Darklab
Ida Bay Railway

328 Lune River Road
Lune River
TAS 7109

Tree Risk-Benefit Management Strategy

Contact Arborist
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Element Tree Services
0417144192

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Appendices

1 Establishing the context

Trees give us many benefits that we need

1 The more obvious benefits that trees give us are visual beauty in the landscape, wood, and the various crops they produce. Further values include wildlife habitat, pollution filtering, and reducing the harmful effects of both weather and climate change. Trees also have important social value as part of our culture, history, or because they commemorate an important event. As if those benefits weren't enough, an increasing body of scientific evidence demonstrates that trees are fundamental to our physical health, mental wellbeing, and quality of life.

The overall risk to us from branches or trees falling is extremely low

2 Compared to other everyday risks we readily accept, the overall risk to us from branches or trees falling is extremely low. Our annual risk of being killed or seriously injured is less than one in a million. That's so low, we're at greater risk from a 200 miles (320km) round trip drive to visit friends for a weekend than from branches or trees falling for a whole year. Given the number of trees we live with, and how many of us pass them daily, being killed or injured by a tree is a rare event; one that usually happens during severe weather.

We can't be an insurer of nature or eliminate the risk from trees

3 Of course, we can't be an insurer of nature, and trees are living structures that sometimes shed branches or fall over. But this usually happens because of severe weather. Or because they have an obvious risk feature. Since we need the many benefits from trees, we have to accept we can't remove all of the risk. Trees can also drop cones, nuts, and fruits, though these risks are so low they're Acceptable: any exceptions are covered in the Plan.

1.1 Duty of care

Reasonable
Proportionate
Reasonably practicable

4 We have a duty of care to manage the risk from our trees. That duty also says we should be reasonable, proportionate, and reasonably practicable when managing the risk. What that means is, there's a balance we need to strike between the many benefits trees provide, the risk, and the costs of managing the risk. By taking a balanced approach, we don't waste resources by reducing risk - and losing benefits – when the risk is already Acceptable or Tolerable.

We all have a responsibility to make reasonable decisions

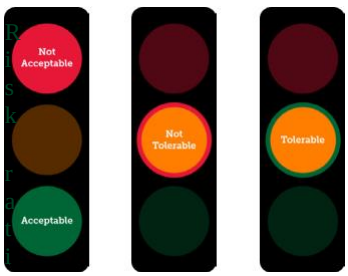
5 We're all expected to act reasonably and responsibly. When severe weather is forecast, we can manage our exposure to the higher risk from tree failure by not going out. If we go out, we're choosing to accept some of the risk.

1.2 Risk tolerance

What's an Acceptable or Tolerable level of risk from our trees?

6 The Tolerability of Risk Framework (ToR) is an internationally recognised approach to making risk management decisions. It's used by duty holders where they manage a risk that's imposed on the public. ToR defines Broadly Acceptable and Unacceptable levels of risk. Between them is a region where the risk is Tolerable if it's 'as low as reasonably practicable' (ALARP). Put simply, ALARP means the risk is Tolerable if the costs of the risk reduction are much greater than the value of the risk reduction.

1.3



2 Establishing our context

Reasonable Proportionate Reasonably practicable

8 This Tree Risk-Benefit Management Plan, and following sections in the strategy, explain how we're going to carry out our Tree Risk-Benefit Policy. We're taking a reasonable, proportionate, reasonably practicable approach to manage the risk from our trees to an Acceptable or Tolerable level.

We have a large number of trees to manage with limited resources

9 The Ida Bay site has a number of mature trees, but we do not have anyone trained in tree risk assessment.

Assessing every tree every year, or every other year is not reasonable, proportionate or reasonably practicable

10 The overall risk from tree failure is extremely low. Therefore, carrying out an assessment of every tree, every year, or every couple of years isn't reasonable, proportionate, or reasonably practicable. Particularly, when trees that have a risk that's not Acceptable or Tolerable usually have risk features that are so obvious you can't help but notice them.

Zoning helps us focus our resources where they'll be most effective

11 Risks that are not Acceptable or Tolerable are most likely to be found where the likelihood of occupancy is very high or high, and there are large trees. It's these zones of 'high confluence' where we'll focus our resources.

2.1 What we're going to do

We'll identify zones of high confluence

12 Zones of high confluence are where we have high-use, which is an average of 1400 or more vehicles per day, and mature trees. For people, we're looking at something around 1200 per day. We'll establish where these zones of high confluence are located.

We're going to manage our risk by Active & Passive Assessment

13 We're going to manage our risk by a combination of Active and Passive Assessment. We'll carry out Active Assessment (Section 3) in zones of high confluence, and Passive Assessment (Section 4) in all zones.

2.2 Active Assessment

Active Assessment is carried out in zones of high confluence

14 Every 5 years, we'll hire an Arborist who's been trained in tree risk assessment to carry out an Active Assessment in zones of high confluence. We'll get them in to monitor trees more frequently than 5 years when a Detailed Assessment has recommended it. Similarly, we will increase the frequency of Active Assessment if we have an outbreak of a disease within a population of trees and an Arborist has recommended it.

2.3 Passive Assessment

Passive Assessment is carried out in all zones of occupancy

15 When a tree has a risk that might not be Acceptable or Tolerable it'll often have tree risk features that are so obvious you can't help but notice them. That means trees with the highest risk are the easiest to find. Passive Assessment is our staff keeping an eye out for these Obvious Tree Risk Features (Appendix A2) whilst they go about their day-to-day routines.

2.4 Severe weather

We'll be vigilant after storms as part of Passive Assessment

16 When a severe weather warning is forecast we'll close to visitors. Once the severe weather has passed, all our staff will keep an eye out for obvious tree risk features as part of Passive Assessment.

You can take some responsibility for your own risk

17 Most deaths and injuries from tree failure happen during or just after severe weather. When a severe weather warning is forecast, you can manage your exposure to the higher risk by not visiting, and by being watchful just after.

