

VicRoads Tree Planting Policy

February 2015

1. Context

Tree planting creates a tangible sense of place and enhances amenity. Trees reduce heat retention in urban areas, create attractive streetscapes that encourage walking and cycling, and are a highly valued aspect of neighbourhood character. Trees contribute to greener neighbourhoods which deliver positive public health, environmental and social benefits to the community.

VicRoads has historically been seen as an impediment to the implementation of boulevards and tree planting. This policy has been developed through extensive collaboration with key stakeholders to ensure that VicRoads policy position is in line with community and government expectations.

This policy supports greener healthier environments and facilitates a safe and efficient road network, by enabling tree planting in the road reserve under certain conditions.

This policy will continue to be reviewed to remain consistent with community expectations and emerging evidence regarding the benefits provided by trees and regarding road safety impacts.

2. Policy Scope

This policy describes VicRoads approach to the planting of trees within all declared road freeway and arterial road reserves for which VicRoads is the Coordinating Road Authority (CRA) under the Road Management Act 2004 (RMA).

3. Policy Objectives

The objectives of tree planting are to:

- Improve community wellbeing by supporting significant boulevards of trees;
- Increase the mode share of walking and cycling through roadside environments that encourage active travel;

4. Transport System Objectives

The RMA establishes a road management framework and the CRA plays a key role in determining appropriate uses within road reserves.

The CRA should seek to:

- ensure the safety of road users and the community;
- minimise disruption and inconvenience to road users;
- protect the environment;
- protect the physical integrity of the road and infrastructure in the road reserve; and
- ensure the most efficient use of the resources available for road management.

5. Policy Principles

Policy principles have been developed to define VicRoads position and support decision-making regarding the planting of trees in road reserves. To comply with this policy, all the following **Policy Principles** must be satisfied to achieve the **Policy Objectives** and appropriately consider the **Transport System Objectives**.

Safe System Risk Principle

The risk of death and serious injury is directly related to the forces on the vehicle occupants when a vehicle impacts an object, and the likelihood of impact with that object.

- *Where the planting of trees would clearly result in an impact force exceeding human tolerances for vehicles that leave the carriageway, then mitigation measures should be undertaken to reduce the impact force within human tolerances*
- *Where the planting of trees is in a location with a higher likelihood of vehicles leaving the carriageway (i.e. curves, intersections etc.) AND there is potential for the impact force to exceed human tolerances, then mitigation measures should be undertaken to reduce the impact force within human tolerances.*
- *The planting of trees should not impact on sight lines for the safe operation of the road for the whole life of the trees.*

Road Network Efficiency Principle

- *Where roads are designated as significant freight or traffic routes, then tree planting should be done in a way that ensures there is no adverse impact on the efficiency of vehicle movement on those roads*

Sustainable Transport Principle

- *Where the planting of trees will significantly enhance opportunity for walking and cycling participation, and the road is a priority area for walking, then tree planting should be strongly supported*

Maintenance Responsibility and Cost Principle

- *Where tree planting increases the long term cost to maintain the road, then the planting of trees and the tree management arrangements should be implemented in a way that minimises any cost increase to VicRoads.*
- *If the planting of trees will significantly increase the cost to maintain or provide utility services in the road reserve, then planting should be done in a way that minimises the impact.*

Environmental Sustainability Principle

- *Where roadsides allow scope for tree planting, then consideration should be given to adopting environmentally sensitive landscape designs that protect and enhance the environment.*

Community Wellbeing Principle

- *Where roadsides allow scope for tree planting, and all the other principles can be met, then tree planting should be encouraged in a way that aligns species selection and planting design with local planting strategies, improves amenity and reduces visual clutter.*

6. Responsibilities

<i>Role</i>	<i>Responsibility</i>
Regional Directors & Project Directors	<ul style="list-style-type: none"> • Apply the Policy Guidance • Apply the Policy Principles in situations not covered by the Policy Guidance to make a principles-based decision and document the decision making process
Director Network Policy & Standards	<ul style="list-style-type: none"> • Review, monitor and disseminate this policy
Executive Director – Policy & Programs	<ul style="list-style-type: none"> • Approve this policy and approve exceptions to this policy

7. Policy Guidance

This section outlines a best practice approach to applying the tree planting **Policy Principles** to achieve the **Policy Objectives** and appropriately consider the **Transport System Objectives**.

