December 20, 2024

[redacted]

Attention: [redacted]

RE: Initial assessment of trees in area for potential facility; Potters Gorge Wellington Dam National Park

Dear [redacted],

Further to your request and my assessment of the trees in the identified area of the Wellington Dam National Park, the following is a brief of my initial observations and opinion on the condition and suitability of the trees in the identified area.

Should you have any queries regarding the findings of this report, or if I can be of any further assistance, please do not hesitate to contact me.

Yours sincerely

JASON ROYAL
Dip. Arboriculture (UK)
Tech. Arbor A

1 Terms Used

'Site'	meaning the area of the Wellington Dam National Park that was included in this assessment
'Trees'	meaning any tree that was identified and then included in the assessment
'Fall Zone'	meaning the area where a branch (or complete tree) failure is considered most likely to fall into
'Target'	meaning any areas of 'static' permanent potential targets such buildings, structures or the like that may be introduced within the likely projected Fall Zone of the Tree or if 'transitional' targets such as people or vehicles may also occur within the projected Fall Zone of the Tree
'Facility'	meaning the proposed recreational facility for the Site

2. Particulars, Scope, and Limitations to the Assessment

The information and opinions provided in this document are based on the findings from the visual observations of the Trees undertaken December 18, 2024.

It should be noted that no soil, plant tissue analysis, tomographic scans or the like were undertaken on any of the Trees in the identified area as part of this assessment.

It should also be noted and acknowledged that the assessment of root plate integrity and the in-ground stability of a tree is not always possible based on cursory observations during an assessment of this size and scope; particularly given the forest type habit that the trees are found in.

The purpose of this initial assessment is to provide an indication of the potential suitability of the Trees for the proposed Facility. A further inspection of the Trees will however be required closer to the time of construction to ensure that those chosen for use remain in good health and no major change to their structural condition has occurred since the date of this assessment.

3. Tree Assessment Method

All Trees were visually inspected from ground level.

Tree heights were measured using a Forestry Pro tool and rounded to the nearest metre. Tree DBH and DRF (diameter at root flare) were measured using a standard DBH tape and rounded to the nearest cm. All Trees were assessed in accordance with visual tree assessment ("VTA") methods and principles.

Each Tree was then assessed in accordance with 'visual tree assessment'[1] ("VTA") methods and principles. The VTA method is based on the sciences of tree biology, physiology, tree structure, and tree bio-mechanics.

The overall health of each Tree was adjudged from an inspection of its leaf, overall percentage of leaf mass present in the canopy of the Tree, and the presence (or absence) of any pest or disease factor that could have an effect on its health.

The structural integrity of each Tree was determined from a visual inspection of its main stem, primary (and secondary) branch unions to determine the presence of any areas considered to be a structural 'defect' or 'imperfection' such as unions with included bark, swelling, or noticeable splitting at them.

[1] Field Guide for Visual Tree Assessment (VTA); The Body Language of Trees, A Handbook for Failure Analysis; C Matteck, H Breloer

Symptoms of decay, growth patterns and defects are identified and assessed as to their potential to cause whole tree, part tree or branch failure, and where considered necessary further investigation by way of the use of sounding techniques was utilised to determine the presence and general extent of any areas of cavity or associated decay within a tree's main stem structure. Each Tree's root plate area was also inspected to identify any visible signs of root plate, movement, cracking or heave from which a determination of its in-ground stability can be ascertained.

The natural species traits of the given Tree was also considered as part of the assessment process; i.e. its typically anticipated natural life span for the Perth area, if it is a species known to be subject to issues associated with decay, termites (and how that would affect its structural integrity), or can be subject to the 'sudden branch drop' phenomenon, known to have large diameter surface root system, declared weed species etc.

4. Summary of Key Findings

66 Trees were identified in this area as having been selected for use as part of the Facility.

Most were noted to be Jarrah (*Eucalyptus marginata*), along with a few Marri (*Corymbia calophylla*) and a Blackbutt (*Eucalyptus patens*). All of these species of tree are native (endemic) to this part of Western Australia.

Whilst the majority of these Trees looked to be in good health, there were a small number that were noted to be showing signs of a declining health; predominantly Marri, and possibly in response to the presence of Marri Canker (*Quambalaria coyrecup*) although broader environmental factors cannot be discounted either.

The majority of the Jarrah in this area looked to be remaining in good health although the volume of leaf mass in the canopy of some is slightly lower than others, what leaf mass is present shows good condition and form.

There are a number of dead trees in the area; mostly Jarrah.