3 What's Active Assessment?

A structured approach with three levels of assessment

18 Active Assessment is taking a structured approach where we're looking to find risks that might not be Acceptable or Tolerable. It has three levels to it that increase in depth of evaluation from, Basic, to Detailed, up to Advanced.

Risk ratings are limited by the level of assessment

19 Risk ratings have limitations that are dependent on the level of assessment at which they're made. For instance, at a Basic Assessment level, if there are no obvious tree risk features then the risk is Acceptable. A Detailed or Advanced Assessment is an increase in depth of evaluation that might find risk features which weren't obvious at a Basic level, and could mean a higher risk. However, carrying out these higher levels of assessment without an obvious risk feature to trigger them is not reasonable, proportionate, or reasonably practicable.

3.1 Basic Assessment

Finding the few trees where the risk might not be Acceptable or Tolerable

20 A Basic Assessment is our starting point. At this level, we aim to find trees with obvious risk features where the risk might not be Acceptable or Tolerable. We'll carry out a Detailed Assessment on these trees.

We'll assess the trees from easily accessible ground

21 We'll assess the trees from easily accessible ground, by foot, bike, or in a vehicle with a drive-by.

We won't remove vegetation unless there's an obvious tree risk feature

22 We won't remove climbing plants, undergrowth, basal epicormic growth, or cut hedgerows to get a closer look and carry out a Detailed Assessment unless there's an obvious tree risk feature. It's only when an obvious tree risk feature is found that the costs of removing vegetation, and the loss of habitat benefits, are justified.

The trees or what they could fall on and the type of assessment will be recorded

23 Trees or what they could fall on and the type of assessment are recorded. For example, in a park, individual or groups of trees are plotted and recorded as having been assessed on foot. Whereas, if there are many trees beside a road, the road will be recorded as having been assessed on foot or with a drive-by.

No obvious tree risk features The risk is Acceptable

24 Unless individual trees have been picked out for a Detailed Assessment the risk will be recorded as Acceptable at this Basic Assessment level.

3.2 Detailed Assessment

We do a Detailed Assessment when a tree needs a closer look

25 A Detailed Assessment is carried out on trees picked out during a Basic Assessment as needing a closer look because they have an obvious tree risk feature. Or because a tree has been highlighted by Passive Assessment.

The risk is assessed with the App

26 The assessment is done from ground level using the VALID Tree Risk App.

We'll produce a report Any risk reduction work will be recorded

27 The report will include the risk rating, risk review year, risk reduction work options (if necessary), and any general management advice. Any risk reduction work will be recorded when it's been completed.

3.3 Advanced Assessment

Large and important trees might be worthy of more effort and cost

28 If we need more information about the likelihood of failure, an Advanced Assessment can be carried out. This might be an aerial inspection to take a closer look at the upper stem and branches. Getting access to steep slopes. Or, most commonly, because we suspect extensive decay with significant strength-loss, and want to find out whether the tree is strong enough.

What we do depends on the tree

29 There are several options to find out whether a tree is strong enough. They range in thoroughness and cost. If the costs of an Advanced Assessment are substantial, we'll need to decide whether the tree has enough value and future benefits to justify the expense. If we carry out an Advanced Assessment, we'll produce a report covering the same ground as in a Detailed Assessment.

4 What's Passive Assessment?

Trees with the highest risk are the easiest to find

Picking up on obvious tree risk features you can't help but notice

30 When a tree has a risk that might not be Acceptable or Tolerable it'll often have obvious tree risk features which you can't help but notice. That means trees with the highest risk are the easiest to find. Passive Assessment is simply picking up these obvious features when we pass trees whilst going about our day-to-day routine. Here are some examples;

- Driving into work, one of our staff, who's been trained in basic tree risk assessment, can't help but notice a tree on the edge of a group that now has a lean it previously didn't have.
- Whilst carrying maintenance in a rest area, a member of our staff can't help but notice a broken hanging branch over a footpath after a storm.
- On one of our walks, a member of the public can't help but notice a split that's recently appeared in the trunk of a tree.

Our trees are being constantly assessed for risk

31 Passive Assessment is an unstructured approach that's available to everyone. It doesn't need the specialists and organisation that's necessary to carry out a structured Active Assessment. This makes Passive Assessment a particularly valuable asset because it's being carried out all of the time, by everyone, at no additional cost. Many more trees are being passively assessed, and more often, than with Active Assessment. Better still, it's the high-use zones which are being more frequently assessed because they're also the zones that are being more frequently used. Importantly, Passive Assessment will be happening soon after storms when trees that have been damaged might now have a risk that's not Acceptable or Tolerable.

Trees of concern will be put through Active Assessment

32 Trees picked up by Passive Assessment will be logged and we'll let our Contact Arborist know about them. If the Contact Arborist thinks they need a closer look they'll be put through the Active Assessment process.

