

Reference: AF11/866; AR16/12453

7th April, 2016

MEMBERS

NOTICE is given that the Operational Services Committee will meet in the following Meeting Room on the day, date and time as follows:

Operational Services Committee
(*Conference Room - Level 1*):

Tuesday, 12th April 2016 at 7:30 a.m.

An agenda for the meeting is enclosed.



Grant HUMPHRIES
ACTING CHIEF EXECUTIVE OFFICER

OPERATIONAL SERVICES COMMITTEE

Meeting to be held on Tuesday, 12th April 2016 at 7.30 a.m.

AGENDA

1. COMMITTEES - Internal - Operational Services Committee - re Projects to be undertaken by the Operational Services Department, Engineering Division, during month - Ref. AF11/866
2. ENVIRONMENTAL MANAGEMENT - Caroline Landfill - Request - Waste Receival - Ref. AF11/371
3. HEALTH MANAGEMENT - Joint Ventures - Food Safe Training 2016 - Arrangements - Ref. AF16/54
4. INFRASTRUCTURE - Maintenance - Removal of Pine Trees - Crater Lakes - Ref. AF15/412
5. PROPERTY MANAGEMENT - Arrangements - Request for temporary closure of Valley Lake - Blue Lake Aero Modellers Inc - Ref. AF14/475
6. COMMITTEES - Council Development Assessment Panel - Minutes of Meeting held 17th March 2016 - Ref. AF15/554
7. COMMITTEES - Environmental Sustainability Sub-Committee - Minutes of Meeting held 5th April 2016 - Ref. AF12/377

OPERATIONAL SERVICES COMMITTEE

Meeting to be held in the Conference Room, Operational Services Area, Level One of Civic Centre, 10 Watson Terrace, Mount Gambier, on Tuesday 12th April 2016 at 7.30 a.m.

AGENDA

PRESENT: Cr D Mutton (Presiding Member)
Crs C Greco, P Richardson, F Morello and I Von Stanke

APOLOGIES: moved the apology received from be
accepted.
seconded

COUNCIL OFFICERS: Acting Chief Executive Officer, Grant Humphries
Director Operational Services, Daryl Sexton
Engineering Manager, Daryl Morgan
Team Leader Administration (Operational Services), Sally Wilson

COUNCIL MEMBERS
AS OBSERVERS:

WE ACKNOWLEDGE THE BOANDIK PEOPLES AS THE TRADITIONAL CUSTODIANS OF THE LAND WHERE WE MEET TODAY. WE RESPECT THEIR SPIRITUAL RELATIONSHIP WITH THE LAND AND RECOGNISE THE DEEP FEELINGS OF ATTACHMENT OUR INDIGENOUS PEOPLES HAVE WITH THIS LAND.

MINUTES: moved the minutes of the previous meeting held on
Tuesday, 8th March 2016 be taken as read and confirmed.
seconded

QUESTIONS: (a) With Notice - nil submitted.
(b) Without Notice -

1. **COMMITTEES - Internal - Operational Services Committee - re Projects to be undertaken by the Operational Services Department, Engineering Division, during month - Ref. AF11/866**

Goal: Building Communities

Strategic Objective: The identified needs of the community are met, through implementing Long Term Asset Management Plans and Infrastructure Plans.

The Engineering Manager reported the following works are to be undertaken/are currently being undertaken by the Operational Services Department, Engineering Division, during the month:

<u>Commenced Tasks</u>	<u>% Completed</u>
• Eagle Court drainage improvements	50%
• Tumut Drive footpath construction	50%
• Old Hospital landscaping works (paths and culdesac)	20%

Completed Tasks

- Wireless Road East kerbing and widening

- Penola Road - Wireless Road kerbing / footpath works (traffic signals)
- Umpherston Street footpath construction
- Wehl Street South kerbing
- James Street reconstruction

moved the report be received.

seconded

2. **ENVIRONMENTAL MANAGEMENT - Caroline Landfill - Request - Waste Receival - Ref. AF11/371**

Goal: *Securing Economic Prosperity*

Strategic Objective: *Foster the expansion of commerce and industry in a sustainable manner, considering industry, employment and climate change impacts, and enhance our positioning as the major centre for the region.*

Constantly monitor the need for more revenue to meet demands caused by ageing infrastructure, increased local responsibilities and demands, cost shifting, and our desire for a safer more resilient community.

The Director Operational Services reported:

- Council has received a verbal enquiry from a regional waste collector regarding this Council's attitude to accepting waste collected from within the wider region;
- the total annual tonnage is expected to be in the order of 5,000 tonnes, generating an income to Council in excess of \$500,000 per annum;
- this additional volume will impact on the cell construction and rehabilitation frequency at the Landfill but as revenue exceeds expenditure it is a reasonable business proposition;
- information to hand is that any new arrangement would likely start on 1st September 2016;
- Council has the capacity to deal with this extra volume (it may require some additional labour hours per week - which will be drawn from the existing day labour workforce if required);
- this arrangement would be with the contractor involved, and not the contractors clients. Normal gate charges would apply;
- there will be no immediate impact on cell construction at the Landfill (Cell 3A is required to be constructed in the last of 2016 irrespective of any additional volume of waste being received), but future cell construction is likely to be accelerated marginally.

moved it be recommended

- The report be received;
- Council advise the waste contractor that Council will accept its waste under Council's normal trading terms and conditions.

seconded

3. HEALTH MANAGEMENT - Joint Ventures - Food Safe Training 2016 - Arrangements - Ref. AF16/54

Goal: Community Well-Being

Strategic Objective: Advocate for the health needs of the community by encouraging partnerships in the provision of affordable and viable facilities and infrastructure.

