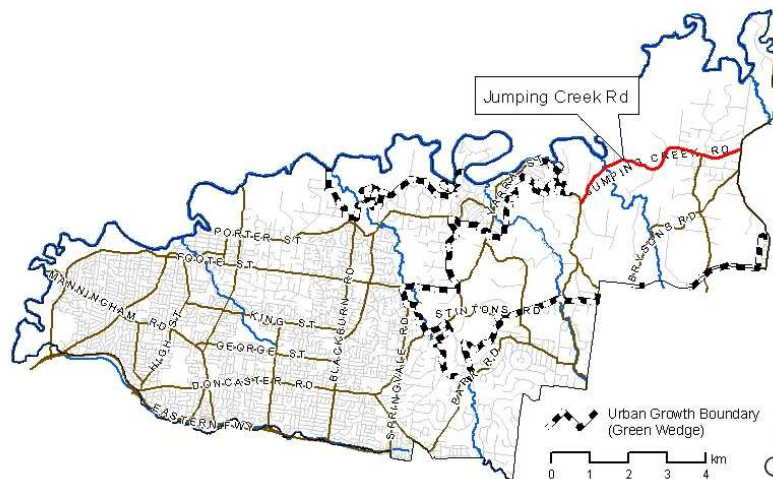
### 3.2 Site History

The five kilometre length of Jumping Creek Road from Ringwood-Warrandyte Road to Homestead Road provides a key link for motorists, between the two semi-rural areas of Wonga Park and Warrandyte and for general regional travel between eastern and northern Metropolitan Melbourne. Cyclists and pedestrians also currently use the paved road and road reserve, although no formal pedestrian or dedicated cycling infrastructure currently exists.

Rapid development in the north-eastern region of Melbourne has generated increased traffic volumes, transforming Jumping Creek Road from a quiet rural road to an important Council Link Road. Traffic volumes generally reach 8,100 vehicles per day (2013), with a standardised traffic volume growth rate of 3 to 4 per cent per annum expected.

### 3.3 Site Location

Located in the north east of Manningham, Jumping Creek Road is 5.23 kilometres in length, extending from Ringwood-Warrandyte Road in Warrandyte to Homestead Road in Wonga Park. The Road runs through Manningham’s ‘Green Wedge’ (the area of the Metropolitan region located outside of the Urban Growth Boundary, and considered as environmentally sensitive). Jumping Creek Road serves local traffic as well as traffic from the neighbouring City of Maroondah and Shire of Yarra Ranges.





Source: Melways

### 3.4 Road Corridor Functionality (types of uses)

The Jumping Creek Road corridor is host to a variety of uses that are both complimentary and, in some cases, perceived to be in conflict with its use for road transport. Setting aside the importance of the corridor for commuting traffic, local access to schools and abutting residences and some commercial vehicle activity, the corridor also contains valuable remnant native vegetation contributing as important native fauna habitat, acting as a fauna transport corridor with the large native trees in particular adding to the rich semi-rural landscape quality of Jumping Creek Road. Stormwater quality flowing from the corridor into nearby catchments and Jumping Creek must be maintained, yet the corridor must also accommodate other activities including walking and cycling within the road reserve.

### 3.5 Existing Road Geometry and Property Constraints

The existing road formation consists of a sealed pavement varying between 5.8 and 7.6 metres in width. Narrow gravel or asphalt shoulders exist in isolated sections of road, with much of the road pavement abutting directly alongside the open table drains.

Kerb and channel and underground stormwater drainage has been constructed in some sections where previous road improvement works have been undertaken. These locations are:

- from Ringwood-Warrandyte Road, east approximately 250 metres;
- up to 200 metres either side of the Jumping Creek (Road) bridge;
- the Stane Brae Court intersection and its approaches; and
- surrounding the Yarra Road and Dudley Road intersection.

The road alignment west of Hartley Road is undulating and curvilinear through a predominantly rural environment, whilst east of Hartley Road is more urban in character with a more straighter road alignment through the Wonga Park township.

The existing design speed of the road with respect to the horizontal alignment generally exceeds 60 kph, although the common practice of designing to a speed of 10 kph greater than the posted speed limit is not achieved in many locations. Two bends have design speeds below 60 kph, located east of Hooper Road and east of Ringwood-Warrandyte Road.

The existing vertical alignment of Jumping Creek Road is generally substandard with the design speeds of numerous crests and valleys below 50kph, as referenced in **Attachment 1 - Design Speeds - Existing Conditions**.

Road geometry is influenced by the undulating terrain and the need to provide property access along the length of the road. Steep cross-fall across the road reserve in many locations results in difficult property access. Any changes in vertical road geometry may require significant ancillary works to maintain access to abutting properties.

### 3.6 Traffic Counts

Detailed traffic counts were undertaken in October 2007 to determine the volume, direction and speed of traffic travelling along Jumping Creek Road. These were undertaken at the following seven (7) locations:

- Location 1 – 268 Jumping Creek Road
- Location 2 – 138 Jumping Creek Road
- Location 3 – Upton Court and Jumping Creek Road intersection
- Location 4 – Yarra Road between Toppings and St Denys Crescent
- Location 5 – 22 Jumping Creek Road
- Location 6 – Homestead Road, north of Ward Court
- Location 7 – 5 Lower Homestead Road

The location of the traffic counters enabled peak period data and vehicle classification data to be extracted from the traffic counts to provide an overall view of the traffic characteristics along Jumping Creek Road. The counter locations, speed details and daily volume data recorded at each location are provided in **Attachment 2 - Jumping Creek Road Traffic Counts**.

Subsequent annualised traffic assessments (projected) have been undertaken, and confirm that traffic growth along the corridor is increasing, at the rate of between 3 to 4 per cent per year.

#### 3.6.1 Daily Volume and Speed Counts

The results of the surveys indicate that Jumping Creek Road carries an overall average daily volume count of approximately 7,200 (2008), revised up to 8,100 (2013) vehicles per day (based on available data provided by VicRoads). Clause 56.06 of the Victorian Planning Provisions indicates that arterial roads can carry daily vehicle volumes greater than 7,000 vehicles per day.

The overall average speed recorded along Jumping Creek Road was 62 km/h with 85% of all traffic travelling at or below 68.5 km/h. Given the existing road geometry, speeds over and above the 60 k/ph posted speed limit are a concern.

### 3.6.2 Morning Peak Period Counts

The morning peak period was determined to occur between 8am and 9am, as this takes into consideration both commuter traffic and the school drop-off period.

The results of the AM peak period counts indicate that the majority of traffic is travelling south-west along Jumping Creek Road towards the direction of Ringwood-Warrandyte Road. **Attachment 3 - Jumping Creek Road Traffic Counts Morning Peak** details the directional morning peak period volumes.

### 3.6.3 Evening Peak Period Counts

The evening peak period was determined to occur between 5pm and 6pm, which is predominantly commuter traffic. The school pick-up period generally occurs earlier in the afternoon (2.30-4.00pm) and as such does not coincide with the commuter peak period.

The results of the survey indicate that during the evening peak period, traffic is generally travelling in a north-easterly direction towards the Wonga Park township. **Attachment 4 - Jumping Creek Road Traffic Counts Evening Peak** details the directional evening peak period volumes.

### 3.6.4 Vehicle Classes

All vehicles are grouped into various categories depending on their length. A pictorial description of each vehicle class is provided in **Attachment 5 - Austroads Vehicle Classification System**.

Vehicle Type	Classes	Typical Description
Short	1, 2	Sedan, Sedan towing, Wagon, 4WD, Utility, Light Van, Bicycle , Motorcycle etc
Medium	3, 4,5	Short Towing – trailer, caravan, boat Two and three axle bus or truck Four axle truck
Long	6, 7, 8,9	Three, four, five and six axle articulated vehicles or rigid vehicle and trailer
Medium Combination	10, 11	B Double, or heavy truck and trailer Double road Train
Long Combination	12	Triple road train

Assessment of the traffic data indicates that at Location 1, 94.5% (7,736 vehicles) of the daily traffic is class 1 and 2 vehicles (i.e. single vehicle or vehicle towing a trailer, caravan or boat), with the remaining 5.5% of traffic (450 vehicles) class 3 and above (various types of trucks). Similarly as detailed for Location 1, the majority of traffic along the whole road network is generally Class 1 and 2 vehicles. A further breakdown of the various classes at each location is shown in **Attachment 6 - Traffic Classifications at Each Count Site**.

### 3.6.5 Traffic Comments

Given that Jumping Creek Road is classified as a Council Link Road, the existing volume of traffic recorded along the road is considered to be acceptable. In addition, given the classification of the road, and the function it provides to the road network, it is considered that Jumping Creek Road can carry vehicle volumes higher than those recorded. It is considered that the existing volume of heavy vehicles (Class 3 and above) travelling along Jumping Creek Road is acceptable for the current road classification.

However it is noted, that preliminary future traffic predictions indicate that within 20 years the traffic volume along Jumping Creek Road may increase by approximately 3 to 4 per cent per annum. As a result, the traffic volume along Jumping Creek Road may increase from an overall average of 8,100 (2013) vehicles per day to approximately 15,000 vehicles per day by 2035.

With Jumping Creek Road struggling to provide a safe route for the current usage of the road, it is considered that the existing road cannot safely accommodate any significant increase in traffic volumes, without an upgrade. Given the limited availability of alternative routes within the road network, the upgrade of Jumping Creek Road is considered to be essential.

### **3.6.6 Traffic Counts: 2007 to 2016**

Traffic counts undertaken along Jumping Creek Road between 2007 and 2016 have indicated that traffic volumes have increased by over five per cent between 2008 and 2012 and over six per cent in the year between 2012 and 2013.

Given the cyclical patterns of real estate demand and property and building growth in the region, traffic growth is expected to fluctuate year-on-year, with the expected average growth rate of 3 to 4 per cent per annum considered as a reasonable average forecast.

### **3.7 Crash Data**

Analysis of the VicRoads crash database indicates that a total of 17 crashes occurred along Jumping Creek Road over the five year period from January 2009 to December 2013. This is an increase of five more reported casualty crashes than for the five year period from January 2005 to December 2009. The crash locations are shown on in **Attachment 7 – Map - Jumping Creek Road Crash Locations**.

An analysis of the crash data between 2009 and 2013 indicates that crashes have occurred along the whole length of Jumping Creek Road between Ringwood-Warrandyte Road and Homestead Road. A summary of the date, severity and type (DCA - Definition for Classifying Accidents) of each crash is shown in the table below:

Date	Severity	DCA	General Crash Description
9/06/2009	Other Injury	183	Off left bend into object (fence & gates)
6/08/2009	Other Injury	130	Rear end (vehicles in same lane)
6/12/2009	Fatal	120	Head On (not overtaking – vehicle & motorcyclist)
2/06/2010	Other Injury	152	Pulling out (overtaking – hit right turn -motorcycle and car )
9/06/2010	Serious Injury	120	Head On (not overtaking – car & car)
19/11/2010	Other Injury	120	Head On (not overtaking – car & utility)
16/02/2011	Serious Injury	121	Right through (Panel van & motorcycle)
3/03/2011	Serious Injury	183	Off left bend into object (fence & gates)
16/06/2011	Other Injury	181	Off right bend into object (tree)
18/01/2012	Other Injury	181	Off right bend into object (embankment)
8/02/2012	Other Injury	181	Off right bend into object (tree)
3/09/2012	Other Injury	130	Rear end (vehicles in same lane- vehicles entering intersection)
4/11/2012	Other Injury	120	Head On (not overtaking – utility & utility)
26/12/2012	Serious Injury	184	Out of control on carriageway (on bend)
22/01/2013	Other Injury	183	Off left bend into object (tree)
20/03/2013	Serious Injury	154	Pulling out (rear end)
5/10/2013	Serious Injury	183	Off left bend into object (tree)

Of the 17 crashes recorded in the five year period, one (1) was fatal (motorcyclist), six (6) were considered as ‘serious injury (taken to hospital), and ten (10) involved ‘other injury’ (requiring treatment on site).



The most common type of crash was leaving the road and hitting an object (8), followed by head-on (not overtaking) crashes (4), rear-end crashes (2), pulling-out (overtaking) (2) and right-through crashes at intersections (1).

The fatality and one other crash occurred in the vicinity of 185 Jumping Creek Road. Three crashes occurred in the vicinity of 137 Jumping Creek Road and 241-285 Jumping Creek Road. Two crashes occurred at the intersection with Dudley Road and in the vicinity of 185 Jumping Creek Road. The remainder of crashes occurred at other various locations, and as such cannot be attributed to one factor or intersection.

Diagrams of the traffic movements for each type of crash (DCA) are shown in **Attachment 8 – VicRoads Definitions for Classifying Accidents**.

### **3.8 Environmental Values (Flora and Fauna)**

Two earlier ecological studies and reports prepared for Manningham City Council, *'Flora and Fauna Assessments'* and *'Manningham Roadside Mapping'*, investigated and assessed the environmental values of the Jumping Creek Road corridor.

The reports identified that the environmental values of the area are largely a reflection of the extent and quality of indigenous vegetation that remains within the Road Reserve, and adjacent to the Road Reserve. The 'quantity' and 'quality' of the remnant vegetation in the road reserve varies significantly. Some sections are severely degraded from their 'natural' state (with few, if any, scattered indigenous canopy trees remaining and no understorey), whilst in other sections more 'intact' bushland remains (with higher levels of indigenous tree canopy cover and understorey in at least partially intact condition).

These bushland remnants are considered to have environmental value:

- 'in their own right' as habitat for indigenous fauna and flora;
- as additional and supplementary habitat to adjacent remnants on private and public land; and
- as habitat linkages, providing connectivity between other bushland remnants (a 'wildlife or a habitat corridor' function).

It is also important to recognise that the indigenous vegetation in the study area has other values including; aesthetic, cultural heritage, educational/scientific, recreational, economic, spiritual wellbeing, and 'intrinsic value' (i.e. value in and of itself, irrespective of any use, benefit or enjoyment humans may derive from it).

### **3.8.1 Early Environmental Studies**

The following summarises the two earlier environmental studies conducted which examined and described the environmental values of the Jumping Creek Road corridor:

#### **3.8.1.1 Study 1 – '*Jumping Creek Road, Wonga Park and Warrandyte: Flora and Fauna Assessment (Way S.L. & Muir A.M, 1999)*'**

In this study, a roadside assessment of Jumping Creek Road was undertaken in July 1999 (Ecology Australia P/L, 1999). Flora and fauna values of the roadside vegetation were assessed along the length of the road from Ringwood-Warrandyte Road in the west to Homestead Road in the east. The following points provide an edited summary of the report:

#### **Flora**

- Although the majority of roadside vegetation is degraded, much severely so (particularly east of Hooper Road), several areas of partially intact remnant vegetation were identified and mapped.

- A total of 112 plant species were recorded within the road reservation, of which 68 (61%) are indigenous and 44 (39%) are naturalised exotic species. One additional indigenous species was recorded from the Flora Information System database (DNRE1). Some of the introduced plant species are considered as serious environmental weeds requiring urgent weed control.
- Fourteen of the indigenous species are considered to be of Regional significance in the context of Greater Melbourne.
- Three vegetation communities were recorded along the roadside:
  - Community 1.0: Box – Stringybark Woodland (Local to High Local significance);
  - Community 2.0: Yellow-Box – Candlebark Grassy Woodland (Local to Regional significance); and
  - Community 3.0: Manna Gum Riparian Forest (not sampled in this study) (Local to Regional significance).
- The significance of these vegetation communities varies according to their quality or degree of intactness.

## Fauna

- No significant fauna species were observed during this study. A total of 158 bird species (five State significant species, three Nationally significant species and 12 introduced species), 36 mammal species (one Nationally significant, three State significant species and seven introduced species), 17 reptiles, 12 amphibians (one Nationally significant) and six fish (one State significant and two Nationally significant) have previously been recorded in the vicinity of the study area.
- Jumping Creek Road provides moderate quality habitat for native fauna. In some areas, the native vegetation is highly disturbed. There

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<sup>1</sup> Department of Natural Resources & Environment, now Dept. of Sustainability & Environment (DSE)

is limited floristic composition and structure resulting in a lack of habitat diversity.

- A total of 34 trees were identified as being of ecological importance, providing habitat or a resource for wildlife. The indigenous vegetation along Jumping Creek Road is of ecological importance. The roadside vegetation is potentially a habitat link for native fauna. The roadside vegetation is being utilized by numerous Common Ringtail Possums, especially the section west of Stan Brae Court to Jumping Creek Road.
- Jumping Creek Road is considered a site of Regional zoological significance due to its function as a habitat link between larger sites of State significance. These sites are the most significant areas of fauna habitat and occur adjacent to the roadside reserve rather than along Jumping Creek Road itself. They include:
  1. Warrandyte State Park (including Jumping Creek Reserve) – State Significant.
  2. Stan Brae Court bushland – State Significant.
  3. The bushland south east of Hooper Road (referred to as Hooper Road Bushland for this study) – State Significant.

**3.8.1.2 Study 2 – ‘Manningham Roadside Vegetation Mapping’ (Practical Ecology P/L, Ecocentric Environmental Consulting & Geocode Mapping and Analysis P/L, July 2002 (Gannon P., Allan I. & Kern L.))**

This study assessed the quality and significance of remnant roadside vegetation across the municipality, including the Jumping Creek Road corridor. It was essentially a comparative assessment, and found that the ‘quality’ of the vegetation along the road varied from ‘very good to excellent’ to ‘very poor’, whilst its ‘significance’ varied from ‘highest’ to ‘lowest’. In total it found that Manningham had 340ha of medium to high quality indigenous vegetation on its roadsides.

### 3.8.2 Broader Environmental Values

The broader environmental value of the road reserve as a component of other remnants within the local and regional area is also recognised more indirectly in a number of other relevant ecological reports and plans summarised below.

#### 3.8.2.1 *Manningham Biosites – Sites of (Biological) Significance, Manningham City Council (Foreman P, November 2004)*

This comprehensive review of Manningham’s indigenous vegetation (across all land tenures) identified 35 ‘Biosites’ for the municipality. Biosites are ‘Sites of (Biological) Significance’ for the municipality, and are defined as “Core Conservation Areas” representing those areas that support the majority of Manningham’s biodiversity. Ecological Vegetation Classes (EVCs) are mapped for each Biosite. The biosites are ascribed a ‘significance’ level of National, State or Regional significance according to (then draft) DSE criteria.

Sections of the Jumping Creek Road Reserve are within two biosites:

1. Biosite 3: Stanebrae/Blue-tongue Bend (State significance); and
2. Biosite 5: Haslams Track (State significance).

Additionally the Biosites Review identifies ‘Buffer Conservation Areas’. Buffer areas provide additional (usually adjacent) habitat that tends to consist of the more common indigenous species supporting the ecological integrity and function of the Core Conservation Areas. Much of the road reserve is identified as a Buffer Conservation Area.

#### 3.8.2.2 *Sites of Botanical and Zoological Significance in Wonga Park, (Ecology Australia, Bedggood B.E. et. al., January 1997)*

The study area for this report only included the section of the Jumping Creek Road corridor from where, if Haslams Track continued to the north, would intersect Jumping Creek Road, east to where Jumping Creek Road ends at Lower Homestead Road.

None of the Jumping Creek Road Reserve was included within a site of significance; however the Reserve was identified as providing links between Sites of Significance. The report recommended a more detailed assessment of this and other road reserves.

### **3.9 Resident and User Concerns**

Increased traffic volumes and wider usage of the road by cyclists and pedestrians have given rise to various concerns, and raise the following issues:

#### **3.9.1 Road Environment**

- Increased traffic volumes;
- Trucks and commercial vehicles using the road in increasing numbers;
- Traffic noise;
- Excessive speed;
- Inadequate vertical and horizontal alignment (crests and curves);
- Road is within a recognised conservation zone;
- Wildlife being killed and injured including kangaroos, echidnas, native ducks and lizards (amongst other wildlife);
- Inadequate pedestrian crossings;
- Lack of safety for cyclists and horse riders;
- Lack of slower speed zones at school crossings;
- Roadside litter; and
- Inadequate bus stops at Dudley Road and outside of 66 Jumping Creek Road.

### 3.9.2 Natural Environment

- Need to retain roadside vegetation;
- Need to protect fauna habitat; and
- Significance of wetlands adjoining the road at 117-123 Jumping Creek Road & Stane Brae Court and the necessity to retain the drainage systems feeding water from the road into these wetlands (and ecosystems).

The preparation of this Development Framework is an undertaking to address the above concerns by achieving a solution that provides a safe, yet functional road that has a minimal impact (as practical) on the environment and maintains the aesthetic character of the area.

## 4 Strategic Context – Legislation and Policy

The following provides a summary of the State and Local Legislation and Policies as they impact Jumping Creek Road.

### 4.1 Federal and State Environmental Legislation and Planning Controls

The following sections provide a summary of the Federal and State environmental legislation and planning controls affecting Jumping Creek Road.

#### 4.1.1 State and Federal Legislation

##### Environment Protection and Biodiversity Conservation (EPBC) Act 1999

This federal legislation establishes a process for assessing developments that have national environmental significance and for those on Commonwealth land. A referral to the Federal Government is triggered under the Act if a proposed action is likely to have a 'significant impact' on certain 'matters of national conservation significance' that are defined by the Act.

It is considered that no referral under the Act is required on the basis of current information.

##### Flora and Fauna Guarantee (FFG) Act 1988

This Victorian legislation aims to conserve threatened species and communities and manage 'threatening processes'.

Protected flora within the study area includes *Acacia* species (except Blackwood *Acacia melanoxylon*), any of the Asteraceae (Daisies) family, and all orchids, ferns and grass trees. Six flora species previously recorded in or near the study area are listed under the FFG Act.



Two listed fauna species (Powerful Owl and Common Bent-wing Bat) are found within vegetation contiguous with the study area. These species are highly likely to either reside in or regularly utilise habitats within the study area. Another FFG Act listed species, Brush-tailed Phascogale, is known to reside in or utilise remnant vegetation along Jumping Creek Road.

Wildlife Act 1975 / Wildlife Regulations 2002

The purpose of the *Victorian Wildlife Act* is to promote the protection and conservation of wildlife and regulate activities concerning or related to wildlife. Amongst other things it provides for a system of permits and licenses for the keeping or taking of wildlife

Catchment and Land Protection (CaLP) Act 1994

The CaLP Act is Victorian legislation that covers catchment planning, land management, noxious weeds and pest animals. In relation to this project the CaLP Act directs that Council is responsible to control any infestation of noxious weeds that may become established after the works have been completed

Aboriginal Heritage Act 2006 / Aboriginal Heritage Regulations 2007

This Victorian Act links land use planning/development processes with the identification, protection and management of Aboriginal cultural heritage.

It requires the preparation of a 'Cultural Heritage Management Plan' (CHMP) for a site if all or part of an activity is a defined 'high impact activity' and all or part of the activity is in an area of cultural heritage sensitivity, not already subject to significant ground disturbance. It then prescribes standards for the preparation of a CHMP.

Areas of cultural heritage sensitivity include land within 200 metres either side of an existing or 'prior' waterway, registered cultural heritage sites and land

locations meeting a number of other criteria. In this case, relevant to the area surrounding the Jumping Creek (waterway).