Where the policy guidance is not appropriate for a specific situation, the **Policy Principles** and **Transport System Objectives** should be applied and satisfied in consultation with relevant stakeholders to make a principles-based decision to achieve the **Policy Objectives**. The process and reasoning for the principles-based decision should be documented.

7.1 Safe System Risk Principle

This principle requires consideration of both the impact forces on the vehicle occupants and the likelihood of a crash with a tree. Mitigation measures will generally involve the control of the impact forces through speed management or barrier protection. The likelihood of a crash is generally related to higher risk locations like curves, intersections, access points and merge points, but can also be assessed from an analysis of existing road safety evidence at the site.

Prior to applying the suggested mitigation methods for different speed zones as detailed below, an assessment should be undertaken to determine whether there is any evidence of existing road safety issues which relate to tree planting, such as previous run-off-road crashes or compliance issues such as speeding. If so, then these road safety issues should be addressed prior to planting any trees in the road reserve.

The following table outlines the suggested mitigation methods for different speed zones.

Note: where the guidance in the following table is not considered appropriate for a specific tree planting proposal, a comprehensive road safety risk assessment may be undertaken to determine an appropriate alternative solution.

Speed Zone	Suggested Road Safety Mitigation Method	
40 km/h	<p>At this speed, it is considered that the impact force is unlikely to exceed human tolerances, so no specific mitigation is needed for trees in the road reserve.</p> <p>A minimum lateral distance from line of kerb of 1 m should be maintained from line of kerb, wherever possible, to reduce incidental interaction between vehicles and trees.</p>	
50 km/h	<p>Generally at this speed, it is considered that the impact force is unlikely to exceed human tolerances, but higher than at 40 km/h. No specific mitigation is needed for trees in the road reserve, unless risk factors are identified such as adverse road geometry.</p> <p>A minimum lateral distance from line of kerb of 1 m should be maintained, wherever possible, to reduce incidental interaction between vehicles and trees.</p>	
60 km/h	At this speed, mitigation is required at higher risk locations.	
	Road environment	Suggested Road Safety Mitigation Method
	<ul style="list-style-type: none"> Intersections 	<p>at least 10 m beyond intersection on the approach and departure side (e.g. 10m from stop line).</p> <p>For intersections with slip lanes, the inside curve of the slip lane may be treated like a gentle curve, with 3.6 m lateral distance from line of kerb is required. There should be no planting within traffic islands as vehicles will be driving directly towards hazards.</p>
	<ul style="list-style-type: none"> Driveways 	at least 3 m between driveway and tree; 1.2 m lateral distance from line of kerb from kerb
	<ul style="list-style-type: none"> Lane merge locations 	3.6 m lateral distance from line of kerb
	<ul style="list-style-type: none"> Curves 	3.6 m lateral distance from line of kerb for gentle curves; barrier for moderate/tight curves
	<ul style="list-style-type: none"> Straight roads with kerb 	
	Permanent parking or bicycle lanes between through traffic lane and trees, or	No further mitigation needed*
	Minimum of 10 existing roadside hazards per 100 m (e.g. trees or poles), or	No further mitigation needed (for trees at same off-set as existing hazards)*
	Parking during off-peak and clearways during peak times on congested roads with operating speeds less than or equal to 50 km/h, or	No further mitigation needed*
	Other	<ul style="list-style-type: none"> 1.2 m lateral distance from line of kerb (consider bicycle lanes, parking), or consider reducing the speed limit, or consider providing barrier, or undertake a risk assessment to determine appropriate mitigation
	<p>* A minimum lateral distance from line of kerb of 1 m should be maintained, wherever possible, to reduce incidental interaction between vehicles and trees.</p> <p>Where there is a history of fatal or serious injury run-off road crashes, a risk assessment should be undertaken to identify appropriate mitigation.</p>	
70 km/h & 80 km/h	<p>At this speed, it is considered that the impact force is highly likely to exceed human tolerances. Trees in the road reserve usually present an unacceptable hazard/risk, as crashes at these speeds will result in fatal and serious injuries. Safety barriers are the most appropriate mitigation e.g.:</p> <ul style="list-style-type: none"> wire rope safety barrier, guard rail or other approved safety barrier that is suitable in high speed environments. <p>Note: This list is based on current standards and approved products, and will vary with time</p>	
90 km/h & 100 km/h	<p>At this speed, it is considered that the impact force is highly likely to exceed human tolerances. Trees in the road reserve present an unacceptable hazard/risk, as crashes at these speeds will result in fatal and serious injuries. Safety barriers should always be used, e.g.:</p> <ul style="list-style-type: none"> wire rope safety barrier, guard rail or other approved safety barrier that is suitable in high speed environments. <p>Note: This list is based on current standards and approved products, and will vary with time</p>	