4.1 Staff

Our staff carry out Passive Assessment

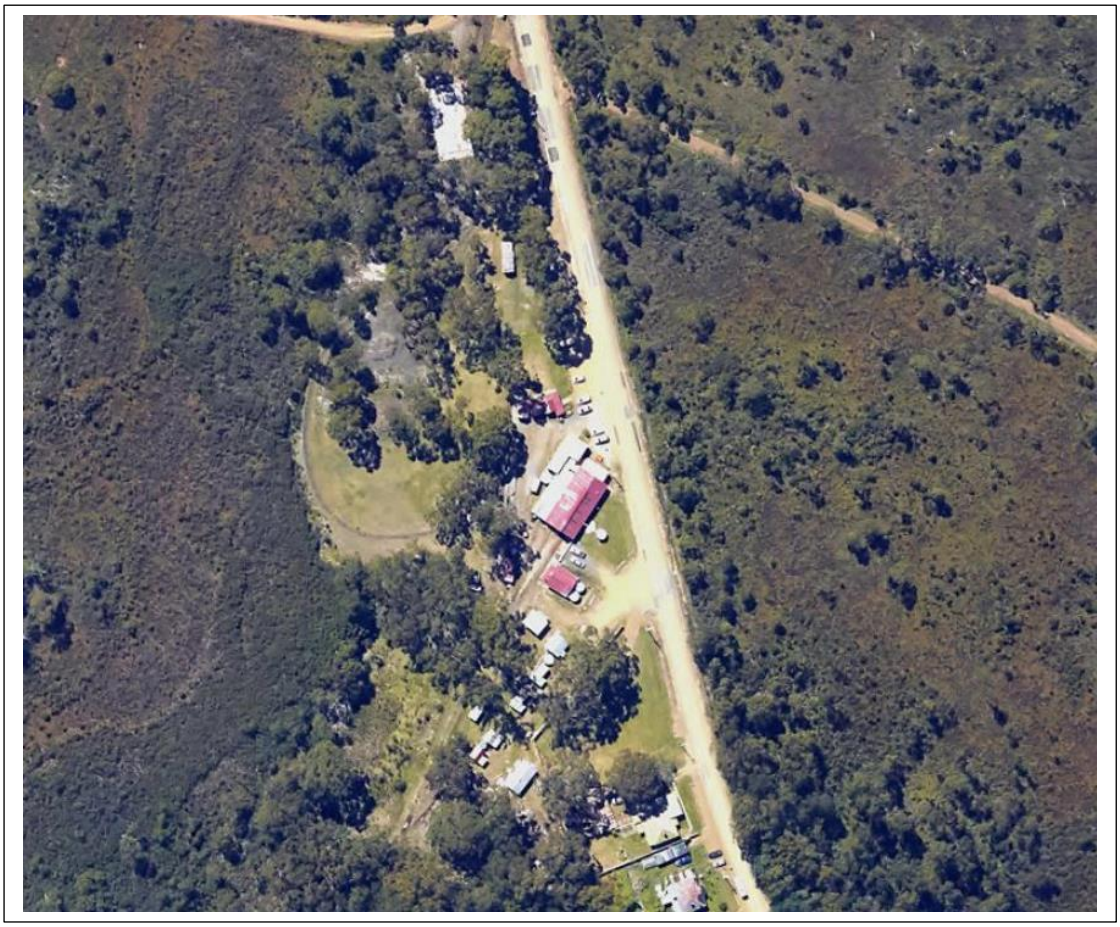
33 None of our staff have been trained in basic tree risk assessment, but all our staff have a copy of the 'Obvious Tree Risk Features Guide' (Appendix A2). Everyone keeps an eye out for obvious tree risk features.

4.2 Visitors

Let us know if you think our trees might be dangerous

34 Please let us know if you think any of our trees have obvious tree risk features which might mean they're dangerous. On our website page (link), you'll also find our contact details so you can call, or send a message with photographs of the tree.

Ida Bay Railway



When might a tree be dangerous?

Trees with the highest risk are the easiest to find

When a tree has a risk that might not be Acceptable or Tolerable, it'll often have an obvious tree risk feature that you can't help but notice. If you come across a tree with any of these obvious features in a well-used area, it should be looked at by an Arborist who's been trained in tree risk assessment.

Root failure

Be watchful after storms

Storms can break tree roots without blowing them over

Tell-tale signs are
Change in angle of the trunk
Large cracks in the soil
Hump in the ground on one side

Hanging branches

Don't forget to look up

Branches can break during storms and still hang on

Sometimes they can get stuck up there for quite a while

A crack or split into the wood, beyond the bark

When trees bend and twist in storms the wood can split and crack

Vertical cracks in the bark are just the tree growing well there's no need to worry

Advanced decline or death

To be healthy and stay strong trees need 'solar panel' leaves to make food and new rings of wood

When trees are suffering there's often much less leaf cover and many more dead branches

Standing dead trees have great habitat benefits but need checking

Decay fungi fruiting bodies

To decay fungi these 'fruits' are like apples to an apple tree

Decay fungi and trees mostly live happily together creating essential habitat for wildlife

Fungi can sometimes 'eat' too much wood and weaken the tree

Photographs Jake Miesbauer, Michael Richardson, Roy Finch, Mark Hartley, Rick Milson, David Abrahams Felicity Cloake & Wilf, David Humphries, Jack Prynn.

What is Summer Branch Drop (SBD)?

Branches that unexpectedly fail after hot dry weather

SBD is a very loose term for branches on mature trees that have no obvious tree risk features, which unexpectedly fail after a period of hot dry weather

Fact-checking the risk

The overall risk is mind-bogglingly low

Compared to other everyday risks that we readily accept, the overall risk from SBD is mind-bogglingly low. From the data[1][2] we do have, the annual risk of death or serious injury is less than a one in one hundred million. That's so low, we're at greater risk for the few minutes it takes to cover about 2 miles (3km) on a drive, than we are from SBD for a whole year.

What we know and what we don't know

There's no agreement about what SBD is or what it's called

Perhaps because the overall risk from SBD is so mind-bogglingly low, it's not been very well researched. There's no agreement about what SBD is, or even what it's called - it's also known as Sudden Branch Drop and Sudden Limb Drop. It's often used as a catch-all term to describe branch failure when wind or extensive decay doesn't appear to be an obvious explanation.

There's no agreement about the critical factors that trigger branch failure

In the published literature the causes of SBD are not agreed or clear[3][4]. Amongst these, there's no agreement about how hot and dry it needs to be, and for how long; or if humidity plays a role. Whether the branch has to be horizontal or if its length is a critical factor. What time of day it's likely to happen, and if rain is required. Or even whether the branch has to be free of obvious tree risk features to qualify.