#### Environment Protection Act 1970

This Act sets the regulatory framework for the prevention of pollution in relation to air, land and water. The Act gives rise to State Environment Protection Policies, which define objectives for the protection of the environment. The *State Environment Protection Policy (Waters of Victoria, 1988)* defines objectives to support the beneficial uses of waterways within Victoria and also reflects the requirements of national water quality guidelines. These objectives apply to runoff from the construction and operation of roads.

### **4.1.2 Federal /State/ Local Planning Controls**

#### **4.1.2.1 Planning and Environment Act 1987/Manningham Planning Scheme**

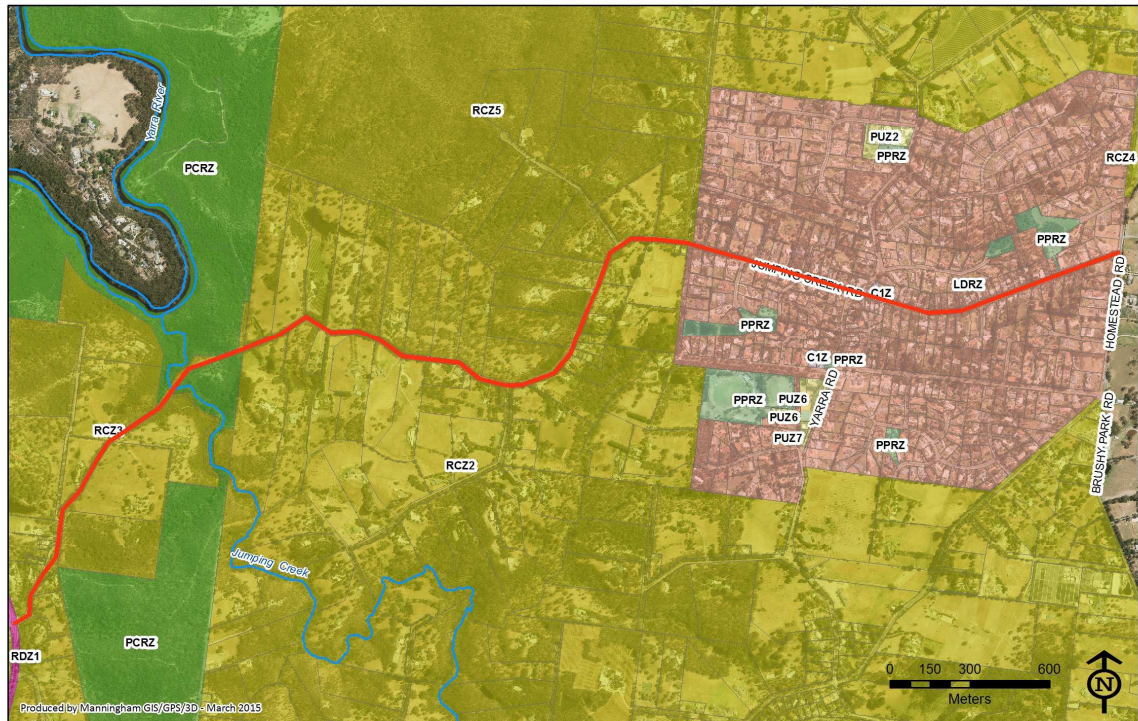
The Victorian '*Planning and Environment Act 1987*' establishes controls applied through Municipal Planning Schemes to regulate the use and development of land, including provisions relating to native vegetation.

#### **Zoning**

Jumping Creek Road traverses through Manningham's 'Green Wedge' – the area of the municipality that is located outside of the State Government's 'Urban Growth Boundary' (UGB).

Jumping Creek Road crosses five different planning zones controlling underlying and adjacent land uses, as illustrated on the following map. These zones include:

PLANNING ZONES



- Rural Conservation Zone (RCZ2 and RCZ3)**

The purpose of this zone is mainly to conserve natural values and:

- “..to encourage development and use of land which is consistent with sustainable land management and land capability practices, and which takes into account the conservation values and environmental sensitivity of the locality.”; and*
  - “To provide for agricultural use consistent with the conservation of environmental and landscape values of the area.”*

In the RCZ2, the minimum lot size for subdivision is 4ha, whilst in RCZ3 the minimum lot size is 8ha.

- Low Density Residential Zone (LDRZ)**

The main purpose of the LDRZ is to:

- “...provide for low-density residential development on lots which, in the absence of reticulated sewerage, can treat and retain all wastewater.”*

The schedule to the LDRZ specifies that within Manningham, the minimum lot size for subdivision for all land zoned LDRZ, is 0.4ha (4,000m<sup>2</sup>).

- **Public Conservation and Resource Zone (PCRZ)**

This zone applies to public land, with the purpose of the PCRZ to:

- *Protect and conserve the natural environment and natural processes for their historic, scientific, landscape, habitat or cultural values; and*
- *Provide facilities which assist in public education and interpretation of the natural environment with minimal degradation of the natural environment or natural processes.”*

- **Public Park and Recreation Zone (PPRZ)**

This zone only applies to a small area of the road reserve adjacent to No. 10 Jumping Creek Road in Wonga Park which is in close proximity to the intersection of Homestead Road. The main purpose of the zone is to:

- *Recognise areas for public recreation and open space.*
- *Protect and conserve areas of significance where appropriate.*

- **Commercial 1 Zone (C1Z)**

This zone applies only to a small area of the road reserve adjacent to one lot located at the corner of Dudley Road and Jumping Creek Road in Wonga Park. The main purpose of the zone is:

- *‘to create vibrant mixed use commercial centres for retail, office, business, entertainment and community uses, as well as residential uses at densities that complement the role and scale of the commercial centre’.*

The development of land for ‘roadworks’ does not require a planning permit under the zones affecting the land along Jumping Creek Road.

### **Overlays**

The following overlays are applicable to the Jumping Creek Road corridor:

Environmental Significance Overlay – Schedule 1 (ESO1)

The ESO1 applies to a relatively short section of the road reserve either side of where it crosses Jumping Creek. The purpose of the overlay is amongst other things, to protect areas along the Yarra River from development that may damage the streamside environment as a visual, conservation, ecological and recreation resource.

It controls subdivision, most buildings and works, exotic tree removal over a certain height, branch spread and trunk circumference, and native vegetation removal.

Environmental Significance Overlay – Schedule 2 (ESO2) and (ESO3)

Overlays ESO2 and ESO3 affect a predominant part of the road reserve. These controls extend from Ringwood-Warrandyte Road in the west, to Hartley Road in the east. Whilst these overlay controls do not overlap, they have a strong interrelationship with one another.

Sites covered by an ESO2 have been assessed as being the most intact and significant areas of indigenous vegetation, and are known as Manningham's 'Core Conservation Areas'. Areas of vegetation of the highest quality within the Core Conservation Areas are referred to as 'Critical Conservation Areas'.

Particularly relevant ESO2 objectives are to:

- *Protect and enhance the ecological values of Critical and Core Conservation Areas;*
- *Encourage development that is compatible with the conservation and protection of the ecological values of the area; and*
- *Ensure that development responds to the area's environmental and landscape characteristics, including topography and waterways.*

Sites covered by ESO3 have been assessed as being either Buffer Habitat or other land with environmental and/or landscape values that support Core Conservation and Buffer Habitat areas.

Particularly relevant ESO3 objectives are to:

- *Protect and enhance the ecological values of Buffer Conservation Areas;*
- *Protect the ecological values of Critical and Core Conservation Areas; and*
- *Ensure that development responds to the area's environmental and landscape characteristics, including topography and waterways.*

Both ESO2 and ESO3 control most buildings and works, subdivision and Victorian native vegetation tree removal, including dead eucalypts. A permit is not required in ESO2 and ESO3 for the removal of exotic vegetation or specified environmental weeds. The ESO3 also controls Australian native tree removal over a certain height, branch spread and trunk circumference. However, in some case, exemptions in triggering a planning permit do apply.

#### *Environmental Significance Overlay – Schedule 4 (ESO4)*

The ESO4 applies to the section of the road reserve from Hartley Rd in the east, to the western end of Jumping Creek Road at the intersection with Homestead Road. The main purpose of ESO4 is to protect Core and Buffer Conservation Areas that are located within the Low Density Residential Zone (LDRZ).

The ESO4 controls the removal of Victorian native vegetation, including dead eucalypts. It also controls exotic or Australian native tree removal over a certain height and trunk circumference. A permit is not required for the removal of specified environmental weeds. In some cases ESO4 controls buildings and works.

**Attachment 9 - Planning Overlay - ESO1, ESO2, ESO3, ESO4** provides a map illustrating the locations and extent of where these overlays applying to the area.

*Significant Landscape Overlay – Schedule 1 (SLO1)*

The SLO1 applies to a very small section on the south side of the road reserve of Jumping Creek Road, within close proximity to the Upton Court intersection. The main purpose of the SLO1 is to protect areas of visual, landscape and environmental values that are located within the Low Density Residential Zone (LDRZ).

The SLO1 controls the removal of Victorian native vegetation including dead eucalypts (although some permit exemptions do apply). It also controls exotic or Australian native tree removal over a certain height and trunk circumference. A permit is not required for the removal of specified environmental weeds. In addition, the SLO1 controls some of the outcomes of buildings and works.

**Attachment 10 - Planning Overlay - SL01** provides a map illustrating the location and extent of this overlay applying in the area.

*Land Subject to Inundation Overlay (LSIO)*

The LSIO applies to a very small section of the road reserve, either side of the Jumping Creek. **Attachment 11 – Planning Overlay – LSIO, WMO** provides a map illustrating the location and extent of this overlay applying in the area.

The most relevant purposes of the LSIO are to:

- *Ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, is compatible with the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity; and*
- *Protect water quality in accordance with the provisions of relevant State Environment Protection Policies, particularly in accordance*

*with Clauses 33 and 35 of the State Environment Protection Policy (Waters of Victoria).*

The LSIO controls most buildings and works, as well as subdivision.

*Proposed Manningham Planning Scheme Amendment –Improving Flood Management (C109)*

The proposed Amendment C109 - Improving Flood Management in Manningham - implements revised flood modelling for the City of Manningham which has been recently undertaken by both Melbourne Water and Council.

Relevant to Jumping Creek Road specifically, the Amendment proposes to amongst other changes; alter the Manningham Planning Scheme to:

- *Amend the Municipal Strategic Statement (MSS) at Clause 21.12 Infrastructure and at Clause 21.16 Key References to include reference to:
  - i. *The ‘Flood Management Plan for Manningham Council and Melbourne Water June 2011’ which provides the strategic framework for establishing the appropriate Planning Scheme overlays to reflect the results of the flood mapping project and;*
  - ii. *The ‘Development of the Special Building Overlay – Technical Report for Manningham City Council (Cardno) September 2015’, which provides an overview of the methodology used in the flood mapping of the five local catchments.**
- *Replace the Special Building Overlay (SBO) and Land Subject to Inundation Overlay (LSIO) maps with updated maps to reflect the revised flood extent (land subject to inundation in a 1 in 100 year storm event).*

Amendment C109, when adopted will update the LSIO map in the vicinity of the Jumping Creek Road Bridge.

*Wildfire Management Overlay (WMO)/Bushfire Management Overlay (BMO)*

The WMO/BMO applies to a significant area of the road reserve, particularly between east of Hartley Road and Nelson Road. **Attachment 12 – Planning**



**Overlay – LSIO, WMO** provides a map illustrating the location and extent of this overlay applying in the area.

The most relevant purposes of the WMO are to:

- *Ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire;*
- *Identify areas where the bushfire hazard warrants bushfire protection measures to be implemented; and*
- *Ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.*

The WMO controls most buildings and works, as well as subdivision.

#### **4.1.3 No Net Loss / Planning Controls**

##### *The Native Vegetation and Biodiversity Vegetation Framework (No Net Loss)*

In December 2013, VC105 introduced ‘*The Permitted clearing of native vegetation – Biodiversity Assessment Guidelines (No Net Loss)*’ into the Victorian Planning Provisions to manage native vegetation for biodiversity. These 2013 Guidelines replaced Victoria’s ‘*Native Vegetation – A Framework for Action (Net Gain)*, (2002)’.

Clause 12 of the State Planning Policy Framework (SPPF) states that planning must consider these guidelines to ensure that decision-making takes into account the impacts of land use and development on Victoria’s biodiversity.

The purpose of Clause 12.01 of the SPPF is to:

- *Ensure that biodiversity is considered in strategic planning processes and that potential impact on biodiversity from uses and developments are identified and appropriately managed; and*
- *Outline the approach for assessing applications for permits to remove native vegetation.*

The Guidelines set out the rules and tools for how Responsible or Referral Authorities should consider biodiversity when assessing an application for a permit to remove native vegetation.

The objective for permitted clearing of native vegetation in Victoria is:

**‘No net loss’** *in the contribution made by native vegetation to Victoria’s biodiversity*”. The key strategies for ensuring this objective is achieved at the permit level include:

- Avoiding the removal of native vegetation that makes a significant contribution to Victoria’s biodiversity;
- Minimising impacts on Victoria’s biodiversity from the removal of native vegetation; and
- Where native vegetation is permitted for removal, ensuring it is offset in a manner that makes a contribution to Victoria’s biodiversity that is equivalent to the contribution made by the native vegetation to be removed.

The Guidelines only address the biodiversity objective for managing native vegetation - they do not achieve non-biodiversity objectives for native vegetation management (i.e. land management, erosion, salinity, amenity or landscape objectives).

#### Permit for Removal of Native Vegetation

Under Clause 52.17 (Native Vegetation) a permit is required to remove native vegetation within a roadside or on a property of more than 4,000 sqm.

A permit is not required to remove native vegetation if considered exempt in accordance with Clause 52.17-7. For example, a permit is not required to remove native vegetation on a property of less than 4,000 sqm (0.4 hectare), or to maintain the safe and efficient function of a road in order *‘To maintain the safe and efficient function of an existing road managed by a public authority or municipal council in accordance with the written agreement of the Secretary of the Department of Environment and Primary Industries (as constituted under Part 2 of the Conservation, Forest and Lands Act 1987)’*.

Works to Jumping Creek Road cannot commence until thorough updated environmental assessments have been undertaken to inform all necessary planning and environmental (legislative) approvals (i.e. planning permit) prior to works commencing. Measures to limit vegetation losses, vegetation offset requirements for lost vegetation and measures to mitigate impacts to local fauna will all be addressed through this process.

Any application sought by Council for either 'roadworks' or 'vegetation removal' will be required to be publically advertised under the requirements of the Manningham Planning Scheme to provide opportunity for 'Third Party Appeal Rights'.

#### **4.1.4 Vic Roads / AustRoads Road Standards and Guidelines**

National road design guidelines relevant for the reconstruction of Jumping Creek Road include:

- AUSTRROADS Urban Road Design: A Guide to the Geometric Design of Major Urban Roads;
- AUSTRROADS Guide to Traffic Engineering Practice –
  - Part 5 Intersections at Grade.
  - Part 13 Pedestrians.
  - Part 14 Bicycles.

Additional road authority guidelines applicable in Victoria include:

- VicRoads Road Design Guidelines –
  - Part 2 Horizontal and Vertical Geometry
  - Part 3 Cross Section Elements.
- Australian Rainfall and Runoff (ARR)

## 4.2 Local Policies and Strategies

### 4.2.1 Manningham Council Plan

Consideration to upgrade Jumping Creek Road and the associated preparation of the Development Framework are consistent with Manningham Council's 2013-2017 Council Plan vision "*To be a city that values people, heritage and resources. A city with a strong economy and diverse social and natural environment that will enrich our vibrant community.*"

Relevant to the Jumping Creek Road upgrade is: Theme 2: Enjoy and Protect Our Natural Spaces, which states '*Our unique balance of City and Country is one of our defining traits. "We value Manningham's natural environment and endeavour to maintain and protect it as a valuable community resource"*. With the following relevant Goals of ensuring that:

- *Our unique balance of City and Country is safeguarded into the future; and*
- *Our open spaces, bushlands, creeks and rivers are valued and preserved.*

### 4.2.2 Link Road Improvement Strategy (2014)

This Strategy aims to guide priorities for the future development of the remaining partially constructed link roads across the City of Manningham. The ultimate objective of the *Link Road Improvement Strategy 2014* is the development of a link road network that is safe, accessible and functional for all road users whilst reducing road trauma and impacts on the environment.

The purpose of Link Roads are to provide the main avenue of traffic movements within the municipality to the wider road network including the Local Collector and Local Access Roads and State Arterial and National Highway road network. The characteristics and purpose of a Link Road are:

- A road that links towns, places of significance and industries;
- A road with a high percentage of through traffic;
- Include access to abutting residential, industrial and commercial properties; and
- Cater for higher traffic volumes, traffic speeds and heavy vehicles than local roads.

Project priorities for previous Manningham Arterial Road Improvement Strategies have generally been based on the economic and safety benefits arising from road projects with less emphasis on the people throughput of a road. This strategy has taken a more 'people-oriented' approach and has focused on the benefits to all road users and improved people throughput as a result of a road upgrade.

Following the application of the above criteria to all potential Council Link Road improvement projects, the '*Link Road Improvement Strategy 2014*' has determined a priority list of roads and improvement projects.

In establishing the improvement priorities the Link Road Strategy recognises that the reconstruction of Jumping Creek Road will be undertaken as a part of the *Jumping Creek Road Development Framework*. This independent strategy is required due to the complexity of the project and the environmental sensitivity of the area, both in terms of fauna and flora values.

The reconstruction of Jumping Creek Road will occur as a staged construction over several years, and has been included in Councils' 10 year indicative Capital Works Program commencing in 2017/2018. Given that the project has a separate budget allocation, the funding prioritisation of this project against other proposed link road projects was not considered to be necessary as part of the *Link Road Improvement Strategy 2014*.

### **4.2.3 Manningham Integrated Transport Strategy 2009 (Making Manningham Mobile)**

The aim of the *Manningham Integrated Transport Strategy (MITS)* is to provide a sustainable, safe, equitable, efficient transport system for the City of Manningham residents and businesses. The strategy is intended to complement, rather than replace, approved Council strategies relating to arterial roads, public transport, road safety, bicycles and land use/development. It is also intended to mesh with integrated transport strategies from other Councils in the region, and with the State Department of Transport, Planning and Local Infrastructure (DTPLI) strategies for Melbourne as a whole.

A key aspect of MITS is to identify actions to improve the quality and accessibility of public transport, walking and cycling facilities and services, and to encourage their use by both local and non local residents, workers and visitors. This remains the main theme of MITS and is incorporated into the document *Making Manningham Mobile (MMM)*. A key objective identified in MITS is to foster a safe place to live for people of all ages and ability with an opportunity for 'improvements to road safety' (fixing accident black spots).

The *Manningham Integrated Transport Strategy* is due to be reviewed and updated in coming years.

### **4.2.4 Road Safety Strategy (2010 – Supplemented 2014)**

The *Road Safety Strategy 2010* was supplemented in 2014 with updated statistics and data and an update of the actions to be implemented. The objective of this Strategy is to achieve a safe road environment in Manningham and to improve awareness of individual responsibility for road safety among road users.

Manningham City Council recognises that even a single life lost or one person seriously injured is one too many.

Adopting 'Vision Zero', the Strategy acknowledges that road crashes will continue to happen, and the best course of action is to minimise the effect and decrease the number of fatalities and serious injuries to zero over the long term.

Flowing from 'Vision Zero', the Strategy encompasses the 'Safe System' approach, adopted by both the Federal and State governments, aiming to build a road system that offers maximum protection to all users by providing safer road infrastructure, increasing the proportion of safe vehicles on our roads, and improving the safe behaviour of road users by targeting areas such as speeding, drink and drug driving, fatigued driving and driver distraction. The *Road Safety Strategy* also indicates that a high number of casualty crashes within Manningham occur on the Arterial and Council Link (Arterial) Road network where higher traffic volumes occur.

Council has an obligation to its community, residents and all road users to provide a safe road environment through appropriate road design. Infrastructure improvements to Jumping Creek Road will be consistent with the Road Safety Strategy's safe system approach.

#### **4.2.5 Manningham Bicycle Strategy (2013)**

The *Manningham Bicycle Strategy 2013* sets out the vision, takes into account the State and Federal Government strategic context and makes recommendations regarding the scope of actions required to encourage greater uptake of cycling as a viable and safe mode of transport within Manningham. This Strategy will guide Council in local implementation, such as the development of bike paths, end of trip facilities (bike parking, seats), advocacy initiatives, and marketing and promotional activities.

A bicycle network has been developed illustrating the proposed on-road and off-road shared path routes to be implemented over the life of the Strategy. The Strategy is supported by a separate and complimentary 'Action Plan' document which details the various actions to be implemented on an annual basis.

The *Manningham Bicycle Strategy 2013* identifies the majority of Jumping Creek Road as part of the Ultimate Bicycle Network with an off-road shared path to be provided along this corridor. It also provides future opportunity for cross-municipal connections to the bicycle network in the Shire of Yarra Ranges.

Where proposed bicycle routes coincide with the Principal Pedestrian Network (PPN) routes, the works will be coordinated and be jointly funded from both program budgets.

#### **4.2.6 Principal Pedestrian Network (PPN)**

The *Principal Pedestrian Network Plan* recognises the need to encourage increased levels of pedestrian activity to realise the associated transport, safety, environmental and health and wellbeing benefits of walking.

Development of the PPN assists in addressing the perceived risk associated with walking, through increased natural surveillance, as a result of increasing the numbers of pedestrians.

Council funding of the PPN is proposed, as the routes to be included in the network are to form key strategic pedestrian routes which will attract higher volumes of pedestrian traffic, accessing primary destinations across the municipality.



A section of footpath may be identified as being part of the PPN, as well as being identified in another Council strategy or management plans, (e.g. the *Bicycle Strategy*). PPN funds are to be reserved for the upgrade / construction of footpaths where there is no alternative funding source. PPN path routes identified in a management plan or other strategy where there are associated capital funds are to be funded from these sources, rather than from PPN funds.

The Plan identifies Jumping Creek Road as a proposed PPN route with construction of the shared path to be funded as part of the overall upgrade of Jumping Creek Road.

### **4.2.7 Public Open Space Strategy (2004)**

This Strategy provides a guide for the strategic planning, development, use and management of the open space network within the City of Manningham.

The vision for the next 20 years is for an open space network which provides a range of active and passive recreation opportunities in accordance with community needs, which is readily accessible, conserves and enhances the natural and cultural resources of the municipality, contributes to the local economy and offers an amenable environment in which to live, work and visit for current and future generations.

To achieve the above vision, the Strategy identifies and explores 11 objectives. These objectives cover the issues of:

- Meeting existing and future recreation needs;
- Providing quality and accessible open space;
- Identifying and filling gaps in the open space network;
- Marketing and programming opportunities for open space;
- Facilitating and improving communication between open space stakeholders;

- Implementing a system for the development of open space;
- Protecting, enhancing and increasing biodiversity values of open space;
- Implementing responsible and responsive financial management for development and management of open space;
- Providing high quality management and maintenance of open space;
- Ongoing monitoring of open space use and stakeholder satisfaction; and
- Establishing and measuring of key performance indicators for implementation of the *Open Space Strategy*.