Note: clear sight lines should be maintained at all times

**Refer to appendix A for depictions of suggested road safety mitigation*

Pedestrian Safety

A key benefit of enabling tree planting in the road reserve is that it may encourage active travel, including walking. As the number of pedestrians increases, the number of pedestrian crossing movements will grow accordingly. This may increase the likelihood of pedestrian/vehicle conflicts. It is necessary to encourage pedestrian crossing movements at safe locations through effective road design. Refer to *Austrroads Guide to Traffic Management, Part 6: Intersections, Interchanges and Crossings* for further guidance on how to effectively design for pedestrian movements.

7.2 Road Network Efficiency Principle

Some roads are more strategically important for moving people and goods efficiently, whilst others roads have a stronger role in providing access. All tree planting treatments should support the SmartRoads Road Use Hierarchy.

Direct impact on road network operation

In order to mitigate road safety risk, traffic movement may need to be directly impacted, such as reducing speed limits or the number of traffic lanes. Where a direct impact on traffic movement is required, a SmartRoads network fit assessment should be undertaken in conjunction with the relevant VicRoads traffic team to consider the function of the road and to develop an acceptable treatment. The following table outlines when a direct impact on traffic movement is generally acceptable:

Principal Networks	Impact on Road Network Operation
Principal Freight Network (PFN), Principal Traffic Flow Network (PTFN) or Over-Dimensional Routes (ODR)	<i>Generally not acceptable</i> Where the proposed treatment is on a road which forms part of the PFN, PTFN or ODR, a direct impact on traffic movement is generally not acceptable.
Principal Pedestrian Network (PPN) or Principal Bicycle Network (PBN)	<i>Generally acceptable</i> Where the proposed treatment is on a road which forms part of only the PPN or the PBN, a direct impact on traffic movement may be acceptable. A SmartRoads network fit assessment should be undertaken in conjunction with the relevant VicRoads traffic team to consider the function of the road and to develop an acceptable treatment.
Principal Public Transport Network (PPTN)	<i>Context specific</i> Where the proposed treatment is on a road which forms part of the PPTN, the context must be considered, by undertaking a network fit assessment. A SmartRoads network fit assessment should be undertaken in conjunction with the relevant VicRoads traffic team to consider the function of the road and to determine if an acceptable treatment can be developed.

Indirect impact on road network operation

In some instances, trees can be planted without directly impacting transport network efficiency. However, all trees in the road reserve need to be maintained to ensure that branches do not impede traffic movement, including freight, buses and trams.