The structure of the majority of the Trees chosen for use as part of the Facility was considered to be 'good' and typical for specimens of their given species at their given size/age.

Some of the larger older Trees were observed to have areas of decay in their lower main stem structure. However, this is generally a common trait for many older Jarrah and Marri and doesn't always have a major impact on their structural integrity as appeared to be the case in the majority of the Trees selected for the Facility.

A number of the Trees were also noted to have been subject to branch failures at some stage in the past; all of which looks to have been strong wind/storm damage related causes and again fairly common for larger older trees of these species in the given habitat they are in.

In terms of their suitability for use as part of the Facility, the majority of the Trees selected were considered to be suitable, with some consideration needing to be given to the height above ground level able to be used.

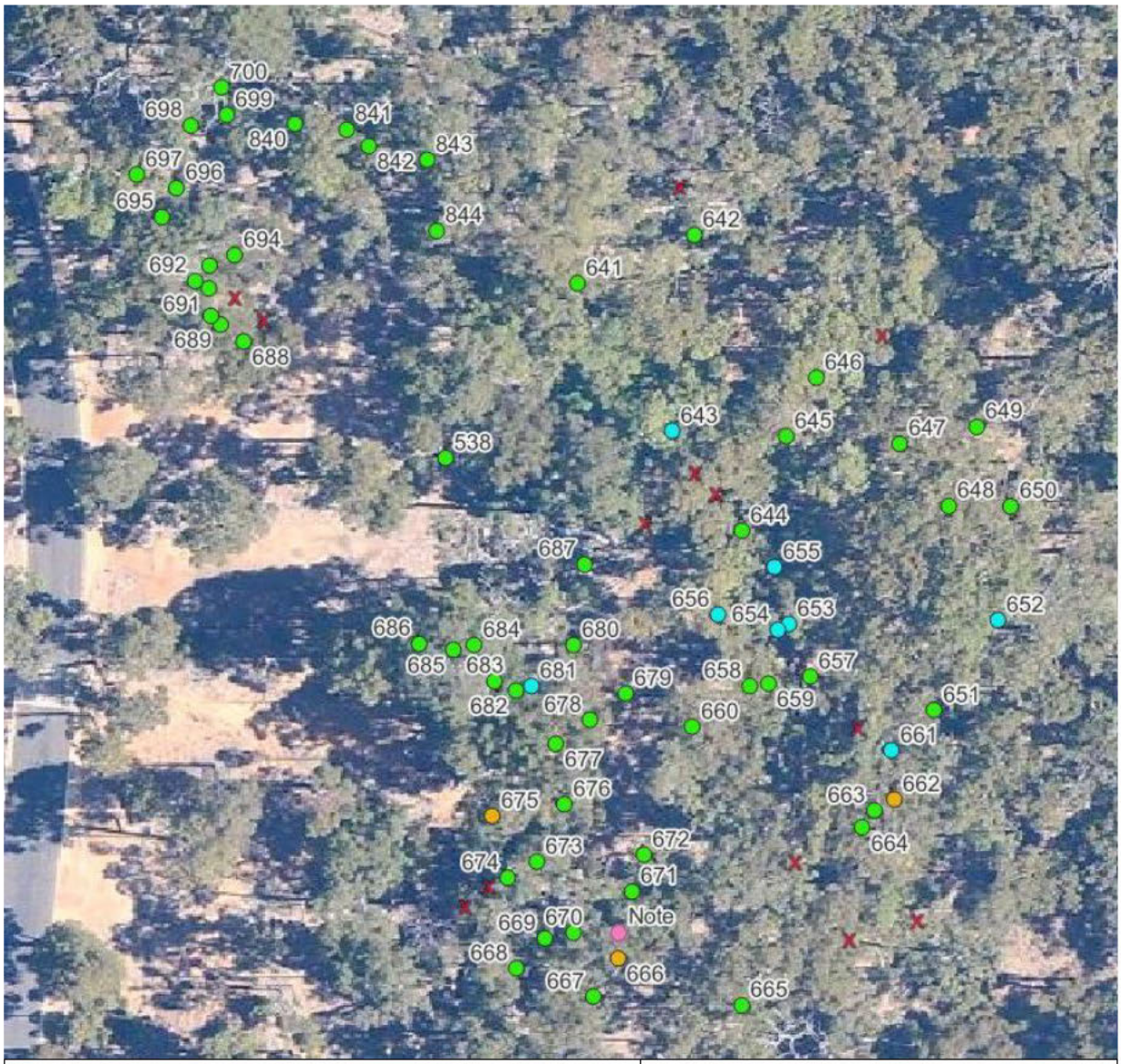
Three Trees were however considered to have 'questionable suitability'; all due to their structural condition. **Whilst this is not to suggest that they could not be used for the Facility, they may become a cause of issues or major concern in the foreseeable future.**

During the assessment, one leaning tree of particular note (concern) was also identified in the Fall Zone of where structures for the proposed Facility may be installed. Although it is not being used as part of the Facility, that Tree will need to be considered as part of its design, as some may need canopy works or even removal if 'targets' are to be introduced into its fall zone area.