Target/KPI: Support the 'Registered Training Organisation' in the provision of affordable and accessible food safety training for food handlers.

The Community Health Officer reported:

- (a) Council's first subsidised session for volunteers to attend an accredited food safety short course was held on Tuesday, 8th March 2016. Volunteers paid \$5.00 per person to Council, rather than the normal price of \$95.00 per person to Tafe SA (no concessions available);
- (b) Tafe SA provided the group course to Council for a flat fee of \$870;
- (c) 92 volunteers from the Limestone Coast area attended the subsidised training and 38 community groups were represented by volunteers. This is the highest attendance for food safety courses held by Tafe SA and the City of Mount Gambier;
- (d) it is recommended that Council support at least one (1) subsidised accredited food safety short course session in 2016/2017.

moved it be recommended:

- (a) The report be received;
- (b) Council continue to provide support for one (1) subsidised volunteers accredited food safety short course to be held within the 2016/2017 financial year, with funding to come from the Community Health Operational Budget.

seconded

4. INFRASTRUCTURE - Maintenance - Removal of Pine Trees - Crater Lakes - Ref. AF15/412

Goal: Environment

Strategic Objective: Plan and implement infrastructure to protect and enhance the natural and built environment, including in response to climate change influences.

Support the preservation and enhancement of the City's unique natural and built heritage for future generations.

The Manager Regulatory Services reported:

- (a) Council would be aware there is an allocation of \$100,000 on the 2015/2016 budget to remove diseased pine trees on the north/west slope of Mount Gambier adjacent to the Centenary Tower - referred to as the Centenary Tower Pines. This allocation was made based on the recommendations of an inspection and report produced by Diana Lloyd and Dr Charlma Phillips in May 2013 (refer attached);

- (b) partial or total removal of the plantation will involve consultation and possibly approvals from State Heritage and timely information being provided to adjacent land owners and the broader community;
- (c) Council Officers have engaged with well respected, local forester, Lew Parsons (of Wokurna Forestry), to analyse the trees and provide options for removal strategies given the complexity of the sloping site, the sheer size of the trees and the proximity to pedestrian tracks. It is also important to note the plantation is covered in the Crater Lakes Conservation Management Plan and is recommended to be retained in the long term;
- (d) Wokurna Forestry have indicated the disease has stabilised and not spread significantly to more trees since the initial inspection in 2013. The report (refer attached) recommends the plantation should be 'hygiene thinned' rather than removed because most (around 54%) of the trees are healthy;
- (e) hygiene thinning is a cost effective and less invasive process where dead and poor form trees are manually felled (because it is impossible with large machinery on this site) and shredded on site where possible. Those trees felled where shredding is impossible or costly will be trimmed and left to gradually rot over time;
- (f) the trees left on site following this process would be on average 64cm diameter and leave an appropriate 'park like' setting on the mountain slope. This plantation is likely to last many more years in this state;
- (g) the approximate cost to conduct the felling, shredding and trimming of dead and poor form trees is \$150,000. This is specialised work and it is recommended by Wokurna Forestry to be carried out by All Trees All Stumps (Brenton English) as he has the previous experience and the equipment required for working in the area. All Trees All Stumps are pre-qualified with Council and have experience working in the Crater Lakes felling large pine trees;
- (h) the Director Operational Services supports the recommendation of Wokurna Forestry to use local contractor All Trees All Stumps because of their extensive experience in past years felling pine trees in the Lakes area. This is complex work in very difficult terrain and the work is not "main stream" tree felling. If Council do not wish to nominate a contractor then a public tender can be utilised, and this will require a detailed specification and tender process to be implemented.

moved it be recommended:

- (a) The report be received;
- (b) Council develop and implement a media strategy to engage with the adjacent land owners and the broader community;
- (c) Council Officers be authorised to contract with All Trees All Stumps to conduct felling trials on site, focussing initially on the high traffic areas, up to the current budget allocation of \$100,000.

seconded

5. PROPERTY MANAGEMENT - Arrangements - Request for temporary closure of Valley Lake - Blue Lake Aero Modellers Inc - Ref. AF14/475

Goal: Building Communities

*Strategic Objective: Encourage the empowerment of the community to lead and self manage their respective desires and aspirations.
Encourage the development of community facilities and infrastructure, community events, and active and safe community spaces through direct support, seeking funding, facilitation etc.*

The Director Operational Services reported:

- (a) Council has received a request (refer attached) from the Blue Lake Aero Modellers Inc to hold an inter club model aircraft float fly event at the Valley Lake on Saturday, 30th July and Sunday, 31st July 2016;
- (b) this event will involve the flying of model aircrafts over and on the Valley Lake waters and as such will require the Valley Lake waters to be closed to the general public during the period of the event.

moved it be recommended:

- (a) The report be received;
- (b) Council authorise the closure of the Valley Lake waters to the general public to allow the Blue Lake Aero Modellers Inc to hold an inter club model aircraft float fly event on Saturday, 30th July and Sunday, 31st July 2016;
- (c) the event organiser be advised of the above and requested to submit the appropriate documentation (including public liability insurance) to Council.

seconded

6. COMMITTEES - Council Development Assessment Panel - Minutes of Meeting held 17th March 2016 - Ref. AF15/554

Goal: Governance

Strategic Objective: Demonstrate innovative and responsible organisational governance.

moved it be recommended:

- (a) Minutes of the Council Development Assessment Panel meeting held on Thursday, 17th March 2016 be received;
- (b) the decisions made by the Council Development Assessment Panel be noted.

seconded

7. COMMITTEES - Environmental Sustainability Sub-Committee - Minutes of Meeting held 5th April 2016 - Ref. AF12/377

Goal: Governance

Strategic Objective: Demonstrate innovative and responsible organisational governance.

moved it be recommended:

- (a) Minutes of the Environmental Sustainability Sub-Committee held on Tuesday, 5th April 2016 be received;
- (b) the following recommendations (number 1 to 4) of the Environmental Sustainability Sub-Committee be adopted by Council:

2. ELECTRIC VEHICLES OPPORTUNITIES

- The report be received and contents noted.
- Council provide Alan Richardson with a copy of this report.