The Strategy states that it encompasses road reserves which provide a linear link between areas of open space in terms of wildlife corridor/remnant vegetation and/or pedestrian/cycling in its definition of open space, however there is no mention of any specific road reserves within the Strategy.

#### **4.2.8 Manningham Green Wedge Strategy 2004 / Green Wedge Action Plan 2020**

In October 2002 the State government introduced “Melbourne 2030” which highlighted the importance of preserving Melbourne’s remaining Green Wedges including the Manningham Green Wedge area. This required each Green Wedge municipality to develop their own Green Wedge Management Plan. The *Green Wedge Strategy 2004* has since been reviewed and updated with the new *Green Wedge Action Plan 2020*, approved by Council in February 2011.

The Key Objectives of the *Green Wedge Action Plan 2020* are to:

- Promote and support Environmental Care and Stewardship;
- Facilitate Living and Working Sustainably;
- Ensure Sustainable Built form and Infrastructure; and
- Provide supportive Planning Policy and Governance.

The “Sustainable Built Form and Infrastructure” objective states that there is *“opportunity to provide practical demonstration of sustainable places within the Manningham Green Wedge, developed and managed according to ecologically sustainable design principles.”*

The Planning Policy and Governance Objective states that *“Looking after the Green Wedge is a whole-of-Council responsibility. The task of day-to-day operations requires good systems, tools, measurement, skills and culture to ensure that Council’s responsibilities for the Green Wedge are achieved. Sound planning policy requires the people, the skills and the tools to deliver strong performance and provide open and transparent reporting. There is an ongoing task to refine planning and operational processes within Council to ensure that all services are delivered to the highest standards for environmental, economic and social sustainability.”*

In relation to roads specifically, action items include;

- *Review Roadside Management Strategy (2004) and Handbook (2005) and develop processes for roadside vegetation protection where road, equestrian, cyclist and pedestrian pathway works are required, including the Jumping Creek Road project.*
- *Consideration of stormwater harvesting opportunities for Council parks, reserves, roadsides, carparks, private business and agricultural operations.*
- *Continue to implement and improve low impact development practices that area already beneficial to improving water quality outcomes (eg. Swale drains, low impact road design).*
- *Continue to advocate for and ensure new and refurbishment developments demonstrate best practice ESD outcomes through the: establishment of ecologically sustainable community infrastructure as ESD demonstration sites or “hubs” in the Green Wedge and*

*implementation and expansion of council's lightweight pavement program.*

- *Finalise and distribute user-friendly "Development Guide for Areas of Environmental and Landscape significance" to ensure support for Planning Scheme controls.*
- *Ensure the Storm Water Management Plan review incorporates the development of Council processes, specifications and policies to guarantee water sensitive urban design and biodiversity protection measures are assured for all future road construction, building development and capital works projects.*
- *Build Council staff capacity to deliver environmentally appropriate infrastructure including: buildings; facilities; and, water sensitive urban designed roads, car parks and drains.*
- *Ensure Council contracts include best practice environmental management specifications and that contractors are appropriately trained and supervised to minimise impact on natural environmental values during operations.*

A relevant key target from the GWAP 2020 states a 100% target rate "of design and implementation of new road construction to include stormwater treatment capable of achieving best practice water quality".

#### **4.2.9 Roadside Environmental Management Strategy (2004)**

The objective of this Strategy is to protect and conserve native vegetation and sustain the natural environment on roadsides by ensuring appropriate management practices are implemented, whilst maintaining the safe function of the road and protecting community infrastructure.

The Strategy outlines a number of procedures, measures and guidelines that need to be considered during the concept, planning, design and construction

phases of road projects and during road maintenance to minimise environmental impacts.

The Strategy needs to be considered in conjunction with the Manningham Planning Scheme and government policy with regard to planning and removal of any native vegetation within the roadside as a result of any road projects.

The Strategy applies to any Manningham roadsides with significant indigenous vegetation and provides specific guidelines for a range of issues related to the environmental management of roads and road works, many of which are directly relevant to any proposed works on Jumping Creek Road.

The value of the roadside vegetation along Jumping Creek Road is detailed in **Attachment 12 – Map Jumping Creek Road – Roadside Vegetation Significance.**

#### **4.2.10 Horse Riding Strategy (2002)**

This Strategy has been developed to identify opportunities to provide horse riding routes and facilities throughout the municipality and identifies a number of preferred routes, land management requirements and considerations for equestrian recreation.

The Strategy identifies the Jumping Creek Road corridor as a preferred 'informal roadside' route. Given the age of the Strategy, it is considered appropriate that consultation be undertaken to confirm current equestrian requirements as they pertain to Jumping Creek Road, to further determine if, how and where to provided for equestrian facilities along this corridor.

## 4.3 Other Proposals

### 4.3.1 Proposed Northern Arterial Route

The “Northern Route” is identified as an 11 kilometre extension of Reynolds Road in Donvale to Maroondah Highway at Chirnside Park.

The route, originally developed from the 1976 Eastern Corridor Study, and confirmed in subsequent studies as having strategic benefit, is considered by VicRoads as a ‘long-term possible future road’.

VicRoads has assessed long term road capacity improvements and future travel demand in this road corridor. Accordingly, VicRoads are proposing to strategically protect the option of providing this road alignment, subject to further investigations to improve linkages between the eastern end of Reynolds Road and Maroondah Highway. As Falconer Road and Stintons Road are Council roads, they have been prioritised as a part of the *Link Road Improvement Strategy 2014*. However, before this project proceeds, the subject sections of Stintons Road and Falconer Road will need to be gazetted for both to become arterial roads.

Irrespective of the upgrade of the Northern Arterial, there remains a need to upgrade Jumping Creek Road, as an option in itself.

## 5 Identification of Issues

### 5.1 Road Hierarchy – Road Management Act 2004

Within Victoria the three major classifications for roads are:

- National Highway
- State Arterial Roads (includes Freeways, State Highways and Main Roads)
- Local Roads including local link roads

Under the *Road Management Act 2004*, an Arterial Road is a road declared by VicRoads under Section 14 of the Act.

The *Manningham Road Management Plan* classifies Municipal roads based on their function within the road network.

The Local Road Classification establishes a clear distinction between each type of road and has been based on a separate three-tier functional classification system, for the Urban and Rural road networks:

- ‘Link roads’ (previously Council Arterial Road) provide the main avenue of traffic movements within the municipality to the wider road network;
- ‘Collector roads’ distribute traffic between and through residential, industrial and commercial areas to the Arterial and Council Link road network; and
- ‘Access roads’ provide predominately direct access for abutting properties.

Jumping Creek Road is classified as a Council Link (arterial) road with a regulatory speed limit of 60 km/h.

Given that Jumping Creek Road is classified as a Council Link (Arterial) Road, its function should perform to carry high volumes of traffic.

## 5.2 Road Safety Considerations

A road safety audit was undertaken in September 2006 to identify safety concerns along Jumping Creek Road. Minor safety improvements, identified in the audit, were undertaken as short term safety improvement measures along Jumping Creek Road, whilst progressing with a strategy for the long term solution to Jumping Creek Road.

The minor works to Jumping Creek Road in Wonga Park were based on the findings of the Road Safety Audit (2006). Works were undertaken to improve the safety for motorists driving along Jumping Creek Road and included:

- Installation of Raised Reflective Pavement Markers (RRPM) to provide a constant arrangement along the length of Jumping Creek Road;
- Replacement of substandard Curve Alignment Markers (CAMs) for improved delineation on the approach to the curves;
- Installation of new CAMs on curves identified in the road safety audit that had insufficient delineation;
- Removal of redundant line marking;
- Asphaltting of table drains where existing unsealed table drains were excessively deep and presented a safety hazard; and
- A safety hazard caused by a steep drop-off of over 2 metres on the inside of the bend, opposite Hooper Road, was addressed by the installation of a guard rail to reduce the likelihood of vehicles running off the edge.

The Audit also identified a number of major safety issues, including:

### **Trees**

Many mature trees are growing very close to the roadway limiting the width of road shoulders and reducing the opportunity for vehicles to pull off the road



safely in an emergency; increasing the risk of an impact with a tree if a vehicle strays from the sealed road surface.

### **Road Cross-section**

Another significant issue is the existing width of formation of Jumping Creek Road. Not only is the carriageway width (width of traffic lanes) well below desirable standards, the lack of shoulders and minimal clearances to hazards adjacent to the road pavement present considerable safety concerns.

Works in recent years to reduce the depth of the table drains directly abutting the road pavement (ie. no road shoulder present) has reduced the hazard level to some degree.

### **Horizontal and Vertical Geometry (Dips and Crests)**

Arguably the most significant issue with regard to road safety is the substandard horizontal and vertical alignment of the road, with design speeds a minimum of 10kph below the posted speed limit in some areas.

This has an impact on sight distance for through traffic, property access and at intersections. Significant works would be required to achieve appropriate design standards for horizontal and vertical alignment along the full length of the road.

## **5.3 Projected Population and Traffic Growth**

Preliminary future traffic predictions indicate that within 20 years, the traffic volume along Jumping Creek Road will increase on average by approximately 3 to 4 per cent per annum. As a result, the traffic volume along Jumping Creek Road may increase from an overall average of 8,100 (2013) vehicles per day to approximately 15,000 vehicles per day within 20 years. Random traffic counts undertaken along Jumping Creek Road between 2007 and 2014

have confirmed a more moderate traffic volume growth than originally projected for that period.

Given the sparse road network within the Green Wedge and semi-rural area of Melbourne, Jumping Creek Road serves as an important transport link to the growing north-eastern suburbs of Chirnside Park, Lilydale and Mooroolbark.

Given the limited alternative transport/road options in this region, it is considered that the current condition of Jumping Creek Road will be unable to accommodate the above increase in traffic volumes without upgrading the road to address the deteriorating nature of the roadway and roadsides.

### **5.4 Streetscape Character**

The semi-rural nature of the streetscape of Jumping Creek Road as it winds through an environment of large trees and other native vegetation is viewed as an intrinsic value by local residents, the wider community and other road users.

Due consideration will need to be given (during the planning and design phase) to balance the competing priorities of the road function, and ensure that the proposed upgrade respects and compliments the existing character of the area, with particular regard to the characteristic aesthetics of the 'Green Wedge'.

When designing the road and associated infrastructure, consideration should be given to the design objectives of the *Green Wedge Action Plan 2020*, to ensure that design elements compliment and are sympathetic to the Green Wedge environment.

## 5.5 Vegetation and Wildlife Considerations

Identified as containing important native vegetation remnants and native fauna, any proposed works on Jumping Creek Road will be required to satisfy the various regulatory controls governing disturbances to the flora and fauna.

An extensive assessment of flora and fauna was undertaken in 2008, with a subsequent review undertaken in 2015. Both assessment documents are contained within the Framework, and were undertaken to inform the selection of the most appropriate solution to upgrade the corridor. However, current detailed assessments will be required to inform the detailed design of each of the six stages of the project. Suitably qualified consultants will be engaged to undertake this process and subsequent assessment and reports will be prepared, to inform the detailed design and planning approval processes.

### 5.5.1 Recent Environmental Studies

To review and update the information of previous studies and to assess the vegetation according to the former *'Victoria's Native Vegetation - A Framework for Action'*, Manningham City Council commissioned a *'Flora and Fauna Survey and Assessment'* of the road reserve as a component of this Development Framework. The aim was also to provide a basis for detailed road redesign options and any subsequent planning permit application.

Ecology Partners Pty. Ltd. were commissioned in 2008 to undertake a detailed flora and fauna survey and Net Gain assessment of the indigenous flora and fauna and associated environmental values of the road reserve, as well as any adjacent habitats which could be impacted upon by any future road upgrade and associated works.

In September 2013 the State government replaced *'Victoria's Native Vegetation – A Framework for Action' (Nett Gain)* with *'Permitted clearing of native vegetation – Biodiversity assessment guidelines' (No Nett Loss)*. This

new legislation is now incorporated into the Victoria Planning Provisions and all planning Schemes in Victoria. As a consequence, in 2015 Ecology Partners prepared a supplement to the original report to address the impact of the new legislation of 'No Nett Loss'.

The following environmental assessments were undertaken between 2008 and 2015, to help guide the concept planning process and to determine an appropriate solution to upgrade Jumping Creek Road:

- **Attachment 13 – Supplementary Report “*Considerations Under the Biodiversity Assessment Guidelines for Jumping Creek Road Upgrade, Warrandyte Victoria*” (Ecology and Heritage Partners P/L, March 2015);**
- **Attachment 14 – ‘*Flora and Fauna Assessment: and Net Gain Analysis of Jumping Creek Road Reserve, Wonga Park, Victoria*’, (Ecology Partners P/L (Aboltins A., Hynes L. & Froid D), January 2008);**
- **Attachment 15 – ‘*Net Gain Analysis of the concept design for the proposed Jumping Creek Road Upgrade, Warrandyte-Wonga Park*’, (Ecology Partners P/L, 2010).**
- **Attachment 16 – ‘*Spring Survey of Jumping Creek Road Reserve, Warrandyte Victoria*’, (Ecology Partners P/L, April 2009).**

Prior to the commencement of detailed design and planning of each stage of the upgrade, additional environmental, ecological and planning assessments will need to be undertaken to identify and investigate any likely impacts to flora and fauna. These assessments will also be required as part of obtaining any necessary environmental and planning approvals.

The study area was assessed during the period 15 November 2006 to 22 February 2007 with a subsequent flora assessment undertaken in the spring of 2009. The 'study area' included the entire length of the Jumping Creek Road reservation, including adjacent areas contained with adjoining private properties and intersecting local streets.

The following represents a summarised version of the findings from the final report (Attachment 14), produced in January 2008:

### **FLORA**

- A total of 284 taxa of plants (116 indigenous, 168 exotic) were recorded within the study area.
- Of the indigenous flora species recorded, 46 are considered regionally significant within the bioregion. All other indigenous species are considered to be of local significance.
- One state significant flora species [Glaucous Flax-lily *Dianella* sp. aff *longifolia* (Benambra) (*D. perfragrans* m.s.)] was recorded within the study area. It is possible that additional state significant species may occur in the study area in areas of remnant understorey. There is a low to moderate potential for nationally significant flora species to occur within the study area.
- The study area is within the Highland Southern Falls bioregion. Four Ecological Vegetation Classes (EVCs) were identified and are listed below with their conservation status for this bioregion:

EVC Name (No.)	Bioregional Conservation Status
Valley Grassy Forest (47)	Vulnerable
Creeklime Herb-rich Woodland (164)	Vulnerable <sup>2</sup>
Riparian Forest (18)	Least concern
Grassy Dry Forest (22)	Least concern

- Numerous serious environmental and noxious weeds are present along the road reserve, many of which have potential to completely displace remnant native vegetation within the two relevant major EVCs (Grassy Dry Forest and Valley Grassy Forest).
- Eleven of the weed species recorded in the study area are declared noxious under the ‘*Catchment and Land Protection (CaLP) Act*’, two of which, Bridal Creeper and Gorse, are Weeds of National Significance (WONS).
- There is an estimated 2.22 habitat hectares of vegetation contained within the study area, ranging from low conservation significance Grassy Dry Forest to very high conservation significance Valley Grassy Forest. Additionally within these patches are a total of 7 very large old trees and 63 large old trees.

**FAUNA**

- Sixty-four terrestrial fauna species were detected within or immediately adjacent to the study area, comprising 13 mammals (eleven native, two introduced), 47 birds (42 native, five introduced), two reptiles and two frogs. Most of these species are common throughout the local area.

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<sup>2</sup> Subsequent to the Ecology Partners report, an 11/4/08 amendment to the Port Phillip and Westernport Catchment Management Authority (PPWCMA) *Native Vegetation Plan* altered the conservation status of some EVCs. The amendment decreased the conservation status of Creeklime Herb-rich Woodland in the Highland Southern Falls bioregion from ‘Endangered’ to ‘Vulnerable’. The PPWCMA Native Vegetation Plan is a reference document in the Manningham Planning Scheme and provides standards and information for planning permit applications in relation to the achievement of Net Gain. However as no ‘patches’ of indigenous vegetation were defined for this EVC in the study area, the overall net gain assessment part of the report is not considered to be affected by this change in conservation status. The conservation status of the three other EVCs in the study area were unaffected by the amendment. In addition achievement of ‘Net Gain’ was replaced with ‘No Net Loss’ in 2013.

- An additional number of bat species (up to seven species) may also have been recorded using the Anabat recording unit; however the species' calls could not be definitively identified.
- No national or state significant fauna species were recorded within the study area. However, three fauna species of state significance were recorded in adjacent vegetation: Powerful Owl, Common Bent-wing Bat and Koala. Powerful Owl and Common Bent-wing Bat are listed under the *Flora and Fauna Guarantee Act 1988*. No other national or state significant fauna or taxa listed under the *Flora and Fauna Guarantee Act 1988* were recorded during the survey; however one additional significant species (Brush-tailed Phascogale) is a known resident in the immediate area, and given the presence of large areas of native vegetation adjacent to the study area there is potential that additional significant fauna species may occur within the study area.
- Six nationally significant fauna species have previously been recorded from the local area and an additional eight species or habitat for these species, are identified as potentially occurring within a 10 kilometre radius of the study area. However the study area is unlikely to support an ecologically significant proportion of any population of a nationally listed species.
- Twenty-one state significant fauna species have been recorded previously for the area. The likelihood of them occurring in the study area is provided in the full report. Two regionally significant fauna species, the Azure Kingfisher and the Spotted Quail-thrush may occasionally visit the study area.
- Four broad habitat types were defined for the study area and are briefly described as follows.
  1. Remnant Forest/Woodland (all EVCs)  
The remnant forest and woodland in the study area ranges from low/moderate to high value for fauna.

Some areas support key habitat components for a range of fauna such as the presence of hollow-bearing trees, an intact understorey, and the presence of ground debris (logs, rocks, vegetation). Additionally, remnant roadside habitat in the study area connects to larger areas (i.e. >20 hectares) of habitat to the north and south of the study area, and facilitates fauna movement (e.g. Brush-tailed Phascogale and Sugar Glider) throughout the landscape.

The location of likely wildlife corridors within the study area are identified in the full report. This area of forest/woodland is of moderate to high value for fauna. Considered to be of particularly high value for fauna is the roadside vegetation on the north and south of the road at Jumping Creek Reserve/Gravel Reserve. The remainder of remnant forest and woodland between Hartley Road and Homestead Road is considered to be of low to moderate quality. This vegetation lacks important habitat features such as ground debris and an intact understorey, it has undergone high levels of disturbance, and it is unlikely to form part of an important wildlife corridor, however this area does contain hollow-bearing trees, provides habitat for a range of common fauna species, and provides potential foraging habitat for significant fauna such as Powerful Owl.

Remnant woodland habitat provides a valuable resource for a range of fauna. Trees and shrubs provide foraging sites for folivorous, nectarivorous and insectivorous fauna species (e.g. Sugar Glider, Brushtail Possum, Honeyeaters, Wattlebirds) and nesting habitat for many forest birds. Dead stag trees and eucalypts with hollows or fissures provide important roosting and nesting sites for hollow-dependant species such Powerful Owl, Brush-tailed Phascogale, Laughing Kookaburra and Woodland Bats. Large eucalypts also provide roosting, perching and breeding sites for avian raptors, potentially for species such as Black-shouldered Kite and the state



significant Grey Goshawk. Eastern Grey Kangaroos also use this area for daytime concealment and foraging. Reptiles (e.g. Delicate Skink, Garden Skink) were recorded in undergrowth during the survey. A number of additional reptiles and amphibians are likely to use leaf litter and coarse woody debris in the forest and woodland habitat for protection.

## 2. Jumping Creek

Jumping Creek is considered to be of moderate to high habitat value for fauna.

Under normal weather conditions, Jumping Creek is likely to hold water throughout the year and provide habitat for several terrestrial and aquatic fauna species including common native frogs. Frog species were recorded from Jumping Creek during the present assessment, and the study area could also potentially provide habitat for the state significant Southern Toadlet. Ground dwelling mammals such as Common Wombat also use riparian vegetation at Jumping Creek for foraging, dispersal and cover.

## 3. Drainage Lines/Depressions

Drainage lines and depressions occur throughout the study area. They all have some evidence of disturbance but support varying levels of ground debris such as logs, sticks and leaves. They range from low to moderate value for fauna. Drainage lines are likely to hold water periodically throughout the year and provide habitat for several terrestrial and aquatic fauna including common native frogs and potentially the state significant Southern Toadlet. Ground dwelling mammals such as Swamp Rat or Bush Rat could potentially use these areas for foraging, dispersal and cover.

## 4. Exotic Grassland/Weeds

Introduced grassland (lawn) occurs throughout sections of the study area where remnant native vegetation has been removed, and/or

where the soil has previously been disturbed. The introduced grass has been mown in many locations, and this habitat type is considered to be of low habitat value for fauna.

- In total 41 fauna species totally dependent upon tree hollows for their survival and 15 species which are likely to use hollows occasionally (i.e. partially dependent) were either recorded during the survey or have previously been recorded from the local area. Three additional hollow-dependant bat species may also occur in the study area. These species are likely to use both living and dead trees with hollows and fissures for nesting and foraging activities, and as protection from predators and weather.
- The majority of native vegetation within the Jumping Creek Road roadside verge to the east of Hartley Road is likely to contribute to a wildlife corridor. On the southern side of the road there is a linear stretch of remnant vegetation, running almost continuously from approximately 70 metres to the east of Ringwood-Warrandyte Road, through to approximately 150 metres to the east of Hartley Road. On the northern side of Jumping Creek Road a shorter stretch of remnant vegetation would also contribute to this wildlife corridor, running from approximately 150 metres to the south of Nelson Drive to approximately 180 metres to the east of the entrance to Jumping Creek Reserve.

The roadside vegetation within these sections of road is likely to provide an important habitat linkage for wildlife. Large areas of native vegetation are located within close proximity to Jumping Creek Road, the major remnants occurring on public and private land at Jumping Creek Reserve, Gravel Reserve, The Common, Stane Brae Court Bushland, and along Hooper Street. The roadside vegetation along Jumping Creek Road provides a direct linkage between these adjacent

areas of ecological significance, as well as also linking up additional wildlife corridors along Hooper Road and on adjacent private land. This roadside vegetation also provides a north-south linkage across Jumping Creek Road, which bisects a large, continuous patch of native vegetation in Warrandyte State Park and on adjacent private land.

The removal of remnant vegetation within this wildlife corridor area would be likely to inhibit the movement of arboreal fauna species between these large patches of remnant vegetation.

## 5.5.2 Summary of Environmental Issues & Recommendations

### 5.5.2.1 Environmental Issues - Flora and Fauna

The Ecology Partners original *Flora and Fauna Assessment and Net Gain Analysis* (2008) produced for this Development Framework, identified that the main impacts to flora and fauna will arise from the removal or disturbance of remnant vegetation during construction works. The main issues are vegetation and habitat removal, isolation and fragmentation of habitat, loss of hollow bearing trees, and impacts on significant fauna, plant species and communities.