Another 13 dead trees were also identified in the fall zone of where structures for the proposed Facility may be installed, and all of these trees would be recommended to either be removed, or, at the very least reduced in height so that any structures installed as part of the Facility are not with the Fall Zone of any of those trees. Note; during the assessment those trees were all marked with a red dot of marker paint to aid in their identification.

All of these Trees have been plotted onto an aerial of the area included in the assessment and have been colour-coded for ease of reference, and table of information of the Trees identified during the assessment has been provided below.

Tree Location Guide

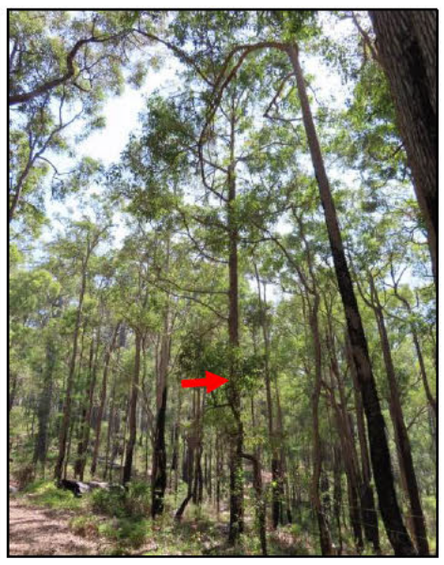


KEY

- Trees with Questionable Suitability
- Suitable Trees
- Just Suitable Trees
- Large tree not being used but need to be considered as part of design due to its structure/form
- X dead tree

Client:	Florent Lore
Project:	Potter Gorge, Wellington Dam National Park
Aerial Imagery;	Nearmap.com.au
Inspection Date:	December 18, 2024
Drawn By:	J Royal
Scale:	1:400
Horizontal Presicion;	3-5m post processed

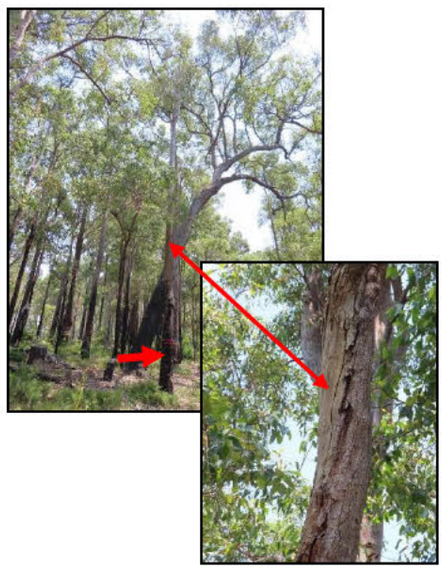
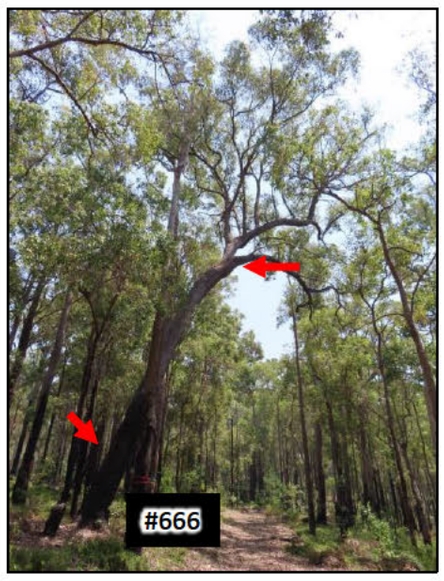
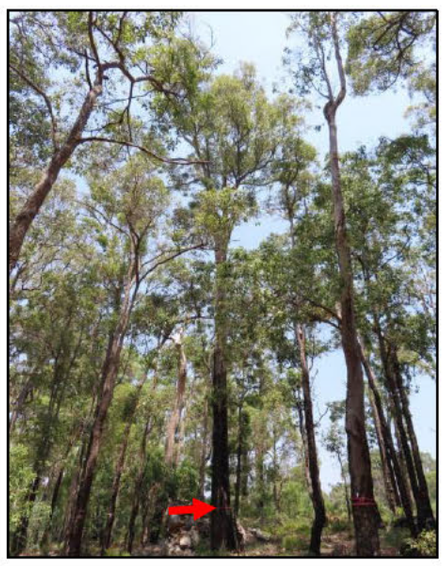
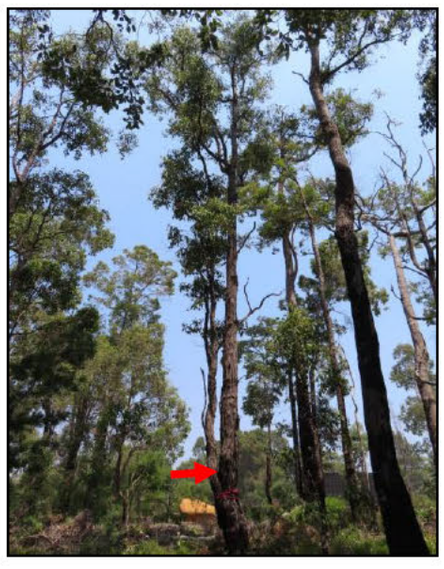
Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
538	Blue/ Yellow B1	Jarrah (*Eucalyptus marginata*)	20	44	Excellent	Good		Good tree	Suitable, but lower third only
641	Blue G1	Jarrah (*Eucalyptus marginata*)	19	50	Good	Acceptable		Large mature tree. Area of decay lower main stem but not of any major concerns at this time. Leggy form	Suitable; up to around half of its height
642	Blue G2	Jarrah (*Eucalyptus marginata*)	22	60	Good	Acceptable		Large mature tree. Good tree. Leggy form	Suitable; up to 2/3rd height
643	Yellow B3	Marri (*Corymbia calophylla*)	18	51	**Fair**	Acceptable		Canopy slightly sparse. Remaining leaf still good condition. Some larger deadwood in its canopy. Leggy form. Struggling	Just suitable, but lower third only and may not have much life span remaining
644	Yellow B2	Marri (*Corymbia calophylla*)	20	53	Good	Good		Good tree	Suitable; up to around half of its height