2. CITY OF MOUNT GAMBIER 2016 WASTE AUDIT RESULTS

- The report be received.
- Investigate implementing a more stringent penalty system for contaminated bins.
- In February 2017 conduct a targeted waste audit to ascertain the results of the 2016-2017 kitchen caddy trial.

3. COUNCIL CARBON EMISSIONS - POTENTIAL FOR CARBON NEUTRALITY

- The report be received.
- The Committee recommend to Council that as from 1st July 2017, the City of Mount Gambier endeavour to operate in a carbon neutral environment, including a possible levy and on landfill customers to offset carbon emissions from the landfill.

4. REPORTS FOR INFORMATION

- The current table outlining projects for 2016 (as attached to the Environmental Sustainability Sub-Committee agenda) be received and noted for information.

seconded

MOTIONS WITHOUT NOTICE -

The meeting closed at _____ a.m.
AF11/866
SW

Thursday, 30 May 2013

Mr Michael Silvy
 Manager Regulatory Services
 City of Mount Gambier
 PO Box 56
 Mount Gambier, SA 5290

Dear Michael

Centenary Tower pines dieback

I refer to you email May 28 2013 with respect the Centenary Tower pines dieback. I also refer you to a report I prepared for Council (Appendix 1) on June 13 2007 on the same pine plantation.

Yesterday, I conducted a site inspection of Centenary Tower pines with Dr Charlma Phillips (Entomologist and Forest Health Scientist). A series of photos are appended to this report and are referred to in the discussion below.

The following observations were made:

- There is clearly visible dieback in the plantation on the westerly aspect. In the central part of the plantation there appears to be approximately 70 percent affected. Over the whole area approximately 30 percent of the area is affected. (Appendix 2, photos 1-3)
- The dieback is characterised by dead or dying crowns of the trees (currently visible as orange). After inspection, this was considered to be Diplodia. (Appendix 2, photo 4) This is consistent with outbreaks in other plantations in the region.
- There was also evidence of the impacts of drought on the plantation. Dead or dying (yellowing) tips of needles. (Appendix 2, photo 5)
- The plantation is of poor form and in poor condition. (Appendix 2 photo 6-8)

The site inspection determined that the cause of the dieback in the Centenary Tower pines was as a result of Diplodia and the impacts of drought. Diplodia is a fungus which has thrived due to weather patterns characterised by wet periods followed by warm weather. The unthinned nature of the plantation has provided an ideal opportunity for Diplodia to build up.

There are similar cases of this dieback in commercial plantations in the region. Commercial plantations can be thinned allowing greater air flow and creating a less favourable environment for the fungus. At Centenary Tower this is not a viable option as the plantation is steep, poor quality and thus non-commercial.

The areas now visible as orange will die and it can be expected the whole tree will die and eventually fall over. The impact of this is that there will be holes in the plantation. Remaining trees may become less stable and as a consequence also fall over. The Council needs to consider the risk of trees falling in this area and the visible impact of holes in the plantation.

The plantation also displayed signs of drought. This was noted back in 2007 and is not surprising given the high stocking and the size and age of the trees on site and the weather patterns in recent years. This may result in higher susceptibility to diseases and/or death of trees from lack of moisture.

Generally, the plantation growing on Centenary Tower is in poor condition and will continue to deteriorate. The trees are old and are at the point where they are showing signs of poor health and some have recently died or fallen over.

Council should consider its long term plans for the site in the context of the current outbreak of Diplodia and deaths due to drought. The pines will continue to deteriorate and will die and fall over in an unpredictable pattern. Consideration should be given to removal of the pines from the site to remove the risk of trees falling unpredictably.

In conclusion:

The dieback at Centenary Tower is as a result of a combination of drought and Diplodia. The implications of this are that trees will die and fall over within the plantation, destabilising the remaining trees. Diplodia is a fungus and is present in many commercial plantations in the region. There is no treatment to “heal” the outbreak. The infection occurred some time ago (probably months) and there is no way of predicting where an outbreak will occur.

The Centenary Tower plantation will continue to show signs of drought and consequent tree deaths, as it is old and overstocked. Diplodia will result in tree deaths but a new outbreak will require the weather conditions to be wet and warm.

The plantation will become less stable over time and in the past six years since the last inspection this was clearly visible. Council should consider its long term plans for the area and consider removal of the plantation.

Yours sincerely

Diana Lloyd

0408399019

Appendices:

1. Report to Council June 13 2007
2. Photos 1- 8

Wednesday, 13 June 2007

Mr Daryl Sexton

Manager of Operational Services

City of Mount Gambier

Dear Daryl

Pines above Cemetery

Thank you for the opportunity to comment on the state of health of the pine plantation above the cemetery and backing onto Tenison Drive.

I have inspected the site to evaluate the health and condition of the plantation. Trees and plantations are part have a natural lifecycle which is subject to variability based on a range of factors some likely and manageable and others which can be unpredictable. Therefore this appraisal is made in this context.