The potential direct impacts are summarised as:

- Loss of an area of least State-conservation-significance for flora and fauna;
- Loss of poor to good quality vegetation remnants from a vulnerable EVC from the Highlands – Southern Fall Bioregion;
- Loss of up to 2.22 habitat hectares of remnant vegetation from the Highlands Southern Falls Bioregion;
- Removal and/or disturbance to areas supporting one native flora species of State-conservation-significance;

- Removal and/or disturbance to areas supporting several native flora species of regional conservation significance;
- Loss of habitat for fauna species of state and regional significance including Powerful Owl, Brush-tailed Phascogale, Common Bent-wing Bat, Koala, and other woodland or forest dependent species;
- Increased fragmentation of remnant native vegetation;
- Fragmentation of fauna habitat and loss of habitat linkages across the landscape;
- Increased distance required for arboreal mammals such as Brush-tailed Phascogale, Sugar Glider and Ring-tailed Possum to cross Jumping Creek Road;
- Increased barrier to dispersal for ground dwelling fauna such as Eastern Grey Kangaroo, native rats and other fauna; and
- Decrease in population sizes of local flora and fauna species.

The study also identified the following 'indirect' impacts:

- Potential for further spread of weeds and soil pathogens from on-site activities and subsequent degradation of remaining native vegetation. In particular, invasive woody weeds such as *Pittosporum undulatum*, *Erica lusitanica*, *Genista linifolia*, *Genista monspessulana*, *Pinus radiata*, *Crataegus monogyna*, *Ulex europaeus* and *Rosa rubiginosa*;
- Disturbance to wildlife from increased human activity, and increase noise during construction;
- Increased mortality to fauna during construction and road works through roadkill (i.e. increase traffic); and
- Indirect impacts to adjoining native vegetation/habitat, and potential offsite affects such as sedimentation and pollution to ephemeral drainage lines.

### 5.5.2.2 Environmental Recommendations - Flora and Fauna

- i. Avoiding and Minimising Vegetation Removal and Impacts
  - a. Any proposed road upgrade should avoid as much of the remnant native vegetation as possible, particularly higher quality areas such as areas of Very High and High conservation significance, Valley Grassy Forest, and particularly, vegetation in the vicinity of Jumping Creek Reserve.
  - b. A number of inherent difficulties with the habitat hectare methodology<sup>3</sup> means that the ground-layer condition maps (codes 1-5 in the Ecology Partners study and mapping), along with the extent of canopy cover and distribution of medium to larger sized trees should be used as the main basis for planning for road alignments and to avoid and minimise impacts (rather than the net gain polygon mapping).
  - c. A 'No Nett Loss' Offset Management Plan must be developed to identify suitable offset sites, to guide management options and to ensure that No Nett Loss outcomes are ongoing and of a secure nature. Prior to management, an audit of the proposed offset sites is required to ensure that the No Nett Loss outcomes are achieved.
  - d. Road works should be concentrated in existing areas that have already been cleared rather than in areas of native vegetation where possible.
  - e. Construction activities, including construction traffic, mechanical injury or alteration to soil surface conditions should be prevented from accidentally damaging the root systems of

trees. This may be achieved by 'Tree Protection Fencing (TPF)' that is clearly sign-posted as 'no go zones', and access by machinery or construction personnel should be prevented except for maintenance and protection of the vegetation.

- f. The proposed road upgrade should avoid areas currently supporting significant flora species, which are generally confined within higher quality native vegetation remnants.
- g. Construction activities should use minimal impact techniques to reduce potential impacts on vegetation and significant flora.
- h. Where any clearing of native vegetation is required, the area cleared or otherwise disturbed during construction should be kept to a minimum. Any clearing that is required should be done carefully to prevent mechanical damage to retained vegetation through falling trees and branches, or other damage such as fuel spills.
- i. No tree branches, soil or other debris should be pushed into retained vegetation.
- j. Construction earthworks, machinery traffic and other disturbance should be restricted to within the final road footprint wherever possible. Material stockpiles, construction buildings and other infrastructure should be placed within cleared land, not within areas of native vegetation, and away from Jumping Creek and main drainage lines.
- k. All contractors should be informed of areas of ecological value and penalties should be imposed if vegetation is removed or disturbed without permission, or outside the area of works. This

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<sup>3</sup> Refer to pages 62-64 of *Flora and Fauna Assessment, and Net Gain Analysis of Jumping Creek Road Reserve, Wonga Park, Victoria*, Aboltins, A., Hynes, L., & Frood, D., Ecology Partners, 2008; for a detailed discussion of these issues.

is particularly relevant to higher quality remnants located within the study area.

ii. Significant Plant Species

- a. Given the potential for significant flora species to occur within the study area, it is considered essential to undertake a targeted flora survey during a more optimal time of the year (i.e. mid to late spring), in areas containing remnant understorey vegetation.
- b. As a last resort, native plant species, particularly species of national, state and regional conservation significance, should be salvaged from the study area prior to any disturbance.
- c. Subject to the necessary approvals, salvage and propagation of significant species for replanting in areas of suitable protected habitat is recommended, unless protection of the species during and after construction can be ensured. Even if measures can be taken to protect significant plant species in situ during construction, collection of propagation material for production of additional plants for revegetation should be considered.
- d. A program for collection, propagation and replanting of suitable species should be developed when the road upgrade plan and overall extent of proposed clearing is determined.

iii. Significant Fauna Species

- a. Ground dwelling mammals, reptiles and frogs are likely to be lost during habitat removal or disturbance. Ground fauna of conservation significance should be salvaged along with other more common fauna which are likely to be encountered during construction.

- b. Hollow-bearing trees should be retained where possible; however, where this cannot be achieved then arboreal fauna should be salvaged.
  - c. To address the increased risk of fauna road kill due to the widening of the road, the installation of fauna overpasses and/or underpasses should be investigated.
  - d. A reduction in the speed limit may also be considered (for example, a reduction from 60 to 50 kilometres per hour) to reduce fauna road kill at key locations along the road.
- iv. Hollow-dependent Fauna
- a. Salvage of hollow-dependent fauna and relocation measures should be implemented immediately prior to and during any clearance of hollow-bearing trees in the study area (If fauna salvage is undertaken, a permit under the *Wildlife Act 1975* may be required from the Department of Sustainability and Environment).
  - b. Salvaged fauna should be released within vegetation adjacent to the point of salvage, and not translocated to another location
  - c. Salvage and relocation measures should be undertaken by a qualified zoologist experienced with these operations
  - d. The installation of nest boxes should also be considered as a substitute for the removal of hollow-bearing trees. Nest boxes could be installed where an inspected tree has been found to house hollow-dependant fauna, or shows evidence of recent fauna presence (e.g. fresh nesting material, feathers, fur). Nest boxes should be installed in a suitable tree, as close as practicable to the former location of the removed hollow-bearing tree, and installed either prior to or as soon as possible after the removal of the hollow-bearing tree.



- v. Fauna Overpasses and/or Underpasses
  - a. The installation of fauna overpasses and/or underpasses along Jumping Creek Road should be investigated to mitigate against the increased risk of fauna mortality due to the widening of the road. A simple fauna overpass design incorporating rope structures strung across the road could provide safer crossing points for arboreal mammals. Similarly, underpasses in the form of box culverts (one metre by one metre in size) could potentially be installed opposite large areas of high quality habitat to facilitate ground dwelling fauna to move under the road pavement.
  - b. Key locations that should be considered for fauna overpass/underpass structures and reduced speed limits include: the vicinity of Jumping Creek Reserve/Gravel Reserve, The Common, Stane Brae Court Bushland, and the intersection of Hooper Street and Jumping Creek Road.
  
- vi. Weed Management
  - a. Weed control and management can best be achieved by post-construction weed control and minimising areas disturbed during construction.
  - b. Weed control management should be carried out for a ten year period post construction.
  - c. Herbicide use must be carefully managed and supervised to avoid damage to non-target organisms, and herbicides selected that have minimal effects on aquatic fauna inhabiting waterways and other water bodies (e.g. dams).
  - d. To prevent the further spread of weeds into areas of ecological value, populations of weeds that are listed under provisions of the *Catchment and Land Protection Act 1994* for the Port Phillip

and Westernport Region should be identified prior to any road works.

- e. The requirements under the *Catchment and Land Protection Act 1994* for the control of infestations of noxious weeds during and after the road works must be recognised and adhered to.
- f. All vehicles, equipment and machinery to be thoroughly washed down and inspected at a suitable location such as the Manningham Works depot, prior to commencing work on the site and if returning from the site after work in another area/municipality.

### **5.5.2.3 Environmental Issues during Construction – Storm Water, Soils and Sediments**

Road runoff and drainage, especially during the construction phase, has the potential to impact aquatic and terrestrial ecosystems through changes to water quality, quantity and flow paths.

#### Water Quality

Soil disturbance resulting from construction works and vegetation removal threatens the water quality of receiving waterways, dams and drainage lines. Exposed soils have the potential to be washed away during rain, causing sediment flows and possible sedimentation of drains, dams and waterways. Physically, sediment interferes with the respiration and feeding of aquatic plants and animals. Windblown soils as dust can have a similar effect. Muddy sediment can smother stream beds where aquatic animals live, reproduce and obtain nourishment. Muddy material suspended in water can choke and abrade aquatic organisms and their eggs. Suspended material can also reduce visibility and the ability of fish and other organisms to capture prey. Suspended and coloured materials can block sunlight and prevent the growth of aquatic plants. Sediment can fill dams and block waterways and drains, thereby increasing removal or dredging costs.

Siltation of streams can reduce their capacities to carry flood waters and increase the risk of flooding as a consequence.

Chemically, pollutants such as heavy metals, hydrocarbons and nutrients can also be attached to sediments, potentially causing chemical contamination of waterways (refer table 2 & 3 below). Increased levels of nutrients such as phosphorous and nitrogen can contribute to the accelerated growth of nuisance aquatic plants and cause a reduction in the levels of dissolved oxygen. Increases in nutrients are a principal cause of algal blooms. Such nutrients are usually associated with fine suspended sediments in runoff.

**Table 2: Common Source of Pollutants in Urban Runoff<sup>4</sup>**

Pollutant Source	Sediments	Nutrients	Oxygen demanding materials	Heavy metals	Toxic organic wastes	Micro-organisms	Hydro-carbons
Road and pavement wear	X						
Vehicle wear	X			X			
Vehicle fuels and fluids	X		X	X		X	X
Fuel combustion		X		X			X
Soil erosion	X	X	X	X			
Human and animal waste	X	X	X	X		X	
Pesticides and herbicides		X		X	X		
Fertilisers		X			X		
Paints and solvents				X			X
Industrial activities	X	X		X	X		X
Household chemicals	X	X			X		X

**Table 3: Main sources of metals in urban stormwater<sup>5</sup>**

	Lead (Pb)	Zinc (Zn)	Copper (Cu)	Chromium (Cr)	Cadmium (Cd)	Nickel (Ni)
Vehicle tyre and brake pads		X	X		X	
Corrosion of metal objects		X				
Petrol additives	X					
Lubrication oil					X	
Metal industry			X	X	X	X
Domestic products			X	X	X	X
Pesticides and fertilisers				X	X	
Dye and Paint				X		
Engine parts				X		X
Paper				X		

Avoiding and minimising sediment discharge should be the priority during the construction phase of roadworks, whilst in the post-construction phase the

<sup>4</sup> Source: *Guidelines for Treatment of Stormwater Runoff from the Road Infrastructure*, Austroads Inc. 2003

<sup>5</sup> *ibid.*

primary pollutants associated with sealed roads are those more chemical in nature such as heavy metals, nutrients and hydrocarbons.

Changes to water 'quantity' (the volume of stormwater runoff) result from the increased impervious surfaces of sealed roads. This can result in higher peak flow rates in local drains and waterways. In turn this increases the size and frequency of habitat disturbances in receiving dams or waterways, adversely impacting species unsuited to such conditions. It has been calculated that on average 40-50% of the impervious area of urban catchments is associated with roads.<sup>6</sup>

### Water Flow path

Changes to water flow paths can result when a road interferes with natural flow patterns, and can contribute to water-logging, draining of wet areas, and inundation of dry areas. Changes to soil hydrology or the long term moisture status of soils, can change the structure and composition of ecological vegetation classes and can be a factor associated with canopy tree dieback. The changes are often gradual and irreversible, as well as being hard to detect or undetectable in the short term.

### Site Environmental Management Plan (SEMP)

Environmental impacts on water quality, water quantity and water flow paths must be identified and provided for during the planning and design phase of any works within the road reserve. The Plan should provide actions to minimise overall environmental impacts. These should be prescribed and detailed in a Site Environmental Management Plan (SEMP) for any proposed road works. Furthermore, there needs to be close supervision to ensure compliance with the SEM. A study of 68 road construction sites revealed almost 70% of sites had poor or very unsatisfactory performance in terms of implementing erosion and sedimentation controls.

#### 5.5.2.4 Environmental Recommendations - Storm Water, Soils and Sediments

The following recommendations should be considered and adopted to mitigate any adverse impacts associated with construction:

1. Develop and implement a Construction Environmental Management Plan (CEMP), including monitoring for compliance with management measures prior to any road works or vegetation removal commencing. This should be a requirement of and be endorsed as part of, any planning permit.
2. Effective sediment barriers/devices should be installed, monitored and maintained throughout the entire construction period to ensure that sediment does not leave the construction zone.
3. Ongoing control and treatment of drainage from the road should be implemented to prevent litter, sediment, weed seeds and chemical pollutants from reaching Jumping Creek and the Yarra River.
4. Capture and treat runoff water before discharging to natural waterways both during construction and for the ongoing operation of the road.
5. Avoid the concentration of runoff flows onto adjoining land. Where necessary, place rocks, sandbags, spreader swales/banks or other protective surface to dissipate energy or disperse flow and encourage growth of vegetation at the point of water outflow from culverts and drains.
6. Protect soil surfaces by retaining as much vegetation as possible and by using matting, mulch and/or planted indigenous vegetation on exposed areas.
7. Remove and stockpile topsoil in appropriate areas away from native vegetation, for re-instatement post construction works.
8. All contractors and staff to receive appropriate environmental training prior to commencing work, using the Manningham Roadside Environmental Management Strategy Handbook as a guide.

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<sup>6</sup> *Road Runoff & Drainage: Environmental Impacts and Management Options*, Austroads Inc, 2000.

## 5.6 Aboriginal Cultural Heritage Issues

Under the *Aboriginal Heritage Act 2006*, a Cultural Heritage Management Plan (CHMP) is required if all or parts of the proposed activity is in an area of cultural heritage significance, and all, or part of the activity is high impact.

Areas located within 200 metres of any existing waterways are considered of potential cultural heritage significance, and require a CHMP prior to works commencing. However, as the bridge across Jumping Creek has already been constructed with widened road approaches, no further works are required within the vicinity of the bridge and Jumping Creek. Any future works within 200 metres of the waterway, will need to consider Aboriginal Cultural controls and a CHMP may be required for the road upgrade.

Previous advice has indicated that the level of management required will be subject to the degree of ground disturbance resulting from any proposed activities within the identified areas.

During detailed planning and design of the affected sections of the road, Council shall ensure all requirements of the Act are complied with and depending on the location and the magnitude of any ground disturbance Cultural Heritage Management Plans may or may not be required, and will be determined at a later stage.

## 5.7 Utility Services Consideration

Services of power, water and telecommunications are already installed along Jumping Creek Road. Yarra Valley Water has installed some new sewer services in the area and is continuing with the extension of the sewer mains.

All the new gravity sewers will be constructed in private property apart from one short section to be built in Jumping Creek Road between Dudley Road

and Hartley Road. The contract advises the works may be undertaken either trenchless (bore) or trenched (open cut) at the discretion of the contractor.

Yarra Valley Water is also investigating the viability of reticulating recycled water through the same area. If the proposal is accepted by the community and Yarra Valley Water, the mains will most likely be constructed in Jumping Creek Road. However if works do proceed, the construction method will be trenchless.

Any proposed concept road realignment works will impact on the current location of some existing power poles. Any necessary planning permit application will need to include any potential impacts of moving overhead powerlines within proximity to trees.

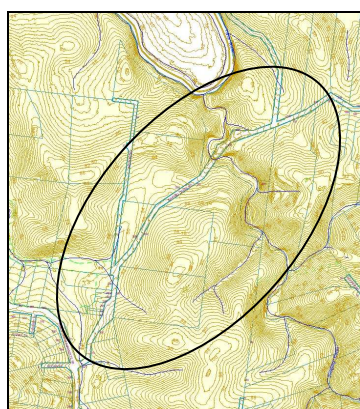
## 5.8 Drainage

### 5.8.1 Sub-catchments Characteristics

#### General Description

The local topography incorporates many high and low points that result in the varied horizontal and vertical geometry of Jumping Creek Road through an undulating and winding environment. A total number of 13 road low points with the current road formation exist along Jumping Creek Road.

#### Major Sub-catchments



The major sub-catchment along Jumping Creek Road is located along the western side of Jumping Creek. The flow direction at this location is across Jumping Creek Road. Discharge from these flows is into natural flow paths and waterways in this area (including Jumping Creek).

**Figure: Major sub-catchment located west of Jumping Creek.**

Minor Sub-catchments

Minor sub-catchments are located in the Wonga Park (township) area. The flow direction at this location is from Jumping Creek Road towards the Yarra River. Discharge from these flows is collected by underground drainage systems, natural flow paths and waterways.

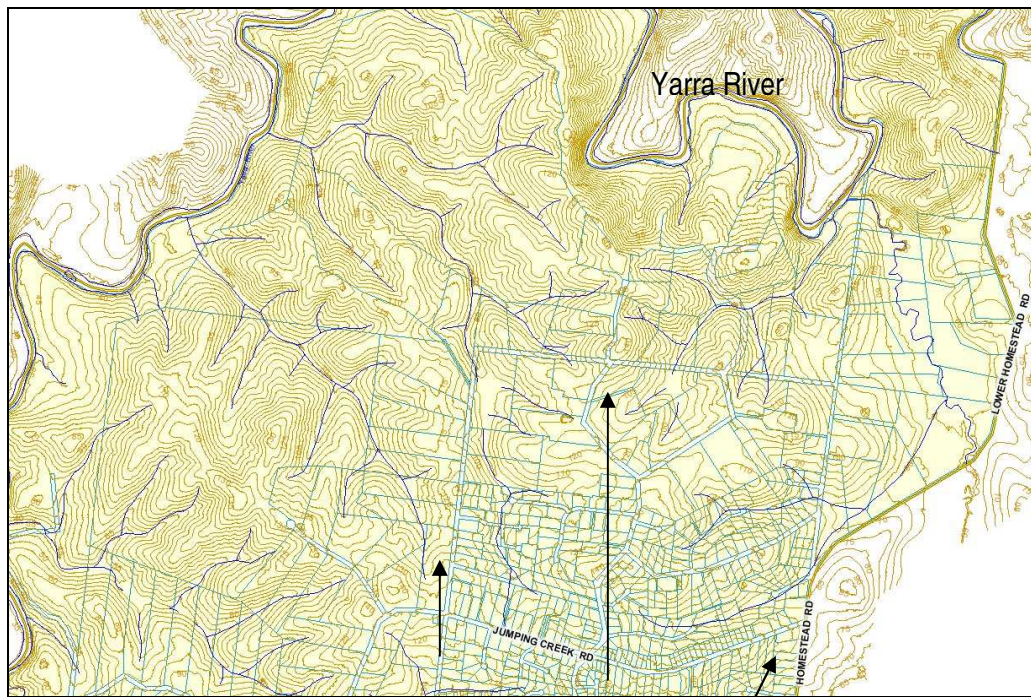


Figure: Minor sub-catchment in Wonga Park with arrows illustrating direction of flow paths

**5.8.2 Rainfall and Runoff**

Australian Rainfall and Runoff is published by Engineers Australia and provides the peak guidance for flood estimation and the analysis and design of stormwater conveyance systems.

The most recent revision of this document provides significant guidance on the use of computer aided tools that can allow stormwater conveyance and management to be more closely integrated with a broader road design approach and should allow catchment models to estimate runoff characteristics based on topography and designed surfaces.



Similar catchment approaches are used to design stormwater systems to minimise environmental impacts. While road safety criteria will be an overarching consideration in the design of the road, managing and treating stormwater to improve its quality of runoff and seeking opportunities to reduce the frequency of runoff (usually through active or passive re-use) should be incorporated into the design process.

The following sections provide some overarching principles as to how design guidance could be applied.

Design Storms

Drainage design for Jumping Creek Road should be in line with the 2015-2016 revised Australian Rainfall and Runoff. Rainfall intensities can be obtained from the Bureau of Meteorology by supplying latitude and longitude details.

Duration	EY	Annual Exceedance Probability (AEP)					
	1EY	50%	20%	10%	5%	2%	1%
1 min	1.6	1.8	2.4	2.8	3.3	3.9	4.4
2 min	2.7	2.9	3.8	4.5	5.1	6.0	6.7
3 min	3.6	4.0	5.2	6.1	7.0	8.2	9.3
4 min	4.4	4.9	6.4	7.6	8.7	10.4	11.7
5 min	5.1	5.6	7.5	8.9	10.3	12.3	13.9
10 min	7.6	8.5	11.4	13.6	15.9	19.2	21.9
15 min	9.3	10.3	14.0	16.6	19.5	23.5	26.9
30 min	12.4	13.8	18.4	21.9	25.5	30.6	34.8
1 hour	15.9	17.6	23.2	27.2	31.4	37.3	42.1
2 hour	20.2	22.2	28.8	33.6	38.4	45.2	50.7
3 hour	23.2	25.4	32.9	38.2	43.7	51.3	57.5
6 hour	29.5	32.4	42.1	49.0	56.2	66.3	74.4
12 hour	37.6	41.6	54.9	64.6	74.9	89.4	101.1
24 hour	47.2	52.7	71.5	85.5	100.2	121.3	138.7
48 hour	57.6	64.9	89.8	108.8	128.5	157.0	181.2
72 hour	63.7	71.8	99.6	120.7	142.7	174.7	202.2

Storm depths obtained from Bureau of Meteorology (lat -37.734372, long 145.265843)

### Selection of design storms

Based on the local drainage characteristic consideration should be given to selecting an ensemble of design storms (hyetographs) to adequately size critical infrastructure for a worst case scenario.

Peak storm flows within a drainage network occur when upstream flows coincide at a point lower in the system. Depending on the catchment shape, area, slope and runoff characteristics times of concentration for different storm elements will vary.

Storms are variable in their nature; some storms are broadly uniform in rainfall intensity throughout, while others may have intense bursts at different times. Analysis has identified that the selection of different storm patterns can lead to peak stormwater flows being incorrectly predicted by as much as 50% (in both directions).

The design process should be robust enough to appropriately match runoff and catchment combinations, and should support efficient design outcomes.

### Selection of design parameters

When integrated well with the design process design parameters (e.g. runoff co-efficient, concentration times) can be more precisely informed rather than relying on arbitrary assumptions.