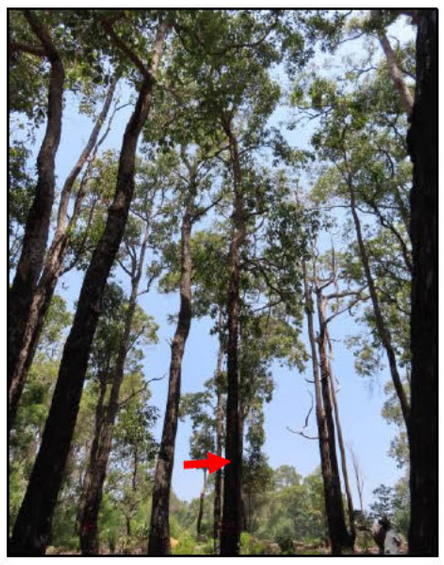
Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
645	Yellow C1	Jarrah (*Eucalyptus marginata*)	22	69	Good	Good		Good tree. Large mature tree	Suitable; up to 2/3rd height
646	Yellow/ Blue C2	Blackbutt (*Eucalyptus patens*)	18	45	Good	Good		Good tree. Canopy slightly sparse. Remaining leaf still good condition. Leggy form	Suitable, but lower half only
647	Yellow/ Blue C3	Marri (*Corymbia calophylla*)	23	49	Good	Good		Good tree. Canopy slightly sparse. Remaining leaf still good condition. Leggy form	Suitable, but lower half only
648	Yellow C4	Jarrah (*Eucalyptus marginata*)	27	67	Good	Acceptable		Large mature tree. Area of decay lower main stem but not of any major concerns at this time. Leans slightly downhill. Looks to be root stable but would be one to monitor if being used as it may be one that causes future issues longer term	Suitable, but lower third only
649	Blue G3	Jarrah (*Eucalyptus marginata*)	27	83	Good	Good		Large mature tree. Area of decay lower main stem but not of any major concerns at this time. Good tree	Suitable; up to 2/3rd height