The pine plantation in question is approximately 10 hectares in size and occupies what would be considered in the Limestone Coast to be a fairly steep site. The plantation is estimated to be around 40 years old based on the site the tree size and apparent lack of management. The plantation appears to be "unmanaged". This has implications for the future management options of the site.

The plantation is open grown and thus the trees are of poor quality from a timber perspective due to their branches being large and still being held on the main trunk.

Recent deaths within the plantation are clearly visible and are most likely to have been as a result of drought. This is an indicator of the site being over stocked. The implications of this are the likelihood of trees falling over causing damage to other trees and possible instability, as well as being visually unappealing.

Drought deaths combined with the thin poor crown color indicate the site needs active management to improve and maintain the site's health. A minimum of thinning and fertilizing would be required.

Trees grown on steep slopes are by their nature less stable than trees grown on flatter sites and this must be considered prior to determining activities on the site. However, should the site be left unmanaged more tree deaths are likely.

The site is relatively unused by the public. Although there is a track from the cemetery to Centenary Tower, it appears that walkers to the Tower use other tracks preferentially. It was noted that the track

could be driven and walked from cemetery to Tenison Drive without restriction or signage. Given its steepness and the recent tree deaths within the plantation the track accessibility to the public should be reviewed with the expectation of limiting its accessibility to public vehicles and/or signage erected indicating the risks.

This appraisal evaluates the plantation as a whole and does not and should not be seen as a strategy for individual trees. This is of particular relevance when determining strategies for managing the trees backing onto the houses in Tenison Drive. It would be recommended to engage the services of a tree surgeon or domestic tree expert for such an appraisal.

The plantation is of poor quality and its value is arguably visual rather than its timber value. Plantations can be managed to occupy a site for long periods of time with continued and careful management.

This site requires active short-term management to re-establish its health for the long-term, should this be Council's strategy. Any management strategies should consider the costs of operations and the availability of appropriate and cost effective machinery to undertake any planned operations.

I trust this provides Council with an appraisal of the plantation above the cemetery. There are a range of management options available to Council and I would be happy to assist in developing any Council sees fit to pursue.

Yours sincerely

Diana Lloyd B.For.Sci, MA, GAICD

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Mount Gambier SA 5290

87399284

dianalloyd@bigpond.com

Appendix 2 - Photos 1- 8

Photo 1 – Centenary Tower pines above the native vegetation planting appear not to be suffering dieback



Photo 2 – Dieback is clearly visible in the central portion of the plantation



Photo 3 – Close up of the dieback. The tree tops have turned orange as a result of Diplodia.



Photo 4 – Diplodea is characterised by death of the tree tips.



Photo 5 – The tips of the needles have died off (orange colour). This is a typical symptom of trees suffering from drought.



Photo 6, 7 and 8 – General condition of plantation is poor.







HYGIENE THINNING OPTION FOR CENTENARY TOWER PINES

Prepared for



City of
Mount Gambier

Prepared by

Lew Parsons

Director

Wokurna Forestry Pty Ltd

March 2016



WOKURNA FORESTRY

1. Summary

Wokurna Forestry has been asked to proceed with further development of the Hygiene Thinning option for the Centenary Tower pines. This was to include measuring some ground-based sample plots and getting drone-based aerial photographs and mapping produced.

The objective was to determine actual standing stocking and percentage of tree deaths, to refine the cost estimates for Hygiene Thinning.

Five 0.1 hectare plots were established across the plantation, covering a range of sites from North to South. Most were located on the mid-slope of the site. The slope of the land was measured in each plot and ranged from 20 degrees (20°) to 32°, averaging about 25°. This is significantly steep.

The trees in each plot were counted and segregated into:

- Live green trees which would stay.
- Live green trees which would be removed because of poor form, size or lean.
- Dead trees, to be removed.

The average stocking of each type of tree is shown in the following table:

	Total trees/ha	Live trees/ha to stay	Live trees/ha to remove	Dead trees/ha to remove	Dead trees as % of total	Total trees to remove	Total trees to remove as % of total
Average	188	102	38	48	26%	86	46%

If the good live trees remained, there would be a stocking of approximately 100 trees/ha with an average diameter of 64 cm. This would be a reasonable “parkland” stocking and the trees should be large and healthy enough to maintain a viable stand. However, the percentages of deaths in the sample plots ranged from 5% to 55% for an average of 26%. The sites with higher dead percentages will be lightly stocked and may appear as clearings. The aerial photo shows that these high mortality areas only comprise about 1.1 ha or 12% of the total area.

An aerial survey of the plantation was carried out and this showed the dead trees very well. Tree mortality could be stratified into 3 Classes:

Class 1	<20%	8.0 ha	71%
Class 2	20-30%	1.9 ha	17%
Class 3	>30%	1.4 ha	12%

This showed that 71% of the plantation had relatively few deaths (<20%) while the high mortality area was a relatively small percentage (29% of area with >20% mortality)

Based on the manual samples, total number of trees to be felled is 977, with an estimated weight of 2,430 tonnes.

Estimated cost to manually fell the trees is \$101,600.

Estimated cost to shred these trees on the slope is \$107,800. However, it is questionable whether this is feasible due to the slope of the site. If used, shredding should only be necessary in the high mortality sites.

An option is for the fallers to trim the tops of the trees right out, leaving the stem across the slope and stabilized by the remaining trees. In the lower mortality sites this should be sufficient to reduce the visible slash load and allow the stems to rot away over a number of years. This would cost about \$20,200, which is considerably cheaper than the shredder. Total cost for felling and trimming would be approximately \$121,800.