While room for engineering judgement can remain, cost effective design will be supported by robust design assumptions and models. Examples of where the selection of design parameters could be considered include:

- Developing a road/ catchment digital terrain model (DTM) to more precisely predict flows; and

- Using a range of design packages that allow information to be passed between Geographical Information System (e.g. ArcGIS), Drafting and design (AutoCAD) and drainage analysis (XP SWMM, TUFLOW) software.

### Selection of design methodology

In line with Engineer's Australia recommendations the use of more sophisticated design approaches should be encouraged to allow cost effective designs supported by analysis rather than based on assumption.

The ability to achieve this will be in part dictated by other engineering design aspects, but consideration should be given to developing a series of localised design models along the alignment that can be analysed for performance in the key areas of conveyance and environmental performance.

### Environmental outcomes

Although covered in more detail in other parts of this document it can often be the case that environmental and drainage outcomes are developed by different design teams working largely in isolation and the recommended catchment approach will lower the risk of this occurring. To support improved environmental outcomes a number of design principles can be adopted:

- Where possible, runoff should be retained and managed close to its source;
- Where possible, a catchment design approach should be favoured over codified design;
- Road edge treatments should support passive irrigation of roadside vegetation, particularly for storm events that do not pose a road safety issue;
- Where stormwater is considered for end use (e.g. collected in dams) appropriate levels of pre-treatment should be incorporated upstream.

### **5.8.3 Existing Drainage Systems**

#### Roadside Table Drains

Roadside table drains are the major source of drainage collection from stormwater runoff for Jumping Creek Road between Ringwood-Warrandyte Road and Homestead Road. A previous Road Safety Audit recognised the potential hazard of unsealed roadside table drains, and recent remedial works have included the partial filling and asphalt surfacing of several sections of table drain to address these issues.

#### Underground Drainage Systems

Underground drainage systems are sparsely located along Jumping Creek Road and are confined to sections adjacent to major intersections. Most underground drainage systems exist to transfer stormwater beneath intersecting roads and most underground drains discharge back into the open drain network along Jumping Creek Road.

#### Drainage Outfalls

The existing drainage outfalls along Jumping Creek Road are a combination of overland flow paths, easement/private land systems, underground drainage systems, natural water ways and natural dams/ponds. Jumping Creek is identified as a Melbourne Water watercourse.

### **5.8.4 Existing Water Quality**

#### Sedimentation

The quality of runoff stormwater is affected by the sedimentation associated with the scouring along bare clay table drains. Recent asphaltting works to several table drains will minimise scouring with an improvement in water quality, however the sealed drains will result in an increased amount of stormwater runoff and increased flow velocity that may further advance scouring along unsealed table drains.

Effluent

Septic tanks are widely used in private properties along Jumping Creek Road. As a result, the quality of water in this area currently flowing into Jumping Creek Road drains may not be of a suitable standard due to the effluent discharging into the local waterways.

Yarra Valley Water, as part of the Backlog Sewer Program, is progressively installing reticulated sewerage along Jumping Creek Road. As this project proceeds and residents begin to connect to the system, the impact of septic tanks on water quality will diminish with water quality improving greatly.

**5.8.5 Flooding**

Land Subject to Inundated Overlay (LSIO)

One section of Jumping Creek Road is subject to flooding (as illustrated and identified in the LSIO) and is located surrounding the Jumping Creek Road Bridge. The Figure below illustrates the extent of the LSIO at this location. As Jumping Creek Road has already been upgraded through this area, works will generally not occur to the area within the LSIO, aside from the formal creation of the shared path across the bridge (where no structural works are required).

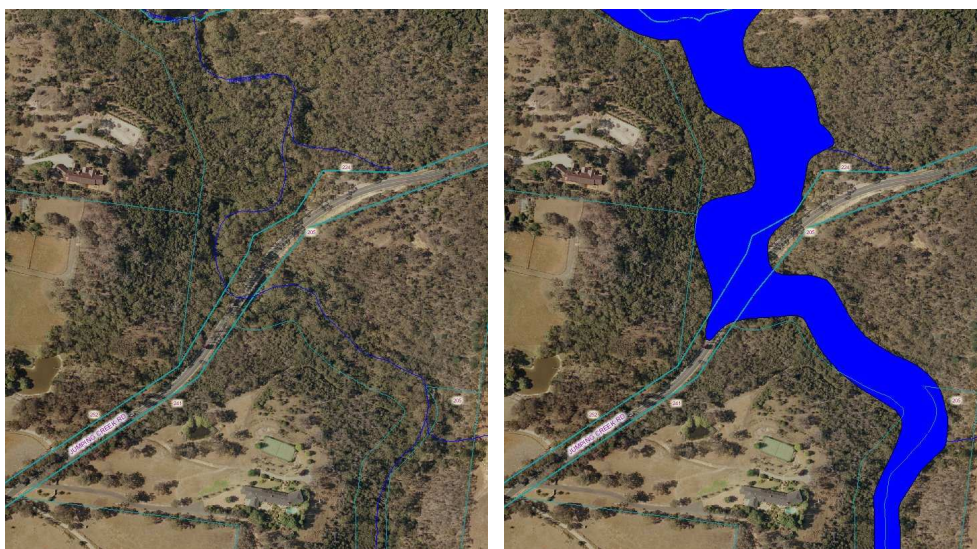


Figure: LSIO at Jumping Creek Bridge.

### Local Road Low Points

Thirteen low points have been identified along Jumping Creek Road and flash flooding may occur at these locations as a result of heavy rainfall events. Future drainage infrastructure works may be necessary to reduce the likelihood of flash flooding occurring at low points.

### Stormwater Runoff to Private Properties

Stormwater runoff from Jumping Creek Road may discharge onto abutting private properties due to the existing road formation. Through future drainage infrastructure improvements, easement acquisition and resident/Council agreements, stormwater runoff from Jumping Creek Road will be managed with minimal impact on surrounding properties.

## **5.8.6 Future Drainage Infrastructure**

### Catchment Urbanisation

The catchments which Jumping Creek Road passes through are shown in the following figure. Whilst future increased urbanisation of these catchments is restricted to a large extent by Urban Growth Boundary zoning and controls, any further subdivision and development in the catchments may lead to increased storm water run-off.

The *Manningham Stormwater Targets Report* (April 2009) outlines an approach to setting and achieving targets for stormwater pollution reduction for Manningham. The report reiterates that urbanisation creates impervious surface areas which generate greater amounts of stormwater runoff than would otherwise occur. It further notes that this increased stormwater runoff from urbanisation and development can degrade aquatic ecosystems due to excessive flows (from pre-developed catchment conditions) conveying pollutants to the receiving waterways.

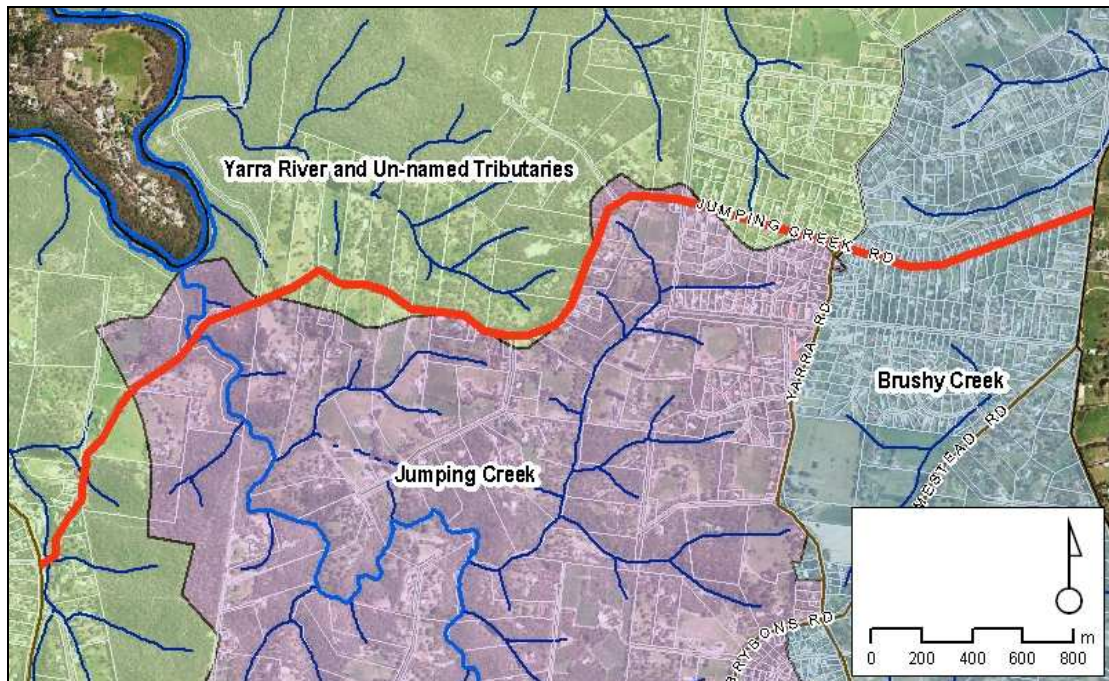


Figure: Catchments through which Jumping Creek Road passes

Creation of Drainage Easement

Drainage easements may need to be created at some locations within private property along Jumping Creek Road to accommodate drainage systems from Jumping Creek Road to the surrounding waterways. Where it is anticipated that easement creation is not necessary for future drainage systems, yet minor overland stormwater flow is predicted, arrangements may be sought with affected property owners to allow for this as surface runoff.

Drainage Infrastructure and Environmental Considerations

All environmental concerns must be taken into account with any future drainage infrastructure improvements along Jumping Creek Road. In particular, drainage design must be sensitive to the existing native trees, grass and bushland that surround a large proportion of Jumping Creek Road, including the need to limit sediments reaching water courses by minimising the runoff into natural gully lines. Environmental considerations will affect choice of drainage infrastructure improvements and may result in either higher costs for the project or a more limited scope of works.

Other Future Drainage Improvement Opportunities

The following table identifies the road low points along Jumping Creek Road, and the existing conditions and possible future improvements necessary at each location. At the time of detailed design, options to slow down water flows, improve water quality through the use of swales and retention systems and working with neighbouring properties where water flows can benefit both parties, will be examined in greater detail.

**Table: Jumping Creek Road Drainage Outfalls**

Road low point	Existing conditions	Possible Future Drainage Improvements	Possible Future Drainage Requirements
Intersection of Ringwood-Warrandyte Road and Jumping Creek Road	Double culverts (100 year ARI)	Nil	Nil Outfall into Natural Water Way
286 Jumping Creek Road	Overland flow path through private land and discharged into private dam	Road culvert and WSUD swale into dam	Easement acquisition or alternative legal arrangement such as Section 173 Agreement
Jumping Creek Bridge	Bridge (Land Subject to Inundated Overlay) Bridge may be closed during major storm events	Nil	Nil Outfall into Jumping Creek
197/218 Jumping Creek Road	Overland flow path through private land and discharged into natural water way	Road culvert and WSUD swale into natural water way	Easement acquisition or alternative legal arrangement such as Section 173 Agreement
176/184 Jumping Creek Road	Overland flow path through private land and discharged into natural water way	Road culvert and WSUD swale into natural water way	Easement acquisition or alternative legal arrangement such as Section 173 Agreement
156/145 Jumping Creek Road	Overland flow path through private land and discharged into natural water way	Suitable road formation (Existing footpath grade separated lower than roadway)	Easement acquisition or alternative legal arrangement such as Section 173 Agreement



Road low point	Existing conditions	Possible Future Drainage Improvements	Possible Future Drainage Requirements
150 Jumping Creek Road	Overland flow path through private land and discharged into natural water way	Road culvert and WSUD swale into natural water way	Easement acquisition or alternative legal arrangement such as Section 173 Agreement
134/117 Jumping Creek Road	Existing underground drains & outfall along Road reserve of Stane Brae Court	Improve Inlet, Pipe & Overland Flow Path capacity for flash flood events	Nil Outfall along road reserve
118 Jumping Creek Road	Overland flow path through private land and discharged into natural water way	Road culvert and WSUD swale into natural water way	Easement acquisition or alternative legal arrangement such as Section 173 Agreement
100 Jumping Creek Road	Overland flow path through private land and discharged into natural water way	Road culvert and WSUD swale into natural water way	Easement acquisition or alternative legal arrangement such as Section 173 Agreement
72 Jumping Creek Road	Existing underground drains & outfall along road reserve of Dudley Road	Improve Pit inlet, Pipe & Overland Flow Path capacity for flash flood events	Nil Outfall along road reserve
54-56 Jumping Creek Road	Existing Drain and Road pit	Improve Pit inlet, Pipe & Overland Flow Path capacity for flash flood events	Nil Existing drainage easements alongside fence of No. 54
22-24 Jumping Creek Road	Improve Pit inlet, Pipe & Overland Flow Path capacity for flash flood events	Improve Pit inlet, Pipe & Overland Flow Path capacity for flash flood events	Nil Existing drainage easements alongside fence of No. 22

In addition to treatments at road low points, other future drainage infrastructure works may be undertaken to address drainage and water quality issues surrounding Jumping Creek Road, which include:

1. Future drainage road system and outlets to waterways:
  - a. This is aimed to achieve flooding protection and water quality treatments to an acceptable level (including acceptable levels of

Total Suspended Solids, Phosphorous, Nitrogen and to reduce effluent leaking into waterways).

2. Opportunity to implement Water Sensitive Urban Design (WSUD):
  - a. This includes implementation of overland flow paths (i.e. swales), buffers and end of catchment rain gardens.
3. The impact on native vegetation along with other environmental and heritage impacts as a result of future drainage improvements.

### **5.8.7 Drainage Comments**

The proposed drainage infrastructure improvements (for example, WSUD swales and road culverts) and any subsequent construction works will help alleviate the flooding experienced at low points along Jumping Creek Road as well as minimising the impact of stormwater runoff from the road onto surrounding properties.

The existing roadside table drains and underground drainage systems are adequate for the present drainage system. If and when urbanisation and subdivision of abutting properties that drain towards the road takes place, the detailed design of the drainage system for Jumping Creek Road will require a search of Council records to be undertaken to identify existing drainage hot spots. In addition, the drainage system will need to be designed, taking account of realistic development projections for the area and any planning requirements that may be imposed on any development requiring the management of additional stormwater runoff within the property so that the peak flow does not increase, including the use of on-site-detention.

### **5.9 Catering for all Road Users**

Motorists, cyclists, pedestrians and all other users of Jumping Creek Road, will have an expectation of a safer and more convenient experience with less conflict amongst different users if improvement works are undertaken to Jumping Creek Road.

It is proposed to make provision for cyclists off road along Jumping Creek Road. Although an off-road shared path will be provided long the majority of the length of Jumping Creek Road, the road rules permit cyclists to use the existing roadway. Cyclists have the same right as motorists to use the road pursuant to the *Victorian Road Safety Road Rules 2009*.

All pavement widening and off road path construction must be undertaken with minimum damage to the native vegetation and fauna habitat.

The risk to fauna becoming 'road-kill' as they cross the road can be reduced or eliminated by the provision of fauna tunnels and fauna overhead cable crossings. Advance warning signage for motorists should be considered at any known wildlife crossing points.

### **5.10 Future Infrastructure Major Projects**

In line with the principles established in the *Manningham Integrated Transport Strategy 2010* that identify actions to improve the quality and accessibility of public transport, walking and cycling facilities and services, and to encourage their use by Manningham residents and workers, a holistic approach has been taken to establish the priorities for road improvements having regard to economic, strategic, environmental, social, safety and other principles.

Manningham's *Link Road Improvement Strategy (2014)* identifies that the upgrade of Jumping Creek Road will be undertaken as a part of the *Jumping Creek Road Development Framework* (this document) as a staged construction over several years, and has been included in Councils' 10 year indicative Capital Works Program commencing in 2017/2018.

### **5.11 Setting of Road Design Standards**

All new works must comply with the following design standards:

- Austroad standards for road width, horizontal and vertical alignments, design speeds and runoff protection;
- Road Safety Audits;
- Flora impact mitigation works as a result of native vegetation removal;
- Green Wedge Infrastructure Guide;
- Manningham Drainage design standards;
- VicRoads/Manningham Access & Egress to and from the road controls;
- Any Planning Permits applicable and associated permit conditions;
- Legislative requirements; and
- Geotechnical / Pavement report.

## 5.12 Contributory Works by Abutting Owners

Council’s *Special Rates & Charges Contributory Projects Policy* for Link (Council Arterial) Roads (amended August 2012) states the criteria and manner of apportionment for Link Roads is:

Project Description	Criteria/Manner of Apportionment										
Link (Council Arterial) Roads  This applies for full or partial construction	Owners contribute the full cost of street trees landscaping, any contribution required under the footpath construction provisions and vehicle crossings (except where previously constructed permanent works require reconstruction) and associated professional/administrative fees.  Council pays the balance of the project cost.  Owner’s share of costs are apportioned on the basis of frontage or area or benefit units or a combination of these.										
Footpath Construction (New Works)	Shared paths identified in Council’s Bicycle Strategy are constructed at full cost to Council.  Footpaths identified as being part of the Principal Pedestrian Network (PPN) are constructed at full cost to Council.  Non-PPN route footpaths are constructed on a shared cost basis with Council, dependent on road classification, with property owner contributions applying as follows: <table border="0" data-bbox="726 1780 1412 2004"> <tr> <td>Arterial Roads and Highways</td> <td>25%</td> </tr> <tr> <td>Link Roads</td> <td>25%</td> </tr> <tr> <td>Collector Roads</td> <td>50%</td> </tr> <tr> <td>Through Access Roads</td> <td>66%</td> </tr> <tr> <td>No Through Access Roads</td> <td>85%</td> </tr> </table>	Arterial Roads and Highways	25%	Link Roads	25%	Collector Roads	50%	Through Access Roads	66%	No Through Access Roads	85%
Arterial Roads and Highways	25%										
Link Roads	25%										
Collector Roads	50%										
Through Access Roads	66%										
No Through Access Roads	85%										

The proposed new shared path in Jumping Creek Road is identified as being part of the *Principal Pedestrian Network (PPN)* and *Bicycle Strategy 2013*.

Given the local rural environment, there is no proposal to require the construction and sealing of currently unsealed vehicle crossings. Landscaping along Jumping Creek Road will generally be a Council responsibility, to replace vegetation lost as a result of the works. Unless the property owners request the construction of a footpath along the southern side of Jumping Creek Road or other works requiring property owner contributions, there will be no requirement for the implementation of a special charge scheme to facilitate the project works.

### **5.13 Proposed Land Acquisition**

It has been identified that an upgrade to the road would extend beyond the existing Council controlled/owned road reserve boundaries, and at several locations, extend into a number of private properties.

As such these improvements will necessitate the partial acquisition of portions of land from adjoining private properties, and consequently impact private fencing, front gates and driveways. In many of these locations, vegetation, including mature trees, would also need to be removed to enable the road to be realigned and widened for works to take place.

The *Local Government Act 1989* provides councils with the ability to acquire and appropriately compensate a property owner for the portion of land it intends to acquire. The Act states that '*a Council may acquire any land which is, or may be required by the Council for, or in connection with, or as incidental to, the performance of its functions or the exercise of its powers*' (LGA 1989, section 187).

The *Land Acquisition and Compensation Act 1986* sets out the processes for acquisition by the authority acquiring the land (Council), and the rights of the affected land owner and/ or occupier.

*Planning Scheme 'Public Acquisition Overlay'*

If land is proposed to be acquired, it can be 'reserved' under the Manningham Planning Scheme through the application of a Public Acquisition Overlay (PAO) by way of an amendment to the Planning Scheme. A PAO assists by reserving areas of the corridor for the future upgrade of the road, and enables property owners to make informed decisions about any future development of their land.

A PAO is however not required in cases where less than 10% of the area of the subject property (or less than 10% of the value of the land) is proposed to be acquired. A Planning Scheme Amendment to implement a PAO is not warranted or recommended in this case.

## 6 Solution Options

In arriving at a recommended solution for providing a safer Jumping Creek Road, a number of different proposals were given serious consideration as potential solutions to resolve the issues identified in the Framework. The following provides an outline of each of the different proposals and comment on the suitability of each option as a course of action.

### 6.1 Reclassification of the Road

The road design guidelines “Traffic Management – an Introduction” by R T Underwood 1990 states that *‘In order to apply traffic management techniques to the road system in a logical and effective way (and indeed for all aspects of the planning, design and administration of roads), it is necessary to develop a classification or hierarchy of roads to ensure that the primary purpose of each road is defined, agreed and understood’.*

The criteria which define the classification of roads have been developed over many years and are accepted state-wide through inclusion in the Victorian Planning Provisions (and Manningham’s Planning Scheme). Roads are generally classified according to their functionality (connectivity and location), road users and traffic volumes.

The Manningham Planning Scheme defines Jumping Creek Road as a “Connector Street – Level 2 - Arterial Road” This classification is defined as *‘a street that carries higher volumes of traffic (greater than 7,000 vehicles per day) and connects places and access streets through and between neighbourhoods’.*

Jumping Creek Road currently carries an average of 8,100 vehicles per day (2013) with a projected traffic growth rate of 3 to 4 per cent per annum.

Classification determines the road design standards and carriageway, parking and road side clear zone widths as required by VicRoads and the relevant Road Authority.

Owing to the existing and projected traffic volumes, the sparse road network provided in this semi-rural area and a lack of a viable alternative to fill the function that Jumping Creek Road serves, it is deemed not feasible to downgrade the function and classification of this road.

## 6.2 Restricting Travel Speeds

### Speed Limits

In 2000, VicRoads approved a Council application to reduce the speed limit on Jumping Creek Road from 70 kph to 60 kph. The 60 kph speed limit applies along the entire length of Jumping Creek Road from Homestead Road to Ringwood-Warrandyte Road.

Although the recorded vehicle speeds along Jumping Creek Road are above the regulatory speed limit of 60 kph, they are not considered excessive given the function and classification of the road. VicRoads approval must be obtained for any changes to speed limits.

In response to community feedback, an application was made to VicRoads (in May 2016, and approved by VicRoads in June 2016) to consider the application of a 40 kph speed limit during school drop-off and pick-up periods in the vicinity of Dudley/Yarra/Jumping Creek Roads intersection through the Wonga Park township. Advice has been received that this application has been successful and communications will be arranged notifying the community of this change prior to implementation.



### Traffic Calming Devices

When making assessment of a road for the installation of traffic calming devices, its suitability, the likely effectiveness of the traffic calming device and the impact of the proposed traffic device will have on the traffic and neighbourhood must first be ascertained.

As Jumping Creek Road is a Council Link (Arterial) Road, carrying 8,100 vehicles per day the majority of traffic calming devices such as speed humps and chicanes would not be appropriate treatments.

However the installation of roundabouts are considered reasonable traffic calming devices where roads usually accommodate high volumes of traffic. As part of the assessment as to whether provision of roundabouts is an appropriate treatment for Jumping Creek Road, consideration needs to be given to impacts on vegetation and the environment, services, private property, access and other factors.

## **6.3 Restricting Type of Vehicular Traffic and Load Limits**

The restriction/ban of certain classes of vehicles by weight, height and length requires the agreement of VicRoads.