Species profiling and a lack of obvious features

Many tree species can suffer from SBD

In the literature, SBD's been recorded on the following species; Ash, Beech, Cedar, Corymbia, Elm, Fig, Eucalyptus, Giant Sequoia, Horse Chestnut, Liquidambar, Oak, Pine, Plane, Poplar, Silver Maple, Sweet Chestnut, Tree of Heaven, Willow. There are probably more species not yet recorded.

We can't tell which branches will or will not fail

The branches that might fail because of SBD on trees that don't have a history of it lack obvious tree risk features. This means an Arborist can't tell the difference between branches that have a high likelihood of failure from those that have a low likelihood of failure before they unexpectedly fail.

Managing the risk

Unless a tree has a history of SBD the risk is Acceptable

If our trees don't have a history of SBD, then even at the times of the year when it's most likely to occur the risk is Acceptable. That means there's no need to reduce the risk any further. If any of our trees with a history of SBD then we'll manage the risk to an Acceptable level.

Further Information

1 National Tree Safety Group | Risk Research
2 List of Deaths From Falling Tree Parts in Australia
3 Sudden Branch Drop: A Case for Closer Inspection
4 Summer Branch Drop | Arboricultural Research Note

VALID in a nutshell

VALID is the first complete tree risk-benefit management system. It comes with a super smart **Tree Risk App**, which we train 'Validators' to use and carry out tree risk-benefit assessments.

To partner the App, we've got a range of free, common sense **Tree Risk-Benefit Management Strategies** to help meet the needs of any duty holder.

We're a not-for-profit organisation dedicated to providing training and giving guidance about the risk from tree failure.

Tree risk-benefit assessment

VALID has been stress-tested to breaking point

When they carry out a Detailed Assessment, trained Validators use our **Tree Risk App** to enter the Likelihood of Occupancy, Consequences, and Likelihood of Failure categories. The App then works out the level of risk.

The engine of the App has been built with a Professor of Natural Hazards & Risk Science. The Professor's an internationally distinguished expert in this field. He's test-driven the model to breaking point;

> *"We have stress-tested VALID and didn't find any gross, critical sensitivities. In short, the mathematical basis of your approach is sufficiently robust and dependable for any practical purpose."*
>
> Willy Aspinall
> Cabot Professor in Natural Hazards & Risk Science
> University of Bristol

Tree risk-benefit management strategies

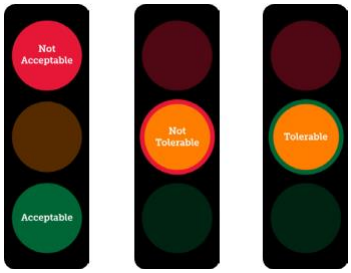
Reasonable
Proportionate
Reasonably practicable

Whether you're a Government Agency, Landowner, or Homeowner if you own trees you have a duty of care to manage the risk from them. That duty of care says, be reasonable, proportionate, and reasonably practicable when managing the risk. What this means is, there's a balance that needs to be struck between the many benefits trees provide, the overall risk from them, and the costs of managing the risk.

VALID has a range of easy to understand, common sense **Tree Risk-Benefit Management Strategies**. **These** are forged on ISO 31000 Risk Management Standards and the Tolerability of Risk Framework (ToR). As part of our not-for-profit mission, they're free and released under a creative commons license. They explain how you can go about meeting your duty of care whilst being reasonable, proportionate, and reasonably practicable. Validators can customise the strategies for duty holders to formally adopt. They also have a potted version that can be used to help clients who have yet to formally adopt a strategy.

Tree risk ratings

Risk ratings are as easy to understand as traffic lights



Yes, it really is that simple. There's no confusion about what vague words or complicated numbers mean. We have four easy to understand traffic light coloured risk ratings based on ToR, which is an internationally recognised approach to making risk management decisions.

Red **Not Acceptable** risks need to be reduced to an Acceptable level

Amber **Not Tolerable** risks need to be reduced to an Acceptable level, but have a lower priority than red Not Acceptable risks

Tolerable risks do not need to be reduced, but may require an increased frequency of assessment than green Acceptable

risks **Green** **Acceptable** risks do not need to be reduced

DEVELOPMENT IMPACT ASSESSMENT

Ida Bay Railway

2nd November 2020

For: Tim Lathouris
Project Manager, Public Art
Dark Lab

Via email: tim.lathouris@darklab.net.au

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1. Terms of reference

- This report was requested by Tim Lathouris, Project Manager at Dark Lab, to assess potential development impacts at the Ida Bay Railway, 328 Lune River Road, Lune River.
    - The assessment will also provide advice on managing the risk from falling trees post development.

- An assessment of the site was completed from the ground on the 27th of October 2020.

- This report will present the inspection findings and provide recommendations to ensure the trees can continue to positively contribute to the landscape.

2. Site Findings

The site has been subject to various phases of use during its European settlement. As a tourism development, I suspect that some trees have been removed, particularly around the buildings and railway.

Generally, the majority of the trees appear healthy and do not present as being unacceptable risks. Although there is the presence of some dead branches, the risk is considered acceptable as usage of the site will be reduced during strong wind events, when trees have an increased probability of failure.

Based on my inspection and risk assessments (Appendix 1) only one tree requires maintenance.

3. Development Impacts

The assessment will focus on two parts of the development; the car park adjacent to Ida Bay Road, and the artwork installation in the undeveloped bushland to the west.

- Car park

The chosen site has an area of compacted aggregate adjacent to tree 1 – 4 but no evidence of this exists near tree 5 and 6. It is proposed that tree 4 is removed to facilitate the parking spaces required. The following table will assess the impacts on the tree protection (TPZ) and structural root zone (SRZ) of the black gums (*Eucalyptus ovata*).