Realistically we may use a mix of shredder and trimming depending on access. If so, total cost is likely to be about \$140,000.

It would be advisable to carry out some small trials to test the feasibility of these options. These should include any dead trees which are close to the edge tracks, for public safety reasons, and two sites within the plantation with different percentages of dead trees, one high and one low.



The aftermath of 2 dead trees falling within "striking distance" of the access track.

2. Background

City of Mount Gambier has requested that Lew Parsons, director of Wokurna Forestry, assist it with advice on possible options for management of the Centenary Tower pines.

Wokurna Forestry delivered a report Management Options for Centenary Tower Pines, dated 4th February 2016. Following discussion with Daryl Sexton and Michael Silvy on 8th February, Michael Silvy wrote (ref AF11/1547) and requested that Wokurna Forestry proceed with further development of the Hygiene Thinning option. This was to include measuring some ground-based sample plots and getting drone-based aerial photographs and mapping produced.

The objective was to determine actual standing stocking and percentage of tree deaths. This detail is to be used to refine the cost estimates for Hygiene Thinning in the earlier report.

3. Ground-based Sampling.

3.1 Process

Five 0.1 hectare plots were established across the plantation, as shown in the following Sample Plot Map.



Mount Gambier Pines February 2016

Contour 10m

Sample Plots (40m x 25m)



0 50
m



Name: Mount Gambier PinesC
Date: 28/02/2016
Produced for: Wokurna Forestry
Produced by: Flying ant GIS

The Sample Plots ranged from plot 1 which was in the northern section of the plantation which is cut off by the access track, with plots 2 to 5 on the mid-slope of the plantation with plot 5 to the west of Centenary Tower.

The slope of the land was measured in each plot and ranged from 20 degrees (20°) in plot 1, 25° in plot 2 and between 28° and 32° for plots 3, 4 and 5. This is significantly steep. Normal logging in this region does not extend beyond 20° .

The trees in each plot were counted and segregated into:

- Live green trees which would stay.
- Live green trees which would be removed because of poor form, size or lean.
- Dead trees, to be removed.

The photographs below show samples of the three classes of trees. Note that the live trees to stay are typically reasonable form and good size. The green trees to be removed are usually smaller as they are suppressed and often are poor form or have broken tops.



Live green tree to retain.



Live green tree to remove due to poor form.



Dead trees to remove.

The diameter of each tree was also measured at 4.2 m above up-slope ground level, recorded as Diameter Breast Height (DBH), in centimetres.

The number of trees in each plot was converted to a number of trees/hectare (tph) and is shown in the following Table 1:

Table 1. Trees per hectare.

Plot	Total trees/ha	Live trees/ha to stay	Live trees/ha to remove	Dead trees/ha to remove	Dead trees as % of total	Total trees to remove	Total trees to remove as % of total
1	120	70	40	10	8%	50	42%
2	190	100	40	50	26%	90	47%
3	200	80	10	110	55%	120	60%
4	210	110	40	60	29%	100	48%
5	220	150	60	10	5%	70	32%
Average	188	102	38	48	26%	86	46%

3.2 Range of values

The average values of most factors are quite reasonable. For example, the average number of live trees to remain is 102/ha, which would be a reasonable “parkland “ stocking. Normal forest stocking after several thinnings would be 200 to 250. However, the residual stocking in some plots would be significantly below average, for example plot 1 at 70 tph and plot 3 at 80 tph. Plot 5 at 150 would be significantly higher and more live green trees would be removed to come closer to a target of 100 tph.

Similarly, dead tree percentage at an average of 26% is quite acceptable for removal, but this value varies from 5% in plot 5 to 55% in plot 3. It was expected that the aerial photographs should allow us to stratify the varying grades of tree deaths and then we can manage the tree removal to come closer to a residual live tree stocking of 100 tph.

The average values of stocking and removal should adequately reflect an average of the stand and will be suitable for financial estimates.

3.3 Diameter

The diameter breast height (DBH) of all standing trees was measured.

Table 2 shows the average DBH values for each plot and an overall average.

Table 2. Tree Diameter.

Plot	DBH All trees cm	DBH Live trees to remain cm	DBH Live trees to remove cm	DBH Dead trees to remove cm
1	64.9	62.5	70.8	57.8
2	60.7	66.5	57.1	52.2
3	57.7	65.6	50.6	52.6
4	58.2	63.4	52.8	52.2
5	59.5	64.1	51.0	41.6
Average	59.8	64.4	56.8	52.2

This shows that the average DBH of the live trees to remain is 64.4 cm, which is a good size. The actual tree-by-tree samples show that the remaining tree diameters range from 38.8 to 85.2 cm, but 61% of the remaining live trees will be between 55 and 75 cm DBH, which is a good size for stability and viability.

The average DBH of the live trees to be removed (56.8 cm) and dead trees to be removed (52.2 cm) shows that if these are felled mechanically a large feller buncher will be required. This is even further emphasized if we look at the diameter required to cover 90% of all trees. For the live trees to be removed this is 80 cm while for the dead trees to be removed it is 65 cm.

4. Aerial Survey.

The aerial survey showed the dead trees very well. They appear better on a screen view of the file but the attached Aerial Survey printed map shows them well.



Mount Gambier Pines February 2016



0 50 m



Name: Mount Gambier Pines2C
Date: 27/02/2016
Produced for: Wokurna Forestry
Produced by: Flying ant GIS

It is apparent that the dead trees vary in density over the site, which was picked up in the manual sample plots. The area near Plot 3 is very bad, which is in the center of the plantation, about 300 metres from the northern end. About 55% of the trees in this area are dead, so when removed this will be a significant clearing. However about 80 good live trees per hectare will remain, which is enough to provide a reasonable stocking. The stand will look like a plantation, not scattered trees.