In May 2016, a proposal was pursued with VicRoads to consider implementing a truck curfew for Jumping Creek Road. However, this proposal was rejected by VicRoads on the grounds that:

- the existing truck volume (of between 5-10% of total traffic volume) is considered reasonable for Jumping Creek Road and does not exceed acceptable standards; and
- truck curfews are generally not supported where a route deviation of more than four kilometres to restricted vehicles (trucks) would result. Given the sparse availability of alternative routes in the area, a truck curfew is not supported.

Furthermore, truck curfews (or bans) would only apply to through-traffic. Trucks using Jumping Creek Road to access a local destination (i.e. property, intersecting street etc) can still use Jumping Creek Road in cases where a 'truck ban' or curfew is applied.

The implementation of a load limit for Jumping Creek Road was investigated in 2000 and was not supported as the volume of trucks using Jumping Creek Road was considered relatively low.

The volume of daily traffic using Jumping Creek Road is 8,100 (2013). Of this, 94.5% of vehicles using Jumping Creek Road are considered as class 1 or 2 (i.e. Sedans, Wagons, SUV's, Motorcycles, etc). The remaining 5.5% (445 vehicles) are considered as class 3 or above (i.e. trucks). Although truck-traffic has slightly increased since 2000, the proportion of trucks using Jumping Creek Road is still considered relatively low for an arterial link road, and well within the average 5-10% found on most arterial / link roads.

Given that Jumping Creek Road is a Council Link (Arterial) Road and the volume of trucks is still within the acceptable range for arterial roads, the introduction of load limit or truck curfew or ban is not recommended or supported.

#### **6.4 Road Closure – Restriction to Local Traffic Only**

A full road closure is achieved by installing a physical barrier preventing through motor vehicle traffic from a street. A full road closure can be located either at mid-block or at an intersection.

Closing the road to through-traffic will force vehicles to find an alternative route. The closest alternative route from Warrandyte to Chirnside Park is Croydon Road/Brysons Road/ Homestead Road to Brushy Park Road. A trip along the alternative route results in a significant increase in travel times and

fuel consumption, and exceeds the maximum route deviation distance deemed acceptable to support any preferred road closure, or restriction.

In the case of Jumping Creek Road, a road closure to through-traffic is not seen as an appropriate solution as there is no reasonable alternative route for the traffic affected by the closure. This restriction would also apply to emergency vehicles access.

Given the importance of Jumping Creek Road as part of the overall road network, particularly during fire emergency scenarios, the need for a safe and quick resident escape and emergency service access during bushfire periods, any closure of Jumping Creek Road or restriction to traffic access is not supported.

### **6.5 Leave in Current Form (Do Nothing Approach)**

Road users have identified the need to do ‘something’ about the current state of the road as it is not considered suitable for the current usage standards in that the road:

- carries high volumes of traffic;
- has an unfavourable crash history over the last five years including one fatality;
- presents various safety issues, particularly the close proximity of the road to fixed objects – mainly trees – limiting the ability to recover from an off road incident or to safely pull off the side of the road;
- has poor vertical and horizontal alignments, even with the reduced speed restrictions applied;
- does not cater for or encourage increased cyclist and pedestrian activity in a safe and segregated environment; and/or
- has narrow lane widths and a general lack of, or minimal width road shoulders.

Given the current deteriorating state of the road and existing safety issues, a 'Do Nothing' approach is not supported or advised.

## 6.6 'Do Nothing' and Rely on Northern Route Development

The 'Northern Route', is a proposed 11 kilometre road between Reynolds Road in Donvale to Maroondah Highway in Chirnside Park. VicRoads is the Responsible Authority for the proposed road. This proposed road is identified in the current Melways street directory (page numbers 35, 36 and 37).

To leave Jumping Creek Road in its current condition without any further works and wait until the 'Northern Route' is developed with the view that it would relieve some of the traffic load, does not address the current issues and may not even be a reasonable long term solution in that:

- The Northern Route has not been given any priority by either Manningham's Arterial Road Improvement Strategy or VicRoads. Neither VicRoads or any political party has given the proposal any priority at this stage;
- There is no specific road reservation or alignment identified and no planning scheme amendment to preserve a corridor or identify private land acquisition to accommodate this road;
- There is no assurance that the 'Northern Route', if established, would relieve traffic from Jumping Creek Road; and
- Jumping Creek Road will still require upgrading even if the Northern Route is established in the next 10 to 15 years as the state of the road is already considered inadequate for the volume of traffic currently using the road, yet alone the 3 to 4 per cent annual projected growth in traffic volumes expected over the next 20 years

Therefore, given the lack of any certainty, timeframe and political will, it is considered unreasonable to rely on the proposed Northern Route as an alternative at this point in time.

## 6.7 Road Improvements

As mentioned earlier in the Development Framework, the existing vertical alignment of Jumping Creek Road is generally considered substandard with the design speeds of numerous existing crests and valleys being below 50 kph.

The road geometry is influenced by the existing undulating terrain of the area and the need to provide property access along the length of the road within this environment. Steep cross-fall across the road reserve in some locations results in difficult property access. Any changes in vertical road geometry may require significant works to maintain access to abutting properties, both within the road reserve and adjoining private properties.

The horizontal geometry is characterised by frequent bends in the road with large trees and power poles located close to the road edge which often restricts sight distance for motorists driving along Jumping Creek Road and residents entering and exiting their driveways.

In exploring options to improve Jumping Creek Road, plans to undertake road reconstruction will need to ensure that a balance can be achieved between improving safety, access and road function whilst maintaining environmental character of the area and the aesthetics of the road corridor.

### 6.7.1 Road Widening

The current road width of Jumping Creek Road varies between 5.8 and 7.6 metres and is currently considered narrow in many locations.

It is considered appropriate that a common standard cross-section be adopted for a road of this classification (Arterial Link Road) and function of road that will deliver the required road safety measures, and address the environmental concerns. In order to achieve this for Jumping Creek Road, it requires the following to be provided:

- A road pavement of 7 metres in width accommodating two x 3.5 metre wide lanes for traffic (from kerb to kerb).
- The installation of semi-mountable kerb and channel installed along the pavement edge to improve delineation and facilitate collection of stormwater runoff. This will also support the pavement edge, minimise the extent of road widening required and allow removal of the existing roadside open drains.
- Provision of underground drainage to replace the existing deep open drains.

### **6.7.2 Pedestrian/Shared Path**

In order to provide a path that is safe, it is proposed to provide a new shared path along the entire length of the Jumping Creek Road corridor. This should provide for physical separation between motorists/traffic and pedestrians, cyclists and other path users.

Given the current lack of such facilities along the existing corridor, it is envisaged that the provision of a shared path along the corridor will contribute to impacts and loss of vegetation particularly within the Road Reserve. However consideration should be provided in planning and designing the alignment in a manner that will be sympathetic to the existing and established vegetation.

Further consideration will need to be provided to accommodate prospective horse/equestrian movements along this corridor.

### 6.7.3 Roadside Clear Zones

Clear zones are areas adjacent to traffic lanes (roadside) which should be kept free from features potentially considered dangerous to errant vehicles, such as trees, poles, steep batters and open drains.

The clear zone that applies to Jumping Creek Road providing the number of vehicles per day and speed is four metres. In the case of Jumping Creek Road it is not acceptable to clear a four metre wide strip either side of the road due to the environmental sensitivity of the area and extensive road side vegetation present in the area.

To improve the safety of the road and minimise the effect to adjacent vegetation, it is therefore proposed:

- That guardrail is installed directly behind the back of kerb, where clearance to adjacent trees is a minimum of 500mm.
- Where a 1.3m metre clearance or greater can be achieved to the road side hazard and road curvature allows, a wire rope safety barrier could be used to lessen the visual impact, where such treatments meet the requirements of current standards.

In many cases, the provision of guardrail, although at times visually intrusive, can reduce the need to clear extensive areas of vegetation along the road side to achieve acceptable clear zone objectives. Therefore, provision of guardrail at certain locations along Jumping Creek Road, can enable the preservation of roadside vegetation, particularly where the vegetation is considered significant, and should be retained.

### 6.7.4 Road Realignment

While the majority of the horizontal alignment along Jumping Creek Road is poor, a major safety concern is the location known as 'Freyers Bend' (located at 191 Jumping Creek Road). At this bend, the corner turns through an angle

of 80° and only has a radius of 60 metres. This stretch of road is of particular concern as it has been a site of regular accidents.

The only suitable treatment option available that is capable of delivering the necessary safety improvements required is to provide a full realignment of the road at Freyers Bend. Although this involves partial land acquisition from up to three private properties with significant construction cost (due to significant earthworks), and extensive impact to vegetation, the high level of risk associated with this existing bend warrants a review of the current arrangement, and it is therefore highly recommended that a realignment be undertaken at this location.

#### **6.7.5 Partial Land Acquisition (of Private Properties)**

The current constraints of the Jumping Creek Road reserve do not allow the necessary improvements to be undertaken along the road corridor. Therefore if road improvement works are to proceed, partial land acquisition from private properties will be required in certain locations to allow the improvements to the horizontal road alignment and shared pathway to be provided.

In some locations, minor land acquisition along the front boundaries of private properties may be required to accommodate the new shared path, where the path alignment is proposed to avoid existing areas of vegetation within the road reserve.

Based on the preliminary concept design, the following table identifies the extent of land required from private properties:



**Table: Proposed Partial Land Acquisition**

Property No.	Street	Total Land Area m2	Approximate Area to be Acquired m2	Acquisition as % of Total Area
107	Jumping Creek Rd	912	6	0.66%
117-123	Jumping Creek Rd	18,070	2.5	0.01%
150-154	Jumping Creek Rd	40,670	118	0.29%
156-170	Jumping Creek Rd	40,655	223	0.55%
167-171	Jumping Creek Rd	12,171	8.5	0.07%
176-182	Jumping Creek Rd	95,363	13	0.01%
184-186	Jumping Creek Rd	49,500	16.5	0.03%
189	Jumping Creek Rd	8,657	242	2.80%
191	Jumping Creek Rd	69,970	3,336	4.77%
197-203	Jumping Creek Rd	99,402	175	0.18%
198	Jumping Creek Rd	50,871	9	0.02%
241-261	Jumping Creek Rd	79,650	330	0.41%
263-285	Jumping Creek Rd	80,790	101	0.13%
268-284	Jumping Creek Rd	21,070	133	0.63%
287-301	Jumping Creek Rd	81,042	76	0.09%
292	Jumping Creek Rd	1,248	35	2.80%
294	Jumping Creek Rd	1,211	15	1.24%
300	Jumping Creek Rd	2,219	6.5	0.29%
373	Ringwood-Warrandyte Rd	21,731	13	0.06%

(Note: Any proposed areas of land, to be partially acquired from private properties, is approximate only and may change once further detailed design is undertaken.)

The proposed partial acquisition of land represents only a very small percentage (less than 5%) of each property, with 15 of the 19 properties encompassing less than 1% of their total property area, and with less than 20 square meters to be acquired from half of the 19 properties. It is considered that the impact to the remaining four (4) properties will involve partial land acquisition ranging from 1.24% to 4.77% of each of the property areas.

It is noted that in most cases, land will only need to be partially acquired along property boundaries fronting Jumping Creek Road (to allow for road widening and provision of the shared path), and at some locations, to allow for the realignment of the road. It is not intended to acquire entire properties, nor any land that contains any existing dwellings or significant private infrastructure (mostly vegetation and front fences).

The final land acquisition amounts will not be known until property boundary surveys and detailed design has been prepared and confirmed for each development stage of the project.

Negotiations will be undertaken with property owners to make arrangements for the relocation of private infrastructure (i.e. front fences, front gates, mail boxes, landscaping etc) impacted by the proposed land acquisition.

As of June 2016, all nineteen affected property owners were notified of the intention to partially acquire their land, and Council officers personally met with fifteen of the nineteen (current) property owners.

#### **6.7.6 Emergency Stopping Points/Bays**

A number of emergency stopping bays will be provided along the length of Jumping Creek Road to enable vehicles to safely pull-off to the side of the road in the event of a breakdown, emergency or to allow other vehicles to pass. These bays will be located in appropriate locations where there is minimum impact or disturbance to existing vegetation to provide for safe entry and exit of vehicles from the emergency bay.

A map illustrating the location of proposed works to the Jumping Creek Road corridor is provided as **Attachment 17 – Map of Jumping Creek Road Upgrade**, with preliminary concept plans provided in **Attachment 18 – Preliminary Concept Plans**.

## 7 Project Budget and Funding

Council's 10 Year Capital Works Program (2015/16 to 2024/25) has set aside \$17.905 million between 2017/18 (Year 3) to 2022/23 (Year 8) for the reconstruction of Jumping Creek Road from Ringwood-Warrandyte Road to Homestead Road.

This does not include costs associated with necessary land acquisition, vegetation offsets as directed by planning permit conditions or ongoing community consultation. These items will however be funded through other available budget streams.

Given the extent of the upgrade to Jumping Creek Road and the corridor, the project is proposed to be delivered in six (6) stages, to minimise disruption and accommodate annual capital budget allocations. In addition, this approach is proposed with the aim of minimising construction during the fire danger period each year.

## 8 Project Implementation and Programme

Due to the level and extent of works to be undertaken, budget constraints and the inability to close Jumping Creek Road or restrict travel on the road entirely for extended periods of time, it is proposed to deliver the works across six prioritised stages.

Each stage will need to allow for concept planning and detailed design to be prepared, to obtain all necessary planning and environment approvals, and to commence and complete construction.

It is anticipated that the construction of each stage of the works will take an average of approximately 8 months to complete, allowing for delays due to inclement weather, and/or any other unforeseen issues. The works will occur over a six year period, with the first stage to commence in the 2017/18 financial year.

It has been determined that due to the higher crash rates and deteriorating state of the road and roadside throughout the western section of Jumping Creek Road, it is prudent to prioritise the upgrade of Jumping Creek Road from Ringwood-Warrandyte Road in the first instance.

### Stage 1

Stage one of the upgrade will commence from the western section of Jumping Creek Road between Ringwood –Warrandyte Road through to Jumping Creek (waterway). Early preliminary works, such as the alteration to some utility services and applications to obtain planning and environmental approvals, will commence from early 2017. Construction will be undertaken throughout 2018.

### Stage 2

Detailed design of Stage 2 (between Jumping Creek through to 167/176 Jumping Creek Road) will be undertaken throughout 2016/17, with necessary planning and environmental approvals to be obtained during 2017/18.

Construction of Stage 2 is anticipated to be undertaken throughout 2018

### Stage 3

In response to community feedback received in 2016, Stage 3 of the works will be undertaken within the Wonga Park township and will include the Yarra/Dudley/Jumping Creek Road intersection.

Detailed design and receipt of any necessary planning and environmental approvals of Stage 3 will be undertaken throughout 2017/2018. Construction of Stage 3 is anticipated to be undertaken throughout 2019.

*\*It should be noted that the above timeframes are indicative, and may be subject to change due to unforeseen delays as a result of inclement weather (and bushfire threat), receipt of necessary planning and/or environmental approvals, budgetary constraints, objections from any affected parties, or other unforeseen matters beyond Council's control\*.*

### Stage 4 to 6

It has not yet been determined which remaining sections of Jumping Creek Road will be upgraded to form stages 4 to 6. This decision will be made in consultation with the community, the proposed Community Reference Group and any other relevant stakeholders at a later date.

It should be noted that all works will be programmed to minimise disrupting access and to maintain emergency access, particularly during the fire season.

## 9 Impacts of Construction

Traffic delays are an unfortunate consequence of road works. Although it is intended that the road will remain open throughout the majority of the construction periods, it is anticipated that one lane may be closed in the areas of construction, with traffic control undertaken to manage the through traffic, which is likely to cause traffic delays throughout the project. Speed limit reductions will also apply to the worksite.

Surrounding residents may experience a level of construction noise. Every effort will be made to minimise the noise during construction and works will generally be undertaken during normal working hours. Should out-of-hours works be required, advance notification will be provided.

As stated in the *Flora and Fauna Assessment* by Ecology Partners, indirect effects on adjacent areas are also possible if construction activities and drainage are not appropriately managed, and may include:

- Potential for further spread of weeds and soil pathogens from on-site activities and subsequent degradation of remaining native vegetation; and/or
- Indirect impacts to adjoining native vegetation/habitat, and potential offsite effects such as sedimentation and pollution to ephemeral drainage lines; and/or
- Disturbance to wildlife from increased human activity, and increase noise during construction; and/or
- Increased mortality to fauna during construction and road works through road-kill (i.e. increase traffic).

A sediment and drainage management plan should be developed before construction begins to prevent the movement of sediment or pollutants from

the construction zone that would damage adjacent vegetation and promote the spread of weeds.

The installation of fauna crossings (including overhead canopy cables) along Jumping Creek Road should be further investigated during the detailed design phase to mitigate against the risk of future fauna mortality. This should be undertaken in collaboration with qualified Zoologists / ecologists, to determine suitable locations and design specifications.

## 10 Communication

Responding to community requests for improvements, a strategic document for the future development of Jumping Creek Road was initially prepared in 2011 with extensive community consultation undertaken at that time. The strategic document (Framework) has subsequently been updated with current data and strategic context information and the results of further community consultation undertaken in 2016.

The following outlines the community consultation undertaken to inform the preparation and adoption of the Framework.

### 10.1 Initial Community Consultation (2011)

Preparation of the Draft Framework in 2011 involved a comprehensive community-wide communication and consultation process. This was facilitated through a number of community workshops, media releases to the local press, meetings with residents, reference and community groups, and with relevant stakeholders.

From 25 July to 16 September 2011, the Draft Framework was placed on public exhibition, providing an opportunity for the community to comment on the proposal. During this time, a total of 10 email and written submissions were received, of which three (3) objected to elements of the proposal.

Most of the concerns raised in the submissions were addressed in the revised Draft Development Framework. However, some suggestions and comments regarding the general design of the road, including access to several driveways would be further examined during the detailed design process, which will take place for each of the six various stages.



A common suggestion to reduce the speed limit of Jumping Creek Road to 50 kph was not supported by VicRoads in order to maintain the purpose of the road as a Council arterial link road. Furthermore, in 2000, the speed limit was reduced from 70 kph to 60 kph, which is deemed appropriate for Jumping Creek Road in the existing semi-rural environment in which the road is located.

Other suggestions received included a request for the provision of a roundabout at the Dudley Road and Jumping Creek Road intersection within the Wonga Park township. Issues were identified with this option including the need to relocate a bus stop and the high cost of relocating existing services.

However due to other competing Council capital works priorities, the Draft *Jumping Creek Road Development Framework* was not finalised at that time. As such, the Framework remained in draft format until 2016.

### **10.2 Subsequent Community Consultation (2016)**

In 2015, the proposed upgrade of Jumping Creek Road was prioritised by Council and funding to deliver the entire project was identified in Council's indicative 10-year capital works program.

However, given that five (5) years had passed since the initial draft Development Framework was prepared and since previous community consultation took place, further consultation with the community on the project was undertaken. This was primarily focussed to inform the community that the project will be progressively delivered throughout the following six years, and that a Development Framework was required in order to guide and facilitate the project outcomes.

As the draft Development Framework had already been prepared, with extensive and thorough input from the community achieved through the initial consultation process in 2011, the opportunity for the community to significantly influence the final document was limited, as the key project objectives justifying the upgrade of Jumping Creek Road have already been tested with the community.

Notwithstanding the above, the purpose and objective of subsequent community consultation was primarily focussed on:

- refreshing the project objective, scope and strategic context;
- revisiting the land acquisition requirements;
- engaging with affected land owners; and
- obtaining community input into elements of the road design and sustainable transport elements.

This also included opportunity for the community to contribute to specific project elements such as refinement of the road design, impact to flora and fauna, identification of safety issues, timing and staging of works and on-going consultation expectations.

Between 29 April and 14 June 2016, the Draft Framework was again placed on public exhibition for a period of six weeks. This also included provision of notices in the local paper(s) and two community information sessions which were held on 24 May 2016 at the Wonga Park Community Hall.

Direct consultation was also undertaken between council officers and all 19 property owners whose land is affected by partial land acquisition.

Comments were sought from all interested parties, with submissions assessed by council officers, and responses incorporated and reflected in this final Development Framework.

### **10.2.1 Detailed Engagement and Communication Plan**

A detailed Engagement and Communications Plan was prepared to guide the public exhibition and engagement for the development of the Framework.

The Plan actively promotes a best practice approach to community engagement adhering to the International Association for Public Participation (IAP2) standards and abiding by their core values. Council has adopted a set of Community Engagement Principles based on the core values that underpin Manningham's engagement process. These principles aim to ensure that:

- Those who are affected by a decision have a right to be involved in the decision making process.
- The public's contribution will be considered in making the decision.
- The needs and interests of all participants should be recognised.
- The process seeks out and involves all those potentially affected.
- Participants have an opportunity to have a say in how they are consulted.
- Participants are well informed to enable meaningful participation.
- Participants are informed about how their input affected the decision.

During both community engagement processes in 2011 and 2016, every reasonable effort was pursued and undertaken by Council officers to adhere to and achieve the principles outlined above.

### **10.3 Ongoing Community Consultation**

In response to community expectations regarding ongoing consultation, information will continue to be more broadly disseminated to the community through a range of different communication tools, including factsheets, articles in the local paper or the Manningham Matters magazine, via media releases

and on Council's website. In addition, council officers will also be available to respond to phone or counter enquiries as required.

Furthermore, in order to best facilitate project-related community engagement, it is intended that a 'community reference group' be established. The purpose of this group will be to facilitate community input and contribution to the final design and delivery of the project and provide a communication bridge between Council and the local community, during each of the six stages of the road upgrade works.

Membership on this group is intended to include a mix of residents, local community members, representatives from local community groups, Council officers and a local ward Councillor. It is intended that this group will be established by early 2017, with community membership sought via an Expression of Interest (EOI) process.

## 11 Recommendations

Jumping Creek Road is an important link road in this region of Melbourne. Any adopted solution needs to meet relevant road functionality and safety objectives and ensure a balance is achieved between the competing objectives of upgrading the road, whilst preserving insofar as practical, the natural environment (flora and fauna) and semi-rural character of the corridor.

After considering the existing conditions, strategic context, identified issues and a range of potential solutions, the identification of a recommended course of action has emerged – to upgrade Jumping Creek Road and provide for suitable access for all road users through the corridor.

This is to be achieved by increasing the width of the road and improving the road's vertical and horizontal alignment to address existing safety issues. Construction of the road including kerb and channel, underground drainage and guardrail and/or appropriate barriers limits the road formation width, thereby minimising negative impacts on trees and other native vegetation. A separate shared path will compliment the road works, and provide for a safe dedicated pedestrian and cycling facility.

The matters identified in this Framework have informed the development of best value solutions for providing safety improvements to Jumping Creek Road that will satisfy the functional demands of the road, including provision for all road users, taking account of expected traffic growth and providing adequate emergency access in the region.

Ongoing design and planning will also need to involve community engagement to facilitate input into the project development.