7.3 Sustainable Transport Principle

A key benefit of enabling tree planting in the road reserve is that it may encourage active travel such as walking, cycling and public transport use. The intent of this principle is to encourage facilities to support active modes as part of tree planting works on roads which have a clear walking priority.

As part of tree planting works:

- Existing active travel facilities should be maintained
- Where appropriate, active travel facilities should be upgraded or provided
- Provision of future facilities should be allowed for (i.e. not prevented as a result of the planting design)

The context of the project is important in determining what provision should be made for active travel. For example, a higher level of provision would generally be appropriate in or around activity centres. Active travel connections across roads, as well as along roads, need to be considered.

For guidance on active travel facilities refer to:

- Austroads' Guide to Road Design Part 6A – Pedestrian and Cyclist Paths
- Department of Transport's *Public Transport Guidelines for Land Use and Development* (2008)

7.4 Maintenance Responsibility and Cost Principle

Maintenance Cost

VicRoads manages declared freeway and arterial road network for the benefit of the community. Resources must be managed carefully in order to deliver the best overall outcomes for the community. All tree planting treatments should be designed to minimise installation and ongoing maintenance costs, including clearance envelopes over roadways and pathways, pavement damage (such as by tree roots), traffic and footpath management for maintenance activities, traffic safety barriers and tree replacement.

Where an external party (e.g. municipal council) approaches VicRoads and proposes tree planting in the road reserve, funding for implementation and ongoing maintenance costs should be provided by the external party.

Funding is required to cover implementation and ongoing maintenance costs of tree planting treatment and associated infrastructure, such as traffic safety barriers. Examples of appropriate funding models for maintenance include:

- Ongoing maintenance by a road authority (such as a municipal council) should be managed via an arrangement under section 15 of the RMA,
- Ongoing maintenance costs paid annually with a written agreement (e.g. may be a suitable arrangement with a municipal council), or
- Upfront one-off capitalised payment to cover ongoing maintenance costs in perpetuity (e.g. may be a suitable arrangement with a developer).

Selection of funding model for maintenance costs should be based on the relationship VicRoads has with the external party with the Region being confident of cost recovery.

QD: 2894643

Please note that section 37 of the RMA states, subject to any arrangement made under section 15, that the municipal council is responsible for the maintenance of vegetation in roadsides and outer separators in Urban Areas. VicRoads is responsible for vegetation in any median of a road in Urban Areas and for the roadside of arterial roads in non-Urban Areas. If Council proposes a tree planting treatment involving the median, then VicRoads should ensure there is an agreement in place to manage the maintenance of vegetation in the median along with any related infrastructure (e.g. traffic safety barriers, impact on pavement, etc.). Similarly, Council must be consulted where VicRoads is proposing tree planting in outer separators and roadsides in Urban Areas.

Utility Services

VicRoads also has a legislative responsibility to ensure that the road reserve provides for the effective and efficient delivery of utility services. This means that when a tree planting treatment is being considered and designed, the treatment must ensure existing services are maintained and that space is provided for future services. This applies to both underground and above ground services. Consideration should also be given to undergrounding services, where possible.

Access to utility services in the road reserve must be retained at all times for maintenance purposes.

7.5 Environmental Sustainability Principle

As part of any tree planting works, consideration should be given to protecting and enhancing the environment and mitigating transport related impacts on the local community. Where appropriate, the design should accommodate:

- habitat and biodiversity goals, particularly in the vicinity of parks and waterways
- water sensitive urban design to reduce stormwater runoff, mitigate the urban heat island effect and improve tree health. For further guidance, refer to:
 - *VicRoads Integrated Water Management Guidelines* (QD:1832161)
 - Melbourne Water’s process and guidance on Water Sensitive Urban Design CSIRO publishing, 2005. *WSUD Engineering Procedures: Stormwater*

7.6 Community Wellbeing Principle

Trees are highly valued by the community. Providing trees in the road reserve will improve the amenity of the area.