The aerial photo allows stratification of the plantation into a range of 3 mortality classes and the measurement of the area of each. This stratification is shown on the attached Mortality Class map. The mortality classes and their areas are:

Mortality Class	Percentage of Deaths	Area
1	<20%	8.0 ha
2	20-30%	1.9 ha
3	>30%	1.4 ha
Total		11.3 ha

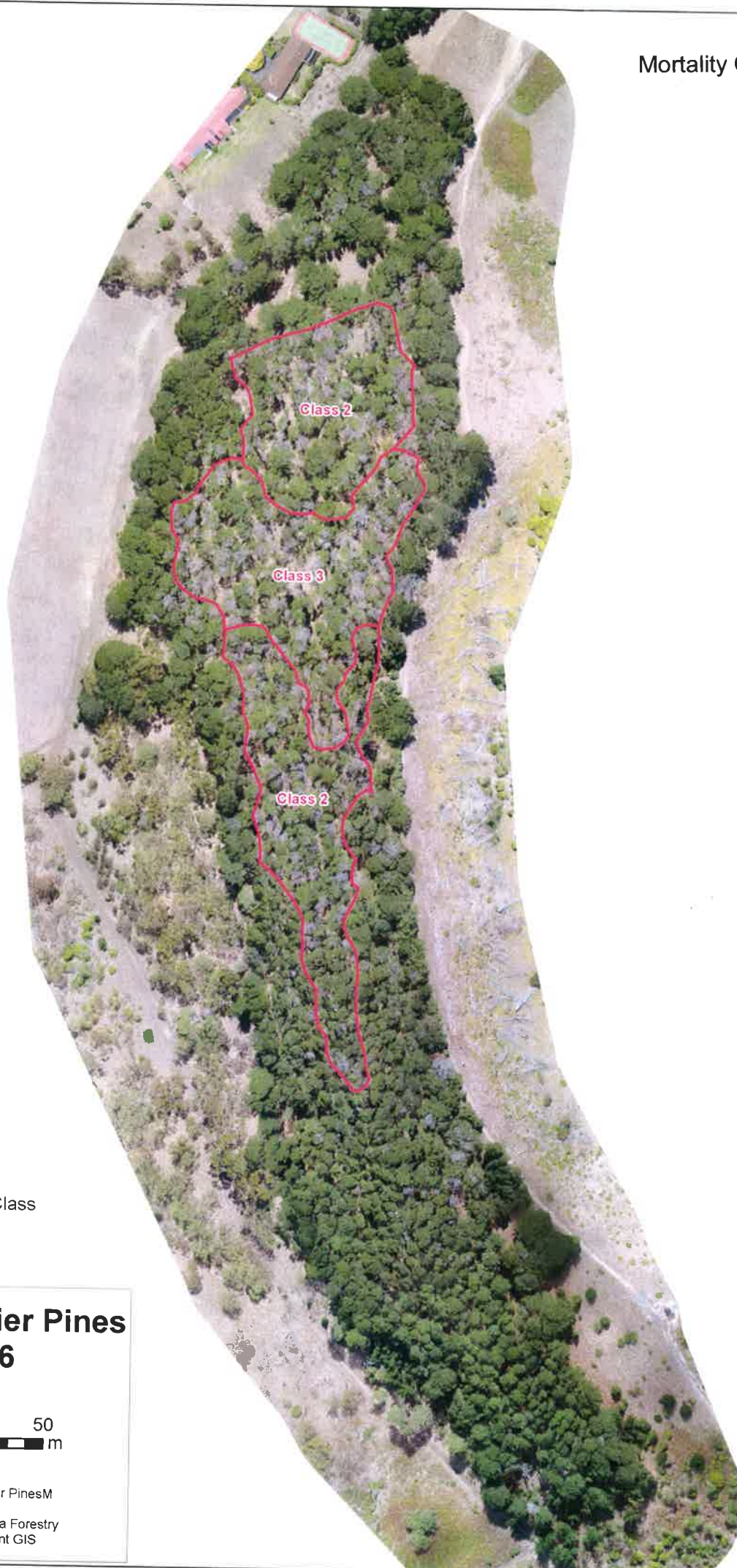
This shows that, while the Class 3 area has significant deaths, it is a relatively small proportion of the total area, at 1.4 ha or 12%. Therefore, if felling the dead and ineffective trees does create an area of low stocking, it will be relatively small.


It also shows that most of the plantation, about 8.0 ha or 71%, has less than 20% deaths and therefore will not be greatly affected by felling the dead and ineffective trees.

Using the mortality class process and multiplying the areas of each class by a median mortality, ie 10% for Class 1, 25% for Class 2 and 50% for Class 3, the average mortality over the total plantation is approximately 17%. This is a little less than the 26% shown above in Section 3.1, which was the average of the sample plots. Therefore using the figures from the sample plots is probably an over-estimate of trees to be removed but I have chosen to use the stockings and percentages from Section 3.1 as a "worst case" scenario for estimating costs.

The Mortality Class map is attached.

Mortality Class Map



 Mortality Class

Mount Gambier Pines February 2016



0 50
m

Name: Mount Gambier PinesM
Date: 23/03/2016
Produced for: Wokurna Forestry
Produced by: Flying ant GIS

5. Cost Estimate for Hygiene Thinning.

Based on the figures from the ground sampling, over the total plantation area of 11.3 ha, we have to remove 86 trees per hectare, to leave a stocking of 102 live green trees per hectare. Total trees to remain is 1,150.