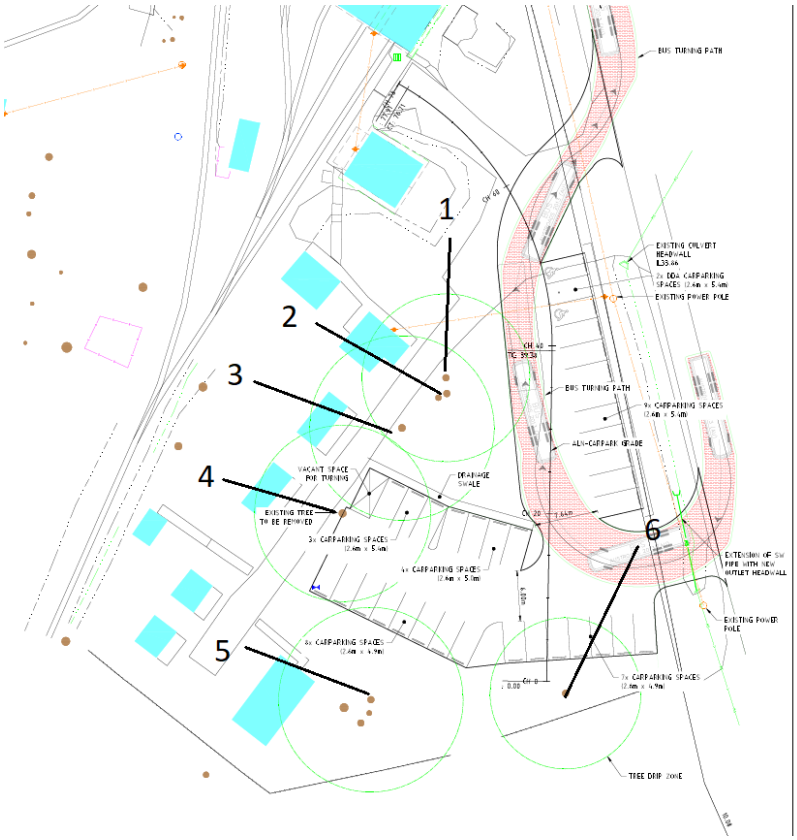

Fig. 1 – the tree locations overlaid on the JMG Site Plan

TREE	BASE	DBH	SRZ	TPZ	TPZ INCURSION	NOTES
1	0.99	0.83	3.30	9.96	5.8%	Minor incursion
2	1.6	1.15	4.03	13.80	19.2%	
3	1.17	0.97	3.53	11.64	4.7%	Minor incursion
4	0.86	0.71	3.11	8.52	48%	To be removed
5	1.3	0.92	3.69	11.04	5.7%	Minor incursion
6	1.1	0.86	3.44	10.32	24%	

The incursion into the TPZ of tree 1, 3 and 5 is considered minor and no impact is expected. Although the incursion is significant for tree 2, I do not expect it will experience a health decline. As much of this zone has already been compacted, the roots will have adjusted to this and will be more active outside of this zone.

The ground adjacent to tree 6 has not been previously disturbed, and the inclusion of a carpark may cap roots off from available water and oxygen. It is proposed that the carpark remain an aggregate surface to mimic similar growing conditions as it currently experiences. To avoid critical compaction but retain the functionality of a hard surface, I recommend installing a permeable paving system[1] where the carpark overlaps the TPZ of tree 6.

[1] One of the examples available https://www.cirtex.com.au/product/surepave/

- Bus Turning Circle

There is an incursion into the tree protection zone by way of the bus turning circle. The area that has been chosen appears to be comprised of compacted aggregate and some areas of asphalt. As the trees will have adapted to this over time, I do not expect the additional works within the zone will result in health decline of the trees along Ida Bay Road.

- Artwork Installation

It appears that much of the development will avoid the trees in this zone. The only major impact will be the potential excavation near tree 11. The remainder of the paths should not require significant excavation and their impact will be minimal. If the design changes, the data in the following table will provide some guidance on distances required to protect the trees. Ideally, no work should occur in the SRZ, whilst an incursion of less than 10% into the TPZ is considered minor.

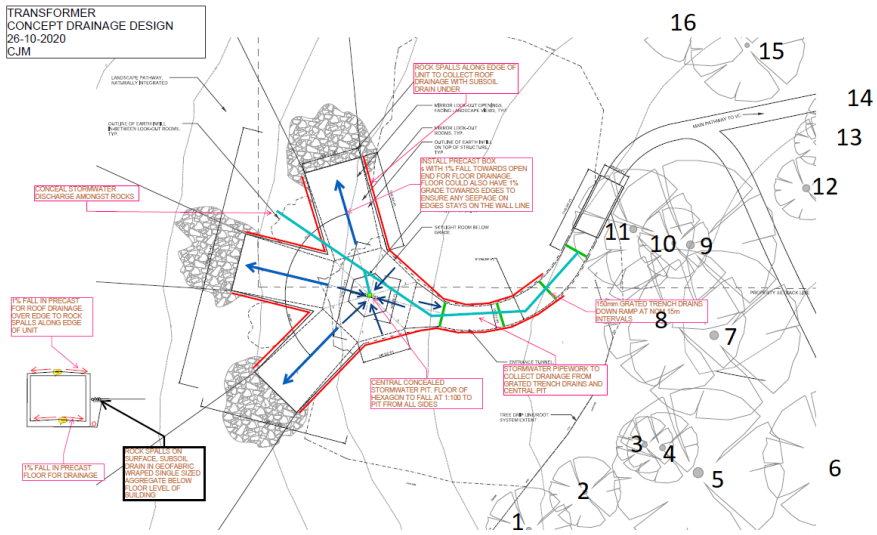

Fig. 2 - The transformer site relative to the trees.