Tree species and planting techniques should:

- support the purpose of the treatment
- be appropriate for the local environment
- be cost effective
- not require closure of traffic lanes and footpaths for maintenance purposes
- not adversely affect pavement integrity.

Tree selection should be determined in consultation with a technical specialist and the relevant local council. Please note that many local councils have published guidance on preferred tree species for particular locations within the municipality.

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Consideration may also be given to additional enhancement works to reduce visual clutter and improve other aspects of amenity (such as, seating, water fountains, etc.) to take advantage of the benefits provided by trees.

8. Exceptions

Where any deviation from the **Policy Principles** is proposed, approval must be sought from the Executive Director of Policy and Programs. It must be demonstrated why deviation from the principles is considered acceptable.

9. Evaluation and Review

This policy will be evaluated and reviewed periodically to monitor its progress towards achieving the intended outcomes. Refer to the Evaluation Record (QD:2537486).

10. Related documents

<i>Document title</i>	<i>Reference</i>
Policy Analysis – VicRoads Tree Planting Policy	#2408847
Evaluation Record – VicRoads Tree Planting Policy	#2537486
AASHTO, 2011, Road Design Guide, Chapter 10: Roadside Safety in Urban or Restricted Environments	
Austrroads Guide to Road Design, Part 2: Design Considerations	Austrroads Website
Austrroads Guide to Road Design, Part 6: Roadside Design, Safety and Barriers	Austrroads Website
Austrroads Guide to Road Design, Part 6A: Pedestrian and Cyclist Paths	Austrroads Website
Austrroads Guide to Road Design, Part 6B: Roadside Environment	Austrroads Website
Austrroads Technical Report, Application of the Analytic Hierarchy Process in Road Asset Management: User Manual	Austrroads Website
VicRoads Supplement to the Austrroads Guide to Road Design	Austrroads Website
Austrroads Guide to Road Safety, Part 9: Roadside Hazard Management	Austrroads Website
Austrroads Guide to Traffic Management, Part 6: Intersections, Interchanges and Crossings	Austrroads Website
VicRoads Road Design Notes	VicRoads Website
<ul style="list-style-type: none">RDN 03-01: The use of High Profile Barrier Kerb (HPBK)RDN 06-02: The user of Wire Road Safety Barriers (WRSB)RDN 06-04A: Accepted Safety Barrier Products	
VicRoads Traffic Engineering Manual, Vol 1, Chapter 7: Speed Zoning Guidelines	VicRoads Website

11. Contact details

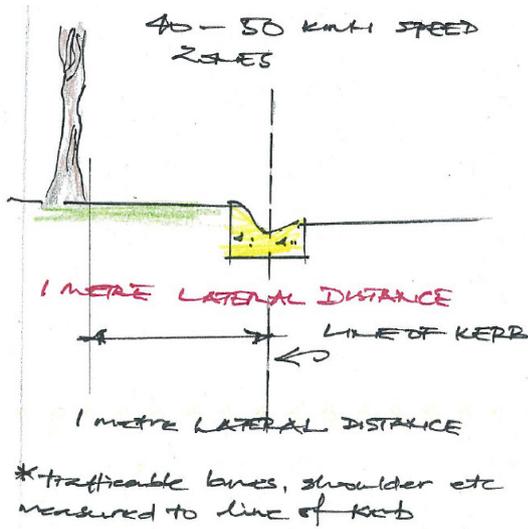
Questions relating to this policy should be directed to the Manager Operations Policy, Policy and Programs, VicRoads.