Total number of trees to be felled is 977, with an estimated volume of 2,430 tonnes. Spread over the total area this is equivalent to 215 tonnes/ha which is fairly high.

Estimated cost to manually fell the trees is \$101,600. This is based on 2 fallers and a machine for pulling the very dead trees, felling 3 trees/hour.

It will be necessary to mark the trees to be removed so that the residual stocking can be maintained. This will cost approximately \$3,000.

Estimated cost to shred these trees on the slope is \$107,800. However, carrying out the manual inventory has highlighted how steep the slope is. It will need a very good machine, with some form of self levelling, to carry the shredder to these trees. Alternatively, a long cable could be used to short-skid the trees to a clearing where the shredder can access them. Either way this will be an expensive, difficult and risky process.

However, if the fallers can trim the tops of the trees right out, leaving the stem across the slope and stabilized by the remaining trees, then this may be sufficient to reduce the visible slash load and allow the stems to rot away over a number of years. This would cost about \$20,200, which is considerably cheaper than the shredder. This process will require considerable care by the fallers to avoid the trees rolling on them as the branches are removed. The fallers will have to work from the up-hill side of the tree.

It would be advisable to carry out a small trial of felling the trees to be removed and trimming out their stems so that this "minimalist" approach can be assessed.

The Mortality Class map shows that the worst areas will be relatively small so maybe shredding can be concentrated in the areas of high mortality and the "minimalist" approach can be carried out over the majority of the stand which has low mortality.



Dead tree which has fallen. Note rotten roots and large solid branches still attached.

If it was decided to remove all the felled stems from the site, delimb and dock them up, chip the branches, forward out the logs, chip them and sell them for biofuel, estimated costs would be:

Manual fell	\$101,600
Extraction	\$112,900
Delimb and dock	\$83,800
Forward stems to dump	\$17,000
Chip	\$26,700
Transport to mill	\$22,500
Sale value of chip	-\$36,500
Total cost	\$328,100

This really doesn't seem a viable alternative to manual felling, trimming and leaving to rot at about \$124,800 or manual felling and shredding the stems on the slope at \$212,500.

The detailed costing calculations are attached as Annexure 1.

6 Conclusions.

The manual sampling indicates that the average standing stocking is 188 trees/ha, of which 102 (54%) are live and of good enough quality to leave, 38 (20%) are live but of poor form, leaning or split and would be removed and 48 (26%) are dead and should be removed. This will leave a reasonable stand of live trees at "parkland" stocking of about 100 trees/ha. Average diameter of these trees would be 64 cm, so they would be quite large trees.

In the sample plots there is a large range of percentages of dead trees, from 5% to 55%, with an average of 26%. Therefore, if all dead trees are felled, some sites will be lower stocked than others. This can be compensated to some degree by leaving more of the live but poor quality trees in the sites with high percentages of deaths, but these sites will inevitably have low stockings of good live trees. If there are more deaths in the future these sites may become "clearings" and it would be possible to replant these sites early, either with pines or natives.

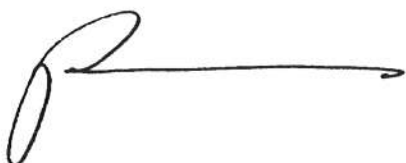
The total cost to manually fell the trees to be removed is approximately \$104,600.

Initially I thought it would be feasible to shred all trees on the slope but having walked up there measuring sample plots I think this may be unrealistic. It may be possible to shred a portion of the trees where they are near to the tracks or they can easily be pulled out. Where this isn't possible it would be adequate to just manually trim the trees to remove all branches, and leave the stem on the site to rot. The trimming will allow the stem to lie on the ground and it will reduce the slash level, so it will be better than doing nothing.

Estimated cost to trim all the trees is \$20,200, while cost to shred all trees is \$107,800.

A combination of the two might cost about \$40,000, so adding the felling cost would give a total cost of about \$145,000.

It would be advisable to carry out some small trials to test the feasibility of these options. These should include any dead trees which are close to the edge tracks, for public safety reasons, and two sites within the plantation with different percentages of dead trees, one high and one low.



Lew Parsons
Director
Wokurna Forestry

Contact details:

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23 March 2016

Annexure 1

Indicative Costing of Hygiene Thinning of Centenary Tower pine plantation.

Resource data

Area	11.3 ha
Plantation year	1940
Age	76
Stems/ha	188
Live to remain %	54%
Live to remove %	20%
Dead %	26%

Number of trees

Total standing	2,124
Live to remain	1,147
Live to remove	425
Dead to remove	552
Total to remove	977

Tonnes/tree

Total standing	3.3
Live to remain	3.9
Live to remove	2.6
Dead to remove	2.4
Total to remove	2.5

Total Tonnes

Total standing	6,904
Live to remain	4,474
Live to remove	1,105
Dead to remove	1,326
Total to remove	2,430

Felling Cost

Manual

Cost per hour	
Fallers	2
Faller rate /hour	\$31.00
Machine, inc operator	\$250
Total cost/hour	\$312
Trees/hour HT	3
Total hours, HT	326
Total cost, HT	\$101,631

Manual trimming on slope

Fallers	2
Faller rate /hour	\$31.00
Total cost/hour	\$62
Trees/hour HT	3
Total hours, HT	326
Total cost, HT	\$20,196

Extraction

Fallers	2
Faller rate /hour	\$31.00
2 Machines, inc operators	\$400
Total cost/hour	\$462
Trees/hour HT	4
Total hours, HT	244
Total cost, HT dead	\$112,869