TREE	SPECIES	BASE	DBH	SRZ	TPZ	TPZ INCURSION	NOTES
1	*E. obliqua*	1.02	0.72	3.34	8.64		
2	*E. pulchella*	1.14	0.67	3.50	8.04		Burnt base, hollow but stable
3	*E. obliqua*	1.38	1.15	3.79	13.80		Heavily burnt - nearly dead. Tree ok to senesce.
4	*E. obliqua*	1.17	0.84	3.53	10.08		
5	*E. obliqua*	1.78	1.22	4.22	14.64		
6	*E. obliqua*	1.91	1.40	4.34	15.00		Dead wood over path but well attached
7	*E. obliqua*	1.58	1.37	4.01	15.00		
8	*E. obliqua*	1.15	0.82	3.51	9.84		
9	*E. obliqua*	1.68	1.12	4.12	13.44		
10	*E. obliqua*	1.05	0.68	3.38	8.16		Burnt base, still producing new wood. Appears stable

11	*E. obliqua*	1.47	1.06	3.89	12.72	29%	Offset cut 8m from the centre of the trunk.
12	*E. obliqua*	0.63	0.47	2.73	5.64		
13	*E. obliqua*	0.48	0.42	2.43	5.04		
14	*E. obliqua*	0.53	0.42	2.53	5.04		
15	*E. obliqua*	0.85	0.63	3.09	7.56		
16	*E. obliqua*	1.68	1.23	4.12	14.76		

The cut required near tree 11 would most likely result in a health decline. As the soil in this location is shallow, the roots are present in the very upper profile. This cut would critically sever many of the large woody sections. To reduce the impact to minor, I recommend that the excavation is moved away from the centre of the trunk to 8.7m. If this can be achieved, I do not expect there to be any major impacts on the tree population in this location.

Although the paths servicing the artwork will be developed within some tree protection zones, I do not believe that they will have a negative impact. The proposal is to introduce aggregate at the natural ground level. This aggregate will still allow for adequate water penetration to the roots below and therefore I do not see this as an incursion.

4. Tree Protection

During development of this site, it is important that the tree protection zones are fenced off and signs installed to delineate the area. Where there is an incursion into this zone, the fencing should be installed along this alignment. Activities to avoid in this area include:

- Machine excavation including trenching;
- Excavation for silt fencing;
- Cultivation;
- Storage;
- Preparation of chemicals, including preparation of cement products;
- Parking of vehicles and plant;
- Refuelling;
- Dumping of waste;
- Wash down and cleaning of equipment;
- Placement of fill;
- Lighting of fires;
- Soil level changes;
- Temporary or permanent installation of utilities and signs, and
- Physical damage to the tree(s).

5. Risk Management

A risk benefit management policy has been supplied as an annexure to this report. I have based my risk assessment on the expected usage of this site being 120 – 1200 people per day.

The detailed assessments revealed one not tolerable risk tree. This tree should have the dead section removed. The only other tree that was assessed had some dead wood in its crown over a potential path. As this is still well attached, the risk is considered acceptable.

Although the public use will be lower in strong wind events, it may be prudent to consider closures when the Bureau of Meteorology issues a severe weather warning for damaging winds. Alternatively, a weather station could be installed, and closures based on local wind readings. As this site is managed by Parks and Wildlife, consultation on appropriate closure procedures should be considered.

If the site experiences change in use, or becomes a potential event space, I recommend engaging an arborist to undertake a walkthrough inspection to identify any changes in the tree population that may trigger an increase of risk.

6. Conclusion

- **Consideration should be given to reducing the impacts on the tree protection zone of tree 6 within the car park.**
- **The excavation should go no closer than 8.7m from the centre of the trunk for tree 11 near the artwork installation.**
- **One not tolerable risk tree was identified at the site and should have the dead stem removed.**

Yours sincerely,

Alister Hodgman

Appendix 1 – Detailed Risk Assessments

Summary

Black Gum

Highest Risk	**Not Tolerable**
Risk reduction	Remove dead leader
Tree Management	
Review Year	
Date Assessed	2020-10-27 10:13 am
Assessed By	Alister Hodgman
Phone Number	0417144192
Email	alister@elementtree.com.au

Risk

Tree Details and Location

Species	Height (m)	Stem Ø (cm)	Crown Ø (m)
Black Gum *Eucalyptus ovata*	15	45	7

328 Lune River Rd
Ida Bay TAS

Risk Inputs

Likelihood of Occupation

O
4
Low

Consequences

C
1
Very High

Likelihood of Failure

Dead tree with no capacity to produce wound wood	
Black gum can decay rapidly	F
No significant changes around the tree	2 High
Poor compartmentalising species	
Species profile and lack of response growth result in a defect	

Notes

The highest risk is dead wood failure over the path which is not tolerable

Black Gum

Summary

Highest Risk	**Acceptable**
Risk reduction	N/A
Tree Management	
Review Year	**2025**
Date Assessed	2020-10-27 10:36 am
Assessed By	Alister Hodgman
Phone Number	0417144192
Email	alister@elementtree.com.au

Risk

Tree Details and Location

Species	Height (m)	Stem Ø (cm)	Crown Ø (m)
Black Gum Eucalyptus ovata	17	120	12

328 Lune River Rd
Ida Bay TAS

Likelihood of Occupation

Risk Inputs

O
3
Moderate

Consequences

C
3
Moderate

Likelihood of Failure

Decline of vitality but still producing new wood

Broad base with a squat crown

No significant changes around the tree

Poor compartmentalising species but no evidence of substantial decay

Dead wood is only quite recent.

F
4
Low

Notes

The highest risk is dead wood failure over the path which is acceptable

DEVELOPMENT IMPACT ASSESSMENT

Ida Bay Railway

13/05/2022

For: Tim Lathouris
Project Manager, Public Art
Dark Lab

Via email: tim.lathouris@darklab.net.au

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1. Terms of reference

- This report was requested by Tim Lathouris, Project Manager at Dark Lab, to assess potential development impacts at the Ida Bay Railway, 328 Lune River Road, Lune River.

- An assessment of the site was completed from the ground on the 27th of October 2020. A subsequent visit was completed on the 12th of April 2022.
    - The previous application focused on an area further to the south, however this assessment will critique the impacts around the existing tennis court and visitor centre.