12. Policy Governance Summary

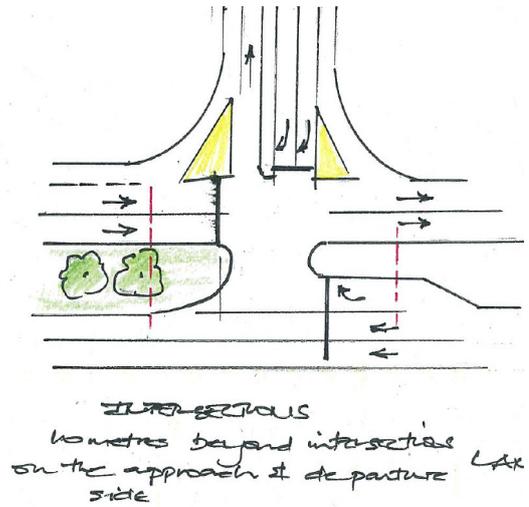
<i>Policy Ownership and Approval Record</i>			
Business Area Owner	Policy and Programs		
<i>Approval</i>	<i>Action</i>	<i>Position</i>	<i>Date</i>
	Approve	Executive Director Policy & Programs	20 February 2015 QD: 2870564
<i>Date of Effect</i>	This policy will take effect upon approval.		
<i>Version No.</i>	1		

Appendix A: Depictions of suggested road safety mitigation

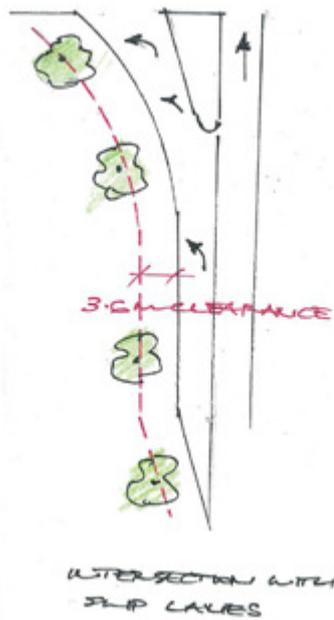
40 and 50 km/h speed zones



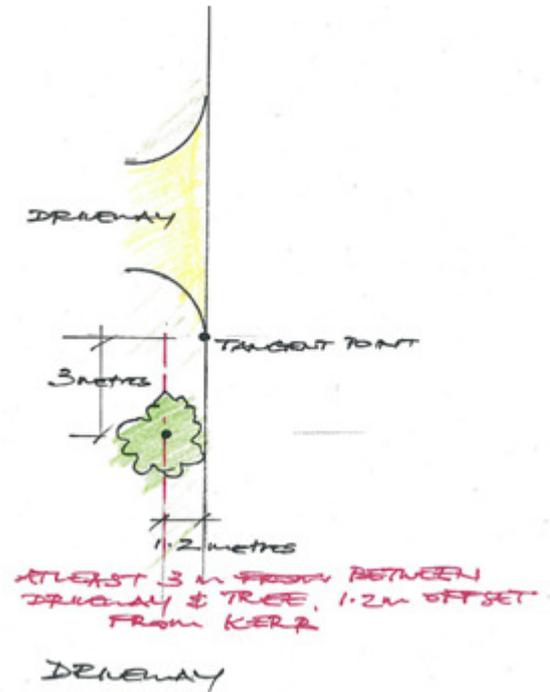
Intersections (60 km/h)



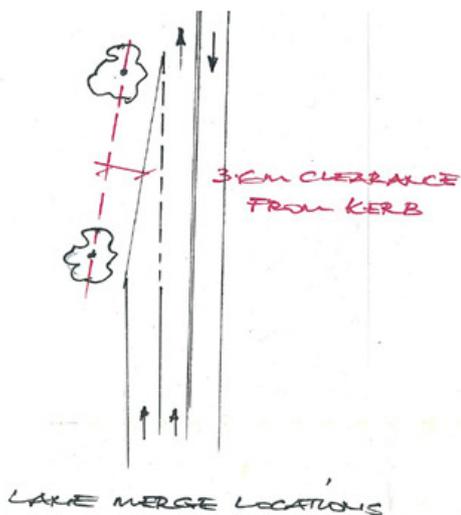
Intersections (60 km/h)



Driveways (60 km/h)



Lane Merge Locations (60 km/h)



Gentle Curves (60 km/h)