Delimb & dock

Fallers	3
Faller rate /hour	\$31.00
Chipper & Excavator, inc 1 operator	\$250
Total cost/hour	\$343
Trees/hour HT	4
Total hours, HT	244
Total cost, HT	\$83,797

Forward logs to dump

Rate/tonne	\$7.00
HT tonnes	2,430
Total cost, HT	\$17,012

Chip at Dump

Rate/tonne	\$11.00
HT tonnes	2,430
Total cost, HT	\$26,733

Transport chip

Rate/tonne dead chip	\$9.25
HT tonnes	2,430
Total cost, HT	\$22,480

Shredding on slope

Observer	1
Observer rate /hour	\$31.00
Shredder/Excavator, inc operator	\$300
Total cost/hour	\$331
Trees/hour HT	3
Total hours, HT	326
Total cost, HT	\$107,820

Sale Value of Products

Tonnes of HT chips	2,430
Sale Price of HT chips \$/t	\$15.00
Sale value of HT chips	\$36,455

Total Cost of Options**Hygiene Thinning**

Manual Felling	\$101,631
Shredding on slope	\$107,820
Manual Fall + shredding	\$209,452

Manual Felling	\$101,631
Manual trimming on slope	\$20,196
Manual fall + trim	\$121,827

Extraction	\$112,869
Delimb and dock	\$83,797
Forward logs to dump	\$17,012
Process Sub total	\$213,679

Chip	\$26,733
Transport chip	\$22,480
Revenue from sale of chip	\$36,455
Chip Sub total	\$12,759

Manual fell, process & chip	\$328,069
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Mr Mark McShane

Chief Executive Officer

City of Mount Gambier

3rd April 2016

Dear Mark,

Blue Lake Aero Modellers the local model aircraft club are seeking permission to use the Valley Lake for a weekend, inter club model aircraft float fly.

Over the past two years we have conducted this event on the second full weekend in May at Lake Leake with the permission from the Glencoe Progress Association in conjunction with the Wattle Range Council. The event is highly regarded with aero modellers travelling from as far away as Adelaide and Geelong.

This year we are looking at holding it on the 30th and 31st of July (the last full weekend of July) and as such we are seeking permission to use the Valley Lake in lieu of Lake Leake as it is dry and unsuitable.

I have attached the newsletter and photos of last year's event for you to view and if you would like to expand on any concern of this request please feel free to contact either myself or the president at any time.

Yours Faithfully,

Gary Harris

Secretary: 0408 684 433

Martyn Black

President: 0417 872 404

COUNCIL DEVELOPMENT ASSESSMENT PANEL

Meeting held on Thursday, 17th March 2016 at 5.45 p.m. in the
Conference Room, Level One - Operational Services, Civic Centre

MINUTES

PRESENT: Cr C Greco, Cr M Lovett, Cr I Von Stanke, Ms E Finnigan, Mrs M Trotter and Mr P Seebohm

APPOINTMENT OF ACTING PRESIDING MEMBER: The Senior Planner invited nominations for the position of Acting Presiding Member for this meeting of the Council Development Assessment Panel due to the absence of Mrs E Travers.

Cr Lovett nominated Cr Greco to be Acting Presiding Member of this meeting.

There being no further nominations, Cr Greco was elected as Acting Presiding Member of the Council Development Assessment Panel for this meeting only.

Carried

The Acting Presiding Member took the chair for the following business:

APOLOGY/IES: Cr Lovett moved the apology received from Mrs Travers be accepted.

Ms Finnigan seconded

Carried

COUNCIL OFFICERS: Senior Planner, Simon Wiseman
Administrational Officer - Operational Services, Sarah Moretti

WE ACKNOWLEDGE THE BOANDIK PEOPLES AS THE TRADITIONAL CUSTODIANS OF LAND WHERE WE MEET TODAY. WE RESPECT THEIR SPIRITUAL RELATIONSHIP WITH THE LAND AND RECOGNISE THE DEEP FEELINGS OF ATTACHMENT OUR INDIGENOUS PEOPLES HAVE WITH THE LAND.

MINUTES: Cr Lovett moved that the minutes of the Meeting held on Thursday, 21st January 2016 be taken as read and confirmed.

Mr Seebohm seconded

Carried

1. Development Number: 381/044/2016
Applicant: Thomson Bilt
Owner: D & W Kuhlmann
Description: To construct a carport in front of an existing dwelling
Address: 7 Cheyenne Court, Mount Gambier
Nature of Development: Consent / Category 1
Zoning: Residential
Report: Council Development Assessment Panel Report No. 4 / 2016
Correspondence: Letter from Applicant

The Council Development Assessment Panel moved it be recommended:

- (a) Council Development Assessment Panel Report No. 4 / 2016 be received;
- (b) The Applicant and Owner be advised that having regard to the Development Plan and all supporting documentation, the proposed development is considered to be at serious variance with Council's Development Plan. The Council Development Assessment Panel is

not willing to support the application and the application is refused Development Plan Consent.

(c) The reasons for the Council Development Assessment Panel's decision are:

1. Development is not consistent with the Desired Character for the zone, in regards to the siting of carports.
2. The proposed carport is closer to the street than the dwelling with which it relates.
3. The siting of the proposed carport is not sympathetic to the existing dwelling or the locality, or the context of its setting, including that of adjacent residential dwellings.
4. The proposed development will visually dominate the existing dwelling and will diminish the attractiveness of the streetscape.

Carried

MOTIONS WITHOUT NOTICE - Nil

The meeting closed at 6.00 p.m.

18 March 2016
AF15/554
LM

CONFIRMED THIS

DAY OF

2016.

.....
PRESIDING MEMBER