- This report will present the inspection findings and provide protection recommendations for the balance of trees to be retained. As the location of the artwork will not be altered, this assessment will primarily focus on the impact around the carparking, turning circle and visitor centre.

- The report directly refers to the Ida bay North Tree Site Survey completed by Darklab, and the Visitor Welcome General Arrangement & Pavement Details completed by JMG (Rev P1).

2. Site Findings

The site has been subject to various phases of use during its European settlement. As a tourism development, I suspect that some trees have been removed, particularly around the buildings and railway.

Around the tennis court there is a number of black gum (E. ovata), stringybark (*E. obliqua*), black and white peppermint (*E. amygdalina* and *pulchella*), the majority of the trees appear healthy and do not present as being unacceptable risks. Although there is the presence of dead branches, the risk is considered acceptable as usage of the site will be reduced during strong wind events, when trees have an increased probability of failure.

There is evidence of fire impacting the site. Although some trees appear damaged, the response growth indicates that this is a historical detail and therefore not a defect.

3. Development Impacts

- Parking and turning circle

Previous impacts around the proposed turning circle include a concrete tennis court which is likely poured on aggregate base. Over the years this has cracked which will have allowed water and oxygen into the profile, in turn supporting the development of roots within the profile.

The proposal for this zone is the removal of the concrete tennis court and formalising the sub-base ready for the installation of the heavy duty bus pavement.

Elsewhere, levels will be raised and additional carparking and turning circles will be installed. It is understood that isolated minor scalping will be required to remove the vegetative layer ready for the installation of a suitable base. Although this may damage fine feeder roots, if completed under supervision, this should avoid structural root zones and therefore tree stability should not be compromised.

The design has aimed to maximise the majority of trees at the site. Based on the current design there is scope to retain all trees excluding 1, 7-10, 15, 17, 28-29, 39-40, 44-56, 58-59, 61-64.

Twelve months post development a reassessment of the site should ascertain which trees, if any, have been negatively impacted by the works.

- Visitor Centre

The visitor centre has been designed to be low impact. The site location has been chosen in consultation with arboricultural input. The post and beam construction has been developed outside of the structural root zone of all the mature eucalypts at the site (fig. 1).

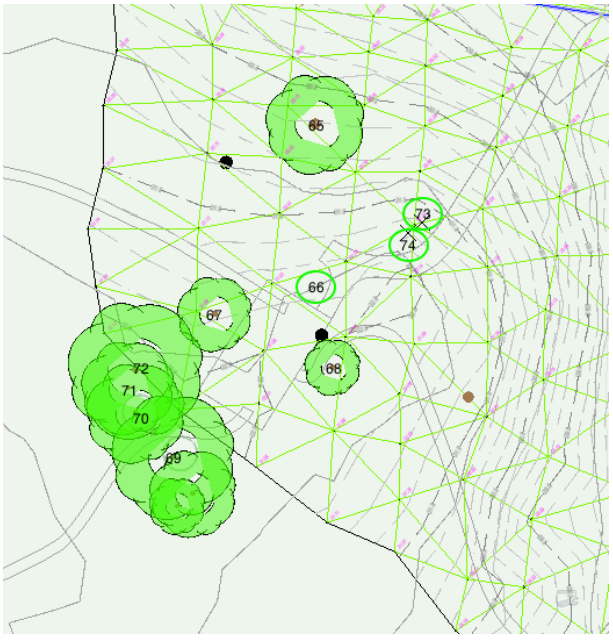


Fig. 1 – the location of the VC relative to the structural and tree protection zones.

If correct tree protection measures are implemented during the development of the visitor centre and associated road, I do not expect there to be negative impact on any of the mature eucalypts at this site.

4. Tree Protection

During development of this site, it is important that the tree protection zones are fenced off and signs installed to delineate the area. Where there is an incursion into this zone, the fencing should be installed along this alignment. Activities to avoid in this area include:

- Machine excavation including trenching;
- Excavation for silt fencing;
- Cultivation;
- Storage;
- Preparation of chemicals, including preparation of cement products;
- Parking of vehicles and plant;
- Refuelling;
- Dumping of waste;
- Wash down and cleaning of equipment;
- Placement of fill;
- Lighting of fires;
- Soil level changes;
- Temporary or permanent installation of utilities and signs, and
- Physical damage to the tree(s).

5. Discussion

The assessment aims to ensure retention of the maximum number of trees as possible, whilst reducing the risk posed by falling trees. Protection of the structural root zone[1] is critically important to ensure that the stability of the tree is not compromised.

It is important that any excavation in these zones is supervised, and if concern is raised regarding root damage, advice from a consulting arborist is sought.

Although the use of permeable surfaces around the turning circle was investigated, in this instance, the benefit to the remaining trees is negligible. Water from the proposed hard surfaces will become available to the remaining population as it is designed to run off towards roots and not diverted elsewhere.

[1] https://as4970calculator.web.app/ a calculator to determine the extent of these zones.

The sighting of the visitor centre encompasses the trees as a visual backdrop but is unlikely to impact the health of the trees. Although there are minor tree protection zone incursions into tree 67, the design is unlikely to result in a decline of the tree as there is adequate space surrounding for the future transition of the roots.