The recommendations of external agencies, consultants, relevant authorities and others, including any Road Safety Audits and numerous flora and fauna reports, will need to be further considered and will inform the approvals processes as part of the planning and design for the road upgrade.

A number of issues have been documented through the public consultation phase which needs to be referred for consideration through the project planning, detailed design and construction phases, as set out in Section 11.1 of the Framework below.

### 11.1 Key Matters to be considered in Planning and Design

Based on feedback received from the community, the following key matters require consideration as part of the ongoing planning and design of Jumping Creek Road:

- **Shared Path:** The alignment and surface treatment to be resolved with community consultation and to suit the target users. The shared path solution needs to be in keeping with the character of the Green Wedge.
- **Homestead Road intersection:** Concerns were raised regarding congestion at the intersection with Jumping Creek Road and requests for the installation of a roundabout require further investigation. Support would be required from the Shire of Yarra Ranges prior to any intersection improvements.
- **Dudley/Yarra/Jumping Creek Roads intersection:** Considerable concerns and feedback from the community regarding the proposed concept design for this intersection stating the need for redesign to incorporate both intersecting roads, potentially including the installation of a larger single roundabout, that can improve access, safety for school children and cater for heavy traffic including buses. In addition, numerous requests were received to reduce the speed limit through this area, particularly during school peak periods.

- **Vegetation:** Review and suitably consider the impacts of the works and methods to preserve vegetation where possible. Transparency is required in relation to the impacts of proposed vegetation removal. The use of safety barrier to minimise tree losses is generally supported. There is a need to update vegetation studies to inform the design and planning approvals processes.
- **Fauna:** Appropriate and suitable locations to be determined for wildlife (fauna) crossings. Provisions need to be made for displaced fauna. Wildlife warning signage needs to be improved.
- **Ecosystems:** Ensure the road design at in the vicinity of Stane Brae Court and 117-123 Jumping Creek Road considers the existing wetland ecosystem and fauna corridor in this area.
- **Staging of works:** Support for acceleration of the delivery of works through the Wonga Park township.
- **Equestrian:** Provision for equestrian/horses along the corridor needs to be resolved, in keeping with Council's *Horse Riding Strategy*.
- **Street lighting:** Concerns were expressed regarding the potential impacts of street lighting on abutting properties and on wildlife. Consideration needs to be given to a balanced approach which addresses safety, environmental and amenity considerations.
- **Fire hydrants:** Consideration needs to be given to the provision of fire hydrants along the length of Jumping Creek Road.
- **Communication and future consultation:** Strong support was expressed for the provision of regular updates on project progress through Council's website, newsletters or potentially an on-line forum.
- **Roundabouts:** Comments were received both opposing and supporting the installation of roundabouts. Concerns were raised regarding potential impacts for abutting properties. Consideration needs to be given to incorporating pedestrian crossing facilities. In addition, consideration needs to be given to aesthetics for the completed works.

- **Safe pedestrian crossing facilities:** Consideration for the provision of pedestrian refuge islands along the corridor, and in particular across Jumping Creek Road immediately west of Hooper Street and Hartley Road and across Dudley Road.
- **Vehicle Crossovers:** Provide private property owners with the option of having their vehicle crossings constructed by the contractor while on site, at property owner cost.
- **Proliferation of street signage:** Undertake an audit of the number of existing and proposed street signs, as part of detail design – to rationalise the extent of signage provided.



## 12 Attachments

## **ATTACHMENT 1 – Design Speeds: Existing Conditions**

## ATTACHMENT 2 – Jumping Creek Road Traffic Counts

## **ATTACHMENT 3 – Jumping Creek Road Traffic Counts: Morning Peak**

## **ATTACHMENT 4 – Jumping Creek Road Traffic Counts: Evening Peak**

## **ATTACHMENT 5 – Austroads Vehicle Classification System**

## **ATTACHMENT 6 – Traffic Classifications at Each Count Site**

## **ATTACHMENT 7 – Jumping Creek Road Crash Locations**



## **ATTACHMENT 8 – VicRoads Definitions for Classifying Accidents**

**ATTACHMENT 9 – Planning Overlay Maps: ESO1,  
ESO2, ESO3, ESO4**

## **ATTACHMENT 10 – Planning Overlay Map: SL01**

## **ATTACHMENT 11 – Planning Overlay Map: LSIO, WMO**

**ATTACHMENT 12 – Jumping Creek Road: Roadside  
Vegetation Significance Map.**

**ATTACHMENT 13 – Supplementary Report**  
***‘Considerations under the Biodiversity Assessment Guidelines for Jumping Creek Road Upgrade, Warrandyte Victoria’, (Ecology and Heritage Partners Pty Ltd, March 2015)***

**ATTACHMENT 14 – ‘*Flora and Fauna Assessment:  
and Net Gain Analysis of Jumping Creek Road  
Reserve, Wonga Park, Victoria*’, (Ecology Partners  
P/L (Aboltins A., Hynes L. & Froid D), January 2008)**

**ATTACHMENT 15 – ‘*Net Gain Analysis of the concept design for the proposed Jumping Creek Road Upgrade, Warrandyte-Wonga Park*’, (Ecology Partners P/L, 2010)**



**ATTACHMENT 16 – ‘*Spring Survey of Jumping Creek Road Reserve, Warrandyte Victoria*’, (Ecology Partners P/L, April 2009)**

## **ATTACHMENT 17 – Jumping Creek Road Upgrade Map**

## **ATTACHMENT 18 – Preliminary Concept Design Plans**

## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
<b>JCR &amp; Homestead Road intersection</b>	<ul style="list-style-type: none"> <li>Overwhelming support for improvements to Jumping Creek Road and Homestead Road intersection, including installation of a roundabout, to improve traffic flow and access, reduce congestion and address safety issues.</li> </ul>	<ul style="list-style-type: none"> <li>A business case will need to be prepared for any change to this intersection, as it falls outside of the current project scope and budget.</li> <li>Officers to investigate resident concerns regarding the operation of the intersection and identify a preferred treatment option in consultation with the community. Officers to liaise with Yarra Ranges Shire Council (the responsible road authority for Homestead Road) officers to assess the level and timing of support for any necessary improvements.</li> <li>No changes to be made to the current concept plans (contained in the Framework) at this stage</li> <li>Add this item to the 'Considerations' Chapter of the Framework.</li> </ul>
<b>JCR &amp; Yarra/Dudley Roads intersection</b>	<ul style="list-style-type: none"> <li>Considerable concerns and feedback from the community regarding the proposed concept design for this intersection stating the need for redesign to incorporate both intersecting roads, potentially including the installation of a larger single roundabout, that can improve access, safety for school children and cater for heavy traffic including buses.</li> <li>Numerous requests to reduce the speed limit through this area, particularly during school peak periods.</li> <li>Concerns raised regarding safety in Dudley Road. The speed of traffic entering Dudley Road from Jumping Creek Road particularly for left turns into Dudley Road is a concern.</li> </ul>	<ul style="list-style-type: none"> <li>Review the operation and design of the intersections as part of 'Detailed Design' phase.</li> <li>Add this item to the 'Considerations' Chapter of the Framework.</li> <li>A request has previously been made to VicRoads to reduce the speed limit in this area during school pick up and drop off periods (May 2016). VicRoads have approved these improvements.</li> <li>Council to consider installing a pedestrian refuge island on Dudley Road (to replace existing traffic island), in the immediate future (in advance of Stage 3 upgrade to this section of Jumping Creek Road).</li> <li>Works to this section of Jumping Creek Road to be expedited to form as Stage 3 of the road upgrade (with works to commence in 2019/20).</li> </ul>

## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
	<p>Request to also install a pedestrian refuge island for pedestrians crossing Dudley Road near Jumping Creek Road.</p>	
<b>Cycling</b>	<ul style="list-style-type: none"> <li>• Concerns (skepticism) regarding cyclists using the road for recreational purposes, instead of the shared path.</li> <li>• Widening of the shoulder on JCR would help cyclists.</li> </ul>	<ul style="list-style-type: none"> <li>• Cyclists have the same right as a motor vehicle to use the road pursuant to the <i>'Victorian Road Safety Road Rules 2009'</i> which defines a 'bicycle' as a 'vehicle' to which all the same road rules apply (i.e. can only encourage cyclists to use the shared path).</li> <li>• Widening of the road shoulders is not supported as this approach will exacerbate vegetation losses and may increase land acquisition requirements.</li> </ul>
<b>Shared path</b>	<ul style="list-style-type: none"> <li>• Various views regarding the type of surface material to be used:               <ul style="list-style-type: none"> <li>○ Sealed surface can lead to cyclists speeding.</li> <li>○ It will not promote use by horse riders – therefore should be gravel.</li> <li>○ Will not respect the character of the Green Wedge.</li> <li>○ However, sealed surface needed for prams, to provide a safe even surface and attract cyclists and pedestrians off the road, and reduce ongoing maintenance requirements and costs.</li> </ul> </li> <li>• Need guarantee that shared path will be constructed (not just a promise with no commitment).</li> </ul>	<ul style="list-style-type: none"> <li>• The appropriate treatment will be determined, following consultation with the Community Reference Group and key stakeholders.</li> <li>• Council is committed to the provision of the shared path as part of this project (funding provided), as it supports many Council objectives (Principle Pedestrian Network, Bicycle Strategy etc).</li> <li>• Alignment of the shared path through the Wonga Park township will need to be finalized during detailed design, and in collaboration with the Community Reference Group.</li> <li>• The above considerations will be reflected in the Framework, where appropriate.</li> </ul>

## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
<b>Consideration for horses / equestrian facilities</b>	<ul style="list-style-type: none"> <li>• Some concern at the lack of consideration for horse riding along the corridor in the draft Framework.</li> <li>• Provision for horses was included in the original consultation with the community in 2011, yet no longer seems to be included.</li> <li>• Mixed community opinion regarding provision for equestrian uses along the shared path.</li> </ul>	<ul style="list-style-type: none"> <li>• There is a general lack of data on the level of equestrian use along this corridor (further assessment is required).</li> <li>• JCR is identified as a preferred equestrian route in Council's Horse Riding Strategy (2002). Consultation will be undertaken in collaboration with the Community Reference Group and stakeholder groups, to consider need and options.</li> <li>• Comment to this effect will be outlined in the Framework.</li> </ul>
<b>Construction impacts from other utility upgrades</b>	<ul style="list-style-type: none"> <li>• Completion of sewer in Wonga Park not finished. Will this result in ongoing construction and interruption?</li> <li>• Are we aware that the NBN will be rolled out in this area in 2017?</li> </ul>	<ul style="list-style-type: none"> <li>• Project engineers to liaise with Yarra Valley Water (YVW) and NBN to determine rollout dates and where feasible, coordinate delivery of service utility works.</li> </ul>
<b>Drainage matters</b>	<ul style="list-style-type: none"> <li>• Ensure that new kerb and channel will drain water away from properties to dedicated drainage outlets.</li> <li>• Can kerbs be designed to allow vehicles to mount them?</li> </ul>	<ul style="list-style-type: none"> <li>• Water will be drained to appropriate outlets in accordance with the requirements of the Water Act.</li> <li>• Kerb and Channel is proposed to be semi-mountable.</li> <li>• Comment to this effect will be outlined in the Framework.</li> </ul>
<b>Reconstruction of crossovers</b>	<ul style="list-style-type: none"> <li>• Clarity regarding what material will be used for new driveways.</li> <li>• Who will pay for new, reconstructed or semi-constructed crossovers and driveways?</li> </ul>	<ul style="list-style-type: none"> <li>• Provide further clarity in the Framework regarding responsibility (financial and construction) for crossovers: <ul style="list-style-type: none"> <li>○ If a sealed shared path is constructed, at the intersections with unsealed (crushed rock) vehicle crossings, the shared path will be widened at the crushed rock vehicle crossing to ensure that the shared path edges are not damaged as a result of vehicle traffic crossing the path. These works will</li> </ul> </li> </ul>

## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
		<p>be undertaken at Council cost.</p> <ul style="list-style-type: none"> <li>○ Accordingly, there will be no requirement to initiate a special charge scheme to facilitate the proposed Jumping Creek Road works.</li> <li>○ Consideration has been given to the location of Jumping Creek Road within a rural environment, when considering options for modifications to existing vehicle crossings. Where a vehicle crossing has already been constructed and sealed, should the crossover require adjustment to suit the proposed works, these works will be undertaken at Council cost. Where crossovers are not currently sealed (i.e. gravel) and require adjustment to match finished surface levels, they will be regraded with crushed rock to suit the proposed levels at Council cost. Property owners will also be given the option of having their vehicle crossings constructed by the contractor while on site, at property owner cost.</li> </ul> <ul style="list-style-type: none"> <li>● These matters will be further determined in collaboration with the Community Reference Group.</li> </ul>
<b>Economic &amp; Social Impacts</b>	<ul style="list-style-type: none"> <li>● Concerns about impact of road development on value and return for property (and others), and on ensuring amenity (noise/volume/safety) are addressed in the design phase. i.e. estimated risks to residents and landowners resulting from the works.</li> </ul>	<ul style="list-style-type: none"> <li>● The proposed road improvement works to Jumping Creek Road will reduce the risk to all road users, including pedestrians and cyclists, improve access from intersecting roads and minimise impacts on the landscape value of the road through using design solutions and construction techniques that will minimise vegetation loss compared with standard construction techniques. A new road surface will reduce traffic noise.</li> </ul>
<b>Communication &amp; future</b>	<ul style="list-style-type: none"> <li>● General requests to receive regular updates on project and opportunity for input during</li> </ul>	<ul style="list-style-type: none"> <li>● A Community Reference Group will be established, to enable</li> </ul>

## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
<b>consultation</b>	<p>detailed design.</p> <ul style="list-style-type: none"> <li>• Request that the Council publish on the council web site detailed responses to all submissions.</li> <li>• Can a dedicated online forum/website be created to update residents on progress?</li> <li>• Can a newsletter be distributed to all residents with regular updates?</li> </ul>	<p>community contribution and input into ongoing design.</p> <ul style="list-style-type: none"> <li>• Regular updates of project progress will be provided to residents of the area via the Your Say Manningham website, distribution of newsletters, factsheets etc.</li> <li>• This document has grouped community comments under common 'themes' and provides responses to the main issues raised.</li> <li>• In early June 2016, all submitters were provided an acknowledgement letter and factsheet.</li> <li>• Previous and all ongoing communication will be detailed in the Framework. An Engagement and Communications Plan has been developed to guide future community engagement in respect of this project.</li> </ul>
<b>Vegetation removal</b>	<ul style="list-style-type: none"> <li>• Concerned about the lack of transparency about the enormous scale of tree and native vegetation loss associated with this proposal.</li> <li>• Can Council mark trees, with ribbons or markers, or the areas proposed for loss so the community can better understand what's being proposed?</li> <li>• Safety Assessments and Net gain Analysis are outdated studies, and need to be updated.</li> <li>• Suggestions to replant within the road reserve, plant indigenous plants and grasses of the same species of the vegetation removed and consider early planting.</li> <li>• How will early planting be undertaken? How</li> </ul>	<ul style="list-style-type: none"> <li>• Review matters related to vegetation removal and provide clarity and comment in the Framework, to the effect of the following: <ul style="list-style-type: none"> <li>○ The Framework contains the 2008 and 2015 Ecological Reports which identify the scale of potential vegetation removal based on the concept plans for the road. Potential losses associated with the shared path are yet to be quantified.</li> <li>○ Detailed supplementary Assessments in line with the State Governments 'No Net Loss' Guidelines (introduced 2013) and reports will be undertaken as part of each stage of the project as detailed design proceeds.</li> <li>○ Offset planting requirements will be determined for each stage in accordance with the No Net Loss Guidelines and will be undertaken in accordance with the guideline principals of planting indigenous plants in the vicinity of the</li> </ul> </li> </ul>



## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
	<p>will maintenance requirements of replanting be managed?</p> <ul style="list-style-type: none"> <li>• Preference for use barriers/guardrail to reduce vegetation loss wherever possible and use of construction methods sympathetic to local flora and fauna.</li> <li>• Need to check for and care for (re-homing) wildlife when felling trees.</li> <li>• Applaud Council for making road safer including removal of dangerous curves, power poles &amp; trees and support for cutting down as many trees as needed for safety as this is a once off opportunity including overhanging and unsafe trees for safety especially during bush fires.</li> </ul>	<p>vegetation removal if possible but must be on land controlled by Council. Planting will take place at the earliest opportunity once detailed requirements are known.</p> <ul style="list-style-type: none"> <li>○ Methods of planting and maintenance will depend upon the type of species and locations of offset planting.</li> <li>○ Council is obliged to follow all necessary environmental and planning approvals, provisions and guidelines.</li> <li>○ Use of kerb and channel, barriers (guardrail) and retaining walls are design treatments proposed for this project to minimise the footprint of the works and retain the maximum amount of vegetation while still providing a safer road and shared path.</li> <li>○ Trees identified for removal will be marked to ensure only those trees are removed. The trees will be inspected by an appropriate consultant to assess fauna impacts and remedial measures as required.</li> <li>○ Local environmental and land care groups will have opportunity for involvement in flora and fauna management during implementation of this project.</li> <li>○ Construction contractor will be required to minimise damage to other vegetation while removing trees and will confine construction equipment to defined areas to protect remaining vegetation.</li> </ul>
<b>Fauna Issues</b>	<ul style="list-style-type: none"> <li>• No wildlife corridors crossings identified.</li> <li>• Build an underground passage near the bridge, since that is the crossing for wombats and wallabies and create aerial wildlife</li> </ul>	<ul style="list-style-type: none"> <li>• Consider comments in design and reflect responses in the Framework: <ul style="list-style-type: none"> <li>○ Individual wildlife crossing locations and type will be</li> </ul> </li> </ul>

## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
	<p>crossings (ropes) for arboreal species.</p> <ul style="list-style-type: none"> <li>• General concerns with displacement of habitat and animals when vegetation is removed – need for plan to relocate displaced fauna within the road reserve (and provision of nesting boxes for relocated animals)</li> <li>• Consider provision of an animal corridor between Hooper Road and JCR Reserve.</li> <li>• Provide more signage to warn motorists of kangaroos and fauna in the area.</li> <li>• Concerned about number of animals killed on road – Consider possible reductions in the speed limit for full length, or at least have a speed reduction at night to protect wildlife.</li> </ul>	<p>identified during detailed design for each stage.</p> <ul style="list-style-type: none"> <li>○ Relevant wildlife experts (Biologist/Zoologist) will be engaged during the design process to assist in determining appropriate treatments.</li> <li>○ Wildlife corridors will be considered during detailed design.</li> <li>○ Signage and road markings will be employed to warn motorists of wildlife, particularly kangaroos.</li> <li>○ Road speed limits are controlled by VicRoads.</li> </ul>
<p><b>General traffic and design matters</b></p>	<ul style="list-style-type: none"> <li>• Will there be any truck curfews (e.g. size of vehicle or night use)?</li> <li>• Concerns regarding traffic noise from trucks braking, particularly near intersections and on approaches to proposed roundabouts.</li> <li>• Provision of signage discourage use of trucks engine brakes.</li> <li>• Ensure that emergency stopping bays are appropriately spaced along the corridor and can serve as future bus stops.</li> <li>• Traffic counts in the current report are outdated. From 6.30 am onwards (Mon- Fri)</li> </ul>	<ul style="list-style-type: none"> <li>• Consider traffic concerns and reflect responses in the Framework: <ul style="list-style-type: none"> <li>○ Powers to restrict truck traffic access rests with VicRoads, not Council. Vic Roads has been approached and does not support truck curfews on Jumping Creek Road (confirmed, May 2016).</li> <li>○ Appropriate signage exists and shall be maintained to discourage trucks using engine breaks. Roundabouts have previously been installed on several other Council Link Roads including Park Road and Old Warrandyte Road. The treatments are effective in reducing the speed environment along roads. While truck braking can generate noise, significant safety benefits will arise as a result of reducing the speed environment along Jumping</li> </ul> </li> </ul>

## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
	<p>there is a constant stream of traffic especially trades vehicles looking for an alternative route.</p> <ul style="list-style-type: none"> <li>• Nothing in framework that considers the impact of proposed changes of traffic levels on traffic congestion morning and night, commute times and delayed emergency response times.</li> <li>• West of Yarra Road there are many indigenous trees and shrubs very close to the edge of the bitumen on the south side. Could the alignment of the road be moved slightly?</li> <li>• Too many signs along the road. Undertake an audit to rationalize the number of signs.</li> <li>• Consider installation of centre barriers and/or pedestrian refuges to discourage overtaking at key sections along the road.</li> </ul>	<p>Creek Road.</p> <ul style="list-style-type: none"> <li>○ Emergency stopping bays are proposed approximately 800m apart. Emergency bays are not suitable for use as bus bays as they would need to be larger to accommodate buses and car parking is prohibited in bus bays. Should a bus service be introduced along Jumping Creek Road, bus stops can be constructed at that time..</li> <li>○ Traffic counts include latest data available.</li> <li>○ The primary focus of the road upgrade is to make the road safer for all users while minimising impacts on the flora and fauna. The design will provide for growth in traffic volumes over the next twenty years. Improved traffic conditions will help traffic flow however traffic in peak periods may still experience some congestion.</li> <li>○ One of the key considerations in the detailed design of the road will be minimization of environmental impacts resulting from the proposed works. There are however constraints associated with a range of other factors including service authority assets. Opportunities to adjust the road alignment to reduce tree removal west of Yarra Road will be considered during the detailed design.</li> <li>○ An audit of signs can be considered during the detailed design.</li> <li>○ Pedestrian refuges are provided where pedestrian crossing activities justify the installation. Line marking will be undertaken to permit overtaking only where safe to do so.</li> </ul>

## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
<b>Overtaking Issues</b>	<ul style="list-style-type: none"> <li>• Should be at least one uphill overtaking lane in each direction so that slow moving trucks/tractors/bicycles/etc can be overtaken safely.</li> <li>• Provide a continuous centre line to discourage overtaking through the Wonga Park Township.</li> <li>• Support implementation of appropriate line marking so drivers desist from overtaking.</li> </ul>	<ul style="list-style-type: none"> <li>• Overtaking lane not achievable due to restrictive road reserve and lack of land. Will also require significantly more vegetation removal. Emergency bays will allow very slow vehicles to pull over for traffic to pass. The shared path will provide an off road facility for cyclists.</li> <li>• Centre of road line marking will be provided in accordance with Vic Roads standards and limit overtaking where it is unsafe to do so.</li> </ul>
<b>Speed &amp; Enforcement / Traffic Speeds</b>	<ul style="list-style-type: none"> <li>• Request for Police enforcement of speed limit and provision of speed cameras.</li> <li>• Support use of speed cameras and police involvement to enforce speed limit</li> <li>• Reduce speed to 50kph</li> <li>• A better aligned road will increase speed and not make it safer for anyone, including the increasing number of road-bike users.</li> <li>• Yarra Rd/Jumping Creek Rd/Dudley Rd- suggest decreasing the speed around that junction to 50 kph, and installing illuminated flashing speed signs.</li> <li>• Reduce speed limits at roundabouts to 40kph</li> </ul>	<ul style="list-style-type: none"> <li>• The current regulatory road speed limit is 60 kph having been reduced from 70 kph in 2000.</li> <li>• VicRoads approval must be secured for any changes to speed limits. Applications to alter speed limits need to take account of the current speed at which 85% of traffic is travelling, the level of abutting development and other factors. Given the nature of the development along Jumping Creek Road, it is highly unlikely that VicRoads would support speed reduction to 50pkh along the full length of the road.</li> <li>• Application has been made to VicRoads for a 40 kph speed limit over a length of Jumping Creek Road of approximately 200 metres centred on the school crossing within the Wonga Park township, to coincide with school drop off and pick up periods. Advice has been received that this application has been successful. (May 2016).</li> <li>• Speed camera's and enforcement of speed limits is not a council function, however resident concerns will be brought to the attention of the local police.</li> <li>• Roundabouts are designed to limit vehicle speeds to 40kph</li> </ul>

**Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)**

**Website, Information Sessions and Emails (based on a total of 61 submissions)**

Topic / Theme	Comments	Officer Response
		<p>(approx) by deflecting the trajectory of vehicles passing through the roundabout. As such, there is no need to install speed restrictions at roundabout locations.</p> <ul style="list-style-type: none"> <li>The design speeds associated with the existing crests and horizontal curves along Jumping Creek Road are not to a consistent standard and this results in a challenging road environment for motorists. One aim of the road design is to improve the consistency of speed environment along the road, to provide a safer road environment. Roundabouts are proposed at regular intervals to reduce the speed environment along the road. In addition, improvement of the sightlines along the road will improve safety for residents accessing and exiting abutting properties. Lighting will also be reviewed along the road length. Kerb and channel provided on both sides of the road will improve delineation and permit the removal of the hazardous roadside open drains. The provision of a shared path will permit cyclists to travel off road. The development of Jumping Creek Road will significantly improve safety for all road users..</li> </ul>
<p><b>Roundabout designs &amp; new roundabouts</b></p>	<ul style="list-style-type: none"> <li>Can roundabouts be designed to avoid vehicles driving straight over them?</li> <li>Can they include a flower bed or vegetation in the middle, to improve appearance?</li> <li>Will there be provision for pedestrian crossings at roundabout locations (i.e. Hooper Road).</li> <li>Intermediate roundabouts at the State Park, Hooper Road and Hartley Roads may not significantly slow traffic but inconvenience heavy traffic that has to slow to negotiate</li> </ul>	<ul style="list-style-type: none"> <li>Consider roundabout design concerns and reflect responses in the Framework. <ul style="list-style-type: none"> <li>Roundabouts can be designed to avoid vehicles driving over them in cases where there are wider road reserves and no constraints, but they must cater for all types of traffic including emergency vehicles, trucks and buses .</li> <li>The detailed design of roundabouts (size, type of construction and infill treatment) is controlled by accepted design standards, the area of land available to accommodate the roundabout, traffic types (cars, trucks, buses) flows and pedestrian movements. Larger central</li> </ul> </li> </ul>

## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
	<p>roundabouts and too tight for any large articulating vehicle or a large towed trailer or caravan to turning not drive over the top of the roundabout during turning manoeuvres .</p> <ul style="list-style-type: none"> <li>• There seems no valid reason for a roundabout at Hartley Road - low traffic volumes on Hartley Rd not warrant it.</li> <li>• Some general objections to the construction of roundabouts on Jumping Creek Rd as they always have a congesting effect on roads with high traffic volumes.</li> <li>• Concern from adjoining residents regarding the impact of roundabouts to their properties.</li> <li>• Suggest roundabout at Upton Court or double lines to discourage speeding and passing between Hartley &amp; Yarra Roads.</li> </ul>	<p>islands which can accommodate vegetation in the central island generally require a larger footprint, resulting in increased loss of existing vegetation at the roadside. It is unlikely that the construction of larger roundabout central islands will be feasible owing to the existing constraints along the road.</p> <ul style="list-style-type: none"> <li>○ The provision of a pedestrian crossing will be considered as part of the development of the Hooper Street roundabout.</li> <li>○ Roundabouts are designed to improve traffic flow at intersections, to slow vehicle speeds, accommodate pedestrian movements (if required) and generally allow more opportunities for traffic to turn into and from the roads intersecting with the main thoroughfare. Roundabouts are proposed at regular intervals primarily to assist with reducing the speed environment along Jumping Creek Road. Roundabouts were proposed at the intersections of Hartley Road and Yarra Road with Jumping Creek Road to this end. The intersection of Upton Court is only 200 metres from the Hartley Road intersection and an additional roundabout at this location may not be warranted.</li> <li>○ In some cases roundabouts due to the nature of their design may cause traffic to travel closer to the road boundary. Where this may impact on the amenity of persons living in the adjoining property, consideration will be given to reducing impacts through landscaping. Roundabouts also reduce speeds locally and ease property access for abutting residents.</li> <li>○ The use of line marking between Hartley &amp; Yarra Roads will</li> </ul>

## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
		<p>be considered when designing the road to limit the opportunities for vehicle overtaking to locations which are safe.</p>
<p><b>Timing &amp; staging of works</b></p>	<ul style="list-style-type: none"> <li>• Clarify staging and timing of works.</li> <li>• Can we consider starting works in Wonga Park Township earlier?</li> <li>• Will JCR works compete with works to duplicate Warrandyte Bridge? May exacerbate traffic disruptions and delays.</li> <li>• General concerns regarding the six year project delivery timeframe, and impact to residents, road users and the amenity of the area.</li> </ul>	<ul style="list-style-type: none"> <li>• Further clarity will be provided in the Framework regarding the staging and timing of works, and why the project is being delivered over six years.</li> <li>• The priority of the stage of roadworks through the Wonga Park township will be brought forward (to form as Stage 3 of the project). Planning and design in the Wonga Park township to be facilitated in associated with community consultation from late 2017.</li> <li>• Works on Jumping Creek Road face a number of constraints and will need to be staged to : <ul style="list-style-type: none"> <li>○ Avoid total closure at any one time;</li> <li>○ Cater for the bushfire sensitivity of the area and emergency access and egress during the fire danger period.</li> </ul> </li> <li>• Restricted hours of work could be considered to reduce potential congestion at peak times but this approach will increase the duration of the construction works. The works will be staged to limit construction during the fire danger period each year.</li> </ul>
<p><b>Street lighting</b></p>	<ul style="list-style-type: none"> <li>• Clarity on when and where future street lighting will be provided, and how this might impact adjoining land owners.</li> <li>• Proposed street lighting not supported as will increase light pollution, affect local wildlife and disrupt rural amenity of the area.</li> </ul>	<ul style="list-style-type: none"> <li>• Street lighting improvements along Jumping Creek Road will be designed to balance the competing demands associated with road safety, environmental and amenity considerations, in consultation with the Community Reference Group.</li> </ul>

## Jumping Creek Road Development Framework - Summary of Community Comments (May/June 2016)

### Website, Information Sessions and Emails (based on a total of 61 submissions)

Topic / Theme	Comments	Officer Response
<b>Water hydrants</b>	<ul style="list-style-type: none"><li>• Can we consider provision of water hydrants along the corridor?</li></ul>	<ul style="list-style-type: none"><li>• Officers to liaise with YVW and the CFA to determine existing hydrant locations and the need or otherwise for additional hydrants. Any requirements for additional hydrants can be referred for consideration through the detailed design process.</li></ul>



# Engagement and Communications Plan – Jumping Creek Road

## Part A - Engagement Plan

### Community Engagement Principles

Manningham City Council actively promotes a best practice approach to community engagement adhering by the International Association for Public Participation (IAP2) standards and abiding by their core values. Council has adopted a set of Community Engagement Principles based on the core values that underpin our engagement process.

These principles aim to ensure that:

- Those who are affected by a decision have a right to be involved in the decision making process.
- The public’s contribution will be considered in making the decision.
- The needs and interests of all participants should be recognised.
- The process seeks out and involves all those potentially affected.
- Participants have an opportunity to have a say in how they are consulted.
- Participants are well informed to enable meaningful participation.
- Participants are informed about how their input affected the decision.

### 1. Project Details

Project Title

Jumping Creek Road Upgrade (2016 to 2023)

Project Location

Jumping Creek Road, Warrandyte and Wonga Park

Lead Project Officer / Advocate

Chris Sfetkidis

Contact Phone Number

9846 0572

Email Address

Chris.Sfetkidis@manningham.vic.gov.au

Project Support Officer

Todd Brewster

Contact Phone Number

9846 0569

Project Start Date

1 August 2016

Project End Date *(or type ongoing with additional comments in the box below)*

30 June 2023

Comments:

This will be a fluid document to guide ongoing consultation throughout the delivery of the road upgrade, to be delivered in 6 stages between 2017 and 2023.

2. Is this a one off consultation or does your project need consultation at various stages of your project?  
(Please indicate the dates for commencement and completion in the table below).

	Phase Name (if applicable)	Start Date	Finish Date
Phase 1	Establish and facilitate a representative Community Reference Group (with rolling membership)	Mid/Late 2016	December 2023 (TBC)
Phase 2	Design & deliver stage 1 of the JCR upgrade	August 2016	October 2018
Phase 3	Land Acquisition commencing with Stage 1 and 2 properties.	November 2016	June 2018
Phase 4	Design & Delivery of Stages 2 to 6	June 2017	2023

## 1. Establish Engagement Purpose

3. What is the purpose of this engagement activity?

- a) To establish and engage with members of the Community Reference Group and collaborate with the Group throughout the design, consultation and delivery of the road upgrade, to identify and address community concerns and incorporate community preferences as part of the project development.
- b) To continue to engage with affected property owners and other key stakeholders throughout the design and delivery of the road upgrade.

4. Do you have budget for consultation?

✓ Yes

Amount / Comments on the project budget?

Existing staff resourcing (ETS/EEP/SP/CRM) will be used to facilitate the community consultation and communication process. At this stage, additional funding is not anticipated.

## 2. Identify Stakeholders

5. Externally, who are the key people / groups potentially affected by this project? Please check all that apply.

- Affected residents
- All Manningham residents
- Resident Association(s)

- Property owners
- Individual businesses / local traders
- Business Association(s) / Trader Group (W'dyde Traders/Business Association)
- Community groups / organisations
- Sporting clubs / associations
- Kindergartens / Childcare Centres / Playgroups
- Environmental groups
- Media
- Special interest groups
- Religious organisations / networks
- Service Clubs / Probus Groups
- Members of Parliament
- Relevant Committee / Industry Networks
- Regional Networks / Forums
- Neighbouring Councils
- Emergency Services (e.g. Police, CFA, Ambulance)
- Consultants
- Primary Schools (Wonga Park Primary)
- Secondary Schools
- Tertiary institutions / further education providers
- Neighbourhood Houses
- Government Agencies (Parks Vic & Melbourne Water)
- Other External Stakeholders (please detail):

KEY - Warrandyte Community Association  
 KEY - Wonga Park Environment Group  
 KEY - Friends of Warrandyte State Park  
 KEY - Middle Yarra Land Care Group  
 Manningham Bicycle Users Group (BUG)  
 Local Equestrian Group  
 Human Seeds (Director, Adriana Simmonds)

6. Internally, who are the key people/groups potentially affected by this project? Please tick all that apply.

- Councillors
- EMT
- Staff
- Working Groups/Advisory Committee
- Other External Stakeholders (please detail) Friends of Warrandyte State Park

**3. Identify Potential Risks/  
Sensitivities**

7. Potential Risks/Sensitivities. Please tick all that apply.

- Resident Opposition to project
- Media Risk
- Financial
- Occupation Health and Safety
- Legal
- Community Expectations
- Environmental
- Relocation of services/tenants

- Political Intervention
- Opposing Stakeholder Views
- No Risks Identified
- Other (please specify): Risk and Matters relating to private property acquisition and compensation.

8. For consultation involving participants from Culturally and Linguistically Diverse (CALD) backgrounds do you require the following:

- A Translator
- An Interpreter

Service Units may be required to fund the cost of interpreter/translator services. For more information, please contact Communications and marketing on Ext 414.

**Note:** Please ensure you attach your supporting documents to support this consultation. Supporting documents may include a Project Brief, Business Case, TEA Report, Policy/Strategy Review, Infosumm, Issue Briefing Note, EMT Action item, Map of location etc. Alternatively, please add the file path to your documents in the space below.

**4. Meet the Engagement Team on Engagement Activities**

**Engagement Activity Action Plan**

9. Notes – Project Information

Ongoing consultation is required throughout the 6-Year staged delivery of the JCR upgrade.

This will include consultation with affected land owners, community updates, facilitation and contribution from the Community Reference Group, liaison with interested parties and stakeholders, internal communications (to staff and Councillors), and other parties to be identified in future.

This will be a fluid process, as timeframes, impact and project implications may change through the staged delivery process. It is likely that the membership of the Community Reference Group will change over time as the focus of the group shifts from broader issues which impact the entire length of Jumping Creek Road to consultation targeting individual stages of the works.

- Hard copy survey (potential Special Rates and Charges Scheme)
- Telephone survey
- Online survey
- Your Say Manningham (Online Tool)
- Household Panel
- e - kiosk
- Intercept survey
- Advice on engagement techniques (e.g. World Cafe/Charrett)
- I.D. Demographic profiling
- External workshop
- Internal workshop

- Public Exhibition period
- Public forum
- Focus group facilitation
- Event activity
- Information session
- Factsheet
- Letter
- Other (please specify):

Community Reference Group

11. Engagement Activity Action Plan – Please complete the table below.

	Stakeholder Group	Level of Engagement	Engagement Method	Supporting Unit	Timeframe
1	All property owners/occupiers on Jumping Creek Road & nearby residents & all attendees to the Community Information Session	Inform	Letter and Factsheet  <i>To inform of endorsed Framework, and where to from here.</i>	SP	Late 2016 –  Post formal endorsement of the Framework by Council on 26 July 2016.
2	Prospective Community Reference Group (Advertise for members)	Consult  (nominations / EOI & Initiation)	Warrandyte Diary ad Council website & YSM site Warrandyte Community Centre Warrandyte Library Wonga Park Primary School newsletter Wonga Park Tennis Club	ETS	Late 2016
3	Community Reference Group Members	Collaboration	Ongoing meetings Correspondence	ETS	Ongoing basis 2016-2023
4	Passing Motorists / local community	Inform	Signage – Roadside Project Information Board (Council proponent)	ETS / CRM	Early 2017 (ongoing throughout construction)
5	Property owners along Stage 1 & 2 of JCR (Planning & Environmental Approvals – Planning Permit/s)	Inform	Advertising of Planning Permits (Third Party Appeal Rights) through normal statutory planning process.	Statutory Planning	Stage 1 – 2016/17  Stage 2 – 2017/18
6	Property owners in Stage 1 & 2 with land to be acquired	Inform & Consult	Individual meetings Letters Factsheets	ETS / Property Services	2016 to 2018
7	All property owners/occupiers of Jumping Creek Road affected by works	Inform & Consult	Correspondence Meetings Factsheets	ETS	Ongoing 2016 – 2023 on a stage by stage basis
8	Councillors / EMT	Inform	InfoSumm Presentation to SBS as required	ETS	As required, on an as needs basis Monthly InfoSumm item
9	Broader community	Inform	YSM website Factsheets & letters	ETS	Ongoing 2016 - 2023
10	Yarra Range Shire Council	Consult	One on one meeting Correspondence	ETS	During Wonga Park phase of works

## Part B – Communications Plan

### 5. Communications Plan

The Communications and Marketing Unit provides a range of services to foster communication between Council and the community. This form will assist you in the planning of all communication activities. For guidance in completing this, call Communications and Marketing on ext 116 or 402.

What is the purpose of this Communication Plan?

A communication plan is a roadmap for getting your message across to your audience/stakeholders. Spending time planning your approach will improve your ability to achieve your desired outcome. This can be done by setting clear goals and objectives.

12. Goals – What are the project communication goals or overall aim of the communication effort?

- a) To keep the community and any interested parties informed throughout the delivery of the project/upgrade.
- b) To communicate impacts and mitigate adverse issues/impact to the community.
- c) To ensure the community remains actively and positively involved in the staged works for the length of the project

13. Objectives – What are the project communication objectives?

*Objectives are the subset of goals and should be expressed in concrete, measurable terms and are used to specify exactly what needs to be achieved by the actions set out in the communication plan.*

Aim to communicate with the local community members and local media on a regular basis, through community updates.

More regularly through updates to Your Say Manningham, social media

14. Key messages – What do you want to communicate to your stakeholders

*What do you want to say? The content of any communication material prepared for this project should address the reason the audience will be interested in the project. Key messages are the most succinct statement of the message/s you want your stakeholder/s to receive, and help everyone focus on exactly what is being communicated, thereby reducing the possibility of mixed messages. They should be clear, benefit-oriented, and written in language that your audience can understand and relate to.*

Please list the key information you want each of your stakeholders to know?

- When and how works are to be undertaken.
- Key contacts and avenues for input into the project development
- Why Council is undertaking this project.
- Outline benefits of the upgrade.
- Communicate costs, timing and impacts.

15. Please comment on any issue or steps that need to be taken from a Risk Management perspective?

- Media briefing/updates on works and progress of stages
- Advanced warning of interruptions to road access or services to local community and road users
- Manage community expectations for each stage and for the entire project
- Explain and implement the Special rates and charges process in accordance with Council policies, if required
- Explain the reasons, benefits and process for land acquisition

16. Timing

- Throughout the project with special emphasis on relevant staged works.
- Refer to project program timeframes.

**6. Directorate Sign off/  
Amend**

**7. Organise Communications  
material**

17. Communications Checklist (Please select as required)

**Media**

- Media briefing
- Media release
- Media alert
- Photo opportunity
- Speech

**Advertising**

- Paid advertising (Project Tenders, crossover upgrade Scheme if required,)
- Council Column

**Newsletters**

- Manningham Matters
- Other Council newsletters (e.g. RecWrap, Social Butterflies)
- e-Newsletters (e.g. Manningham Business, Doncaster Hill)

**Publications/Design**

- Poster
- Brochure
- Fact Sheet
- DL Flyer
- Invitation
- Banners/Signage
- Other design material (Please specify) Project Information (Roadside) Boards

**Online**

- Council Website
- Doncaster Hill website

- Visit Manningham Tourism Website
- Manningham Business Website/Directory
- Manningham Community Directory
- Social Media (e.g. Twitter, Facebook) – To be operated and managed by the Project Steering Committee
- Touchscreen
- Other online material (Please specify)

**Internal**

- Brief Customer Service (on Special Rates and Charges Scheme for crossover upgrades ir required)
- InfoSumm
- SBS/EMT
- Intranet
- M-Focus (fortnightly)
- Staff briefings
- Other internal (Please specify)

**Other**

- Promotional items
- Direct mail (i.e. letters)
- Events/festivals
- Meetings/information session/s
- Other external (Please specify)

**Thank you for completing the Engagement and Communications Plan**

Please email the completed Engagement and Communications Plan, plus all supporting documentation to [ECAdmin@manningham.vic.gov.au](mailto:ECAdmin@manningham.vic.gov.au); [Sharon.prince@manningham.vic.gov.au](mailto:Sharon.prince@manningham.vic.gov.au); [Leanne.robb@manningham.vic.gov.au](mailto:Leanne.robb@manningham.vic.gov.au)

**Next Steps:**

1. The Engagement Team will contact you to discuss your Engagement Plan, and detail your engagement activities.
2. A copy of this information will also be sent to the Communications and Marketing Unit in preparation of a Communications Plan (if necessary).
3. A member of the Communications and Marketing Unit will contact you to discuss your requirements further in more detail.



# Jumping Creek Road Upgrade

## Communications Action Plan

Communication Tool	Key Actions	Timeline/deadline	Responsibility*
<ul style="list-style-type: none"> <li>Letter and Factsheet</li> <li>Online: Your Say Manningham (YSM) website</li> </ul>	<ul style="list-style-type: none"> <li>Inform all property owners/occupiers on Jumping Creek Road, nearby residents and all attendees to the Community Information Session that the Framework has been endorsed (and where to from here).</li> <li>Post the Framework on the Your Say Manningham site</li> </ul>	<ul style="list-style-type: none"> <li>Late 2016</li> </ul>	Strategic Projects
<ul style="list-style-type: none"> <li>Expression of Interest (EOI)</li> <li>Warranty Diary ad</li> <li>Letter / mail out</li> <li>YSM site /Council website</li> <li>Inform local community and sporting groups</li> </ul>	<ul style="list-style-type: none"> <li>Prepare Terms of Reference for the Community Reference Group</li> <li>Consult and seek nominations (advertise) for prospective community members for the JCR Community Reference Group</li> <li>Select suitable community members</li> <li>Establish Community Reference Group</li> </ul>	<ul style="list-style-type: none"> <li>Prepare: Late 2016</li> <li>Advertise: Late 2016 / Early 2017</li> <li>Establish Group: Early 2017</li> </ul>	ETS Lead (SP and CRM support)
<ul style="list-style-type: none"> <li>Community Reference Group</li> <li>Third Party Appeal rights (through Planning Permit advertising process)</li> <li>Letters</li> </ul>	<ul style="list-style-type: none"> <li>Inform and consult with residents of Stage 1 and 2 properties re:               <ul style="list-style-type: none"> <li>Detail design of the corridor</li> <li>Planning and Environmental approvals (planning permit/s)</li> <li>Early planting opportunities</li> <li>Issues identified through previous community consultation including investigations into potential works through the Wonga Park township</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Stage 1 Properties – 2016/17 (commencing November 2016)</li> <li>Stage 2 Properties – 2017/18</li> </ul>	ETS  Statutory Planning (Third party appeal)
<ul style="list-style-type: none"> <li>Individual meetings</li> <li>Letters and Factsheets</li> <li>Third party (Solicitors)</li> </ul>	<ul style="list-style-type: none"> <li>Consult with residents of Stage 1 and 2 properties, to arrange land acquisition.</li> </ul>	<ul style="list-style-type: none"> <li>2016 to 2018</li> <li>Commencing November 2016</li> </ul>	ETS & Property Services (Support from CRM)

Communication Tool	Key Actions	Timeline/deadline	Responsibility*
<ul style="list-style-type: none"> <li>Community Reference Group</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing communication and consultation with the Community Reference Group to plan and deliver the project.</li> </ul>	<ul style="list-style-type: none"> <li>Throughout 2016 to 2023</li> <li>Stage 1 to be completed by late 2018</li> </ul>	ETS
<ul style="list-style-type: none"> <li>InfoSumm</li> <li>Presentations to SBS, as required</li> </ul>	<ul style="list-style-type: none"> <li>Keep Councillors/EMT informed on progress of the project, and key milestones</li> </ul>	<ul style="list-style-type: none"> <li>As required, on an as needs basis</li> </ul>	ETS
<ul style="list-style-type: none"> <li>YSM website</li> <li>Factsheets and letters</li> </ul>	<ul style="list-style-type: none"> <li>Inform the broader community on progress and update during planning, design and construction.</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing 2016 – 2023</li> <li>Commencing late 2016 for Stage 1</li> </ul>	ETS and CRM