6. Conclusion

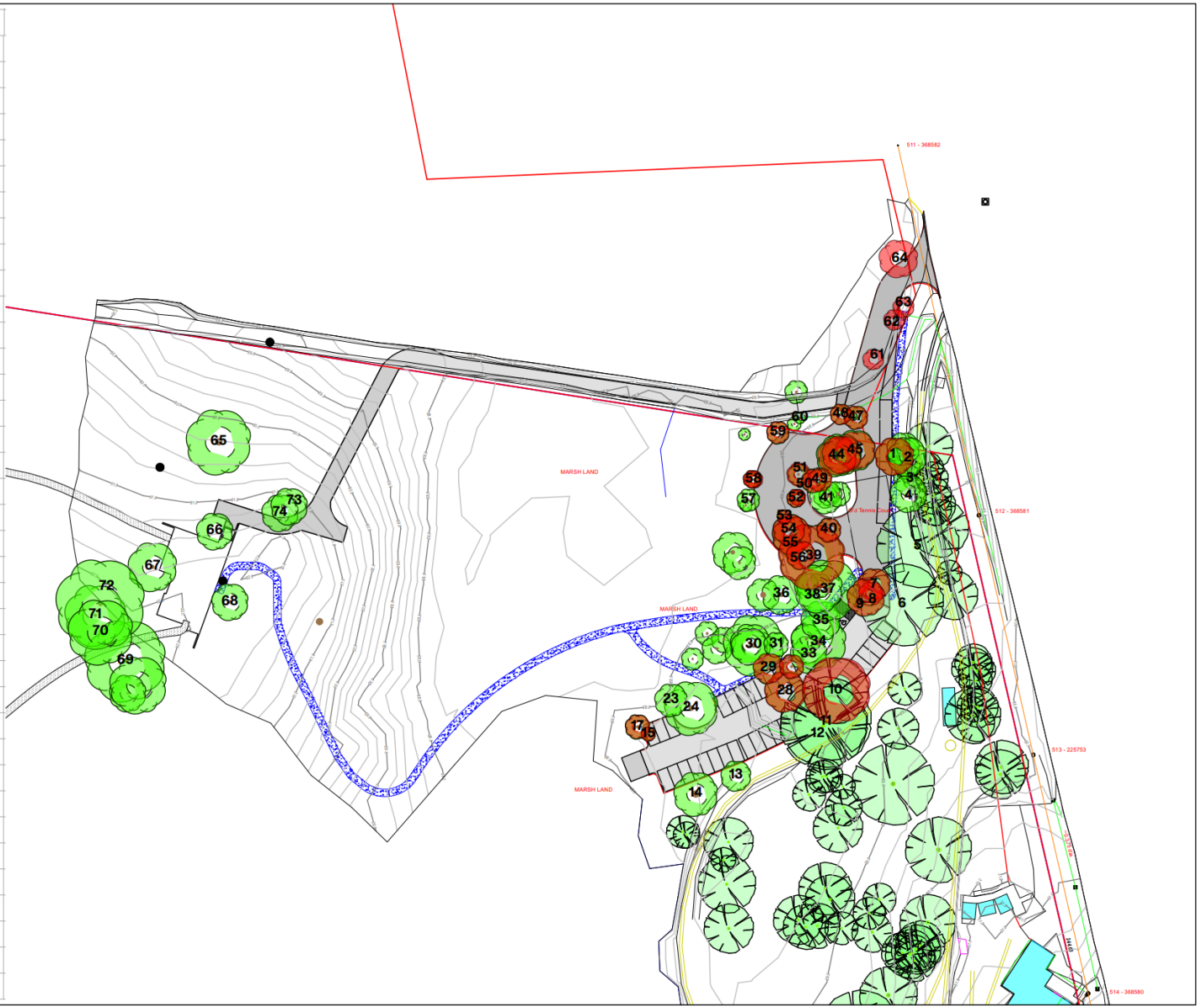
- **The carpark, turning circle and associated works will likely result in the loss of thirty eucalypts. This number may increase but will not be realised until a subsequent inspection post work 12 months later.**
- **If correct tree protection measures are implemented, it is unlikely that there will be any additional impacts as a result of the visitor centre development.**
- **To ensure structural root zones are not impacted, supervision of excavation and civil works is critically important.**

Yours sincerely,

Alister Hodgman

Appendix 1 – Tree Locations

TREE #	SPECIES	DBH	TREE #	SPECIES	DBH
1	E Obliqua	25	38	E Obliqua	56
2	E Obliqua	32	39	E Ovata	48
3	E Obliqua	48	40	E Obliqua	37
4	E Ovata	32	41	E Ovata	40
5	E Obliqua	111	42		
6	E Ovata	113	43		
7	E Obliqua	39	44	E Obliqua	51
8	E Ovata	23	45	E Ovata	35
9	E Obliqua	45	46		
10	E Amigdalina	59	47	E Obliqua	30
11	E Pulchella	83	48	E Obliqua	28
12	E Pulchella	63	49	E Obliqua	25
13	E Pulchella	40	50	E Obliqua	28
14	E Pulchella	77	51	E Obliqua	25
15	E Pulchella	39	52	E Pulchella	20
16			53	E Obliqua	17
17	E Pulchella	69	54	E Obliqua	31
18	E Obliqua	29	55	E Obliqua	33
19	E Pulchella	38	56	E Obliqua	29
20	E Pulchella	39	57	E Obliqua	30
21			58	E Obliqua	20
22	E Pulchella	37	59	E Obliqua	41
23	E Pulchella	45	60	Blackwood	9
24	E Amigdalina	76	61	E Ovata	18
25			62	E Ovata	19
26			63	E Ovata	11
27			64	E Ovata	52
28	E Obliqua	50	65	E Amigdalina	108
29	E Amigdalina	38	66	E Ovata	34
30	E Ovata	57	67	E Pulchella	80
31	E Amigdalina	26	68	E Amigdalina	85
32	E obliqua	32	69	E Obliqua	115
33	E Ovata	42	70	E Obliqua	129
34	E Obliqua	40	71	E Obliqua	73
35	E Amigdalina	50	72	E Obliqua	115
36	E Obliqua	45	73	E Ovata	25
37	E Ovata	60	74	pul	27



PROJECT	Transformer	FILE NAME	Transformer Site Plan 3.0	DATE 12/05/22	VERSION 1.0
DRAWING NAME	Tree Removal	VENUE	328 Lune River Rd Ida Bay	SCALE 1:2500@A3	PAGE
				DRAWN BY Tim Lathouris	DARKLAB