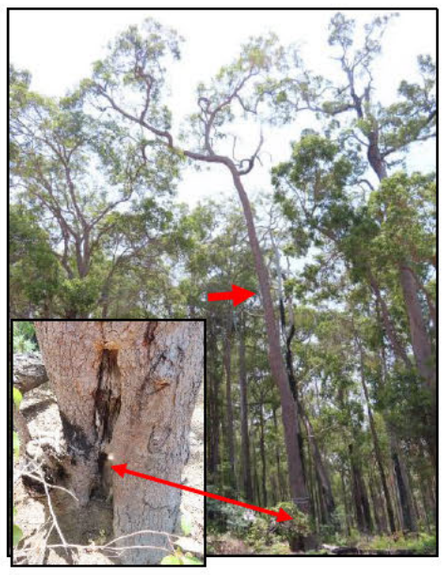
Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
650	Blue G4	Jarrah (*Eucalyptus marginata*)	28	91	Good	Good		Large mature tree. Area of decay lower main stem but not of any major concerns at this time. Good tree	Suitable; up to 2/3rd height
651	Red D10	Marri (*Corymbia calophylla*)	18	50	Fair	Acceptable		Very leggy form with no lower canopy. Signs of decay in main stem around 10-12m above ground level	Just suitable; lower quarter only though
652	Blue/ Red G5	Jarrah (*Eucalyptus marginata*)	23	71	Good	Good		Large mature tree. Good tree. Leans slightly downhill but looks to be root stable at this time	Suitable, but lower half only
653	Yellow C6	Jarrah (*Eucalyptus marginata*)	16	25	Good	Acceptable		Ok smaller tree. Leggy form	Just suitable; lower quarter only though
654	Yellow C7	Jarrah (*Eucalyptus marginata*)	12	26	Good	Acceptable		Ok smaller tree. Leggy form	Just suitable; lower quarter only though

Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
655	Yellow B4	Marri (*Corymbia calophylla*)	22	50	Good	Good		Good tree. Marri Canker noted. Looks to be minimal impact to its health at this time. Leggy form	Just suitable; lower quarter only though
656	Yellow B5	Marri (*Corymbia calophylla*)	15	45	**Fair**	Acceptable		Ok tree. Canopy slightly sparse. Remaining leaf still good condition	Just suitable; lower quarter only though
657	Yellow C5	Marri (*Corymbia calophylla*)	18	37	**Fair**	Good		Ok tree. Canopy slightly sparse. Remaining leaf still good condition	Suitable, but lower third only
658	Blue G6	Jarrah (*Eucalyptus marginata*)	23	64	Good	Good		Large mature tree. Canopy slightly sparse. Remaining leaf still good condition. Area of decay lower main stem but not of any major concerns at this time	Suitable, but lower half only
659	Blue G7	Jarrah (*Eucalyptus marginata*)	20	48	Good	Good		Large mature tree. Canopy slightly sparse. Remaining leaf still good condition. Effectively forms the one canopy with the adjacent tree	Suitable, but lower half only

Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
660	Yellow D3	Marri (*Corymbia calophylla*)	24	64	Good	Good		Large mature tree. Canopy slightly sparse. Remaining leaf still good condition. Leggy from with no lower canopy	Suitable, but lower half only
661	Red D9	Jarrah (*Eucalyptus marginata*)	14	28	Good	Good		Ok tree. Leggy from with no lower canopy	Just suitable, but lower third only
662	Red D8	Jarrah (*Eucalyptus marginata*)	22	58	Good	Questionable		Large mature tree. Health ok but area of decay in lower main stem and leans slightly downhill (looks to have been hit by a fallen tree a long time ago). **Looks ok for now but may be one that causes issues or concerns longer term**	**Questionable Suitability; lower quarter only**
663	Red D7	Jarrah (*Eucalyptus marginata*)	24	62	Good	Acceptable		Large mature tree	Suitable; up to around half of its height
664	Red/ Blue/ Yellow D4	Marri (*Corymbia calophylla*)	25	63	Good	Good		Large mature tree. Canopy slightly sparse. Remaining leaf still good condition	Suitable; up to around half of its height

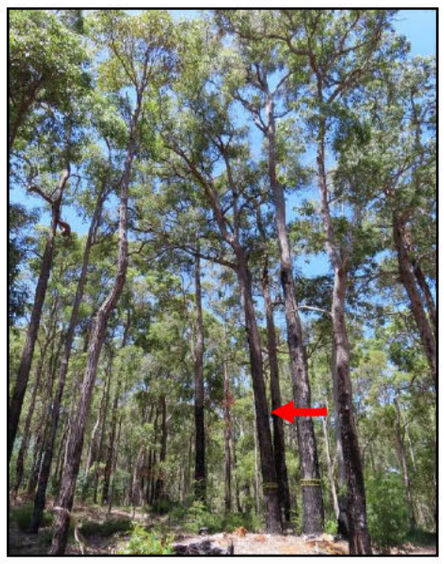
Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
665	Green H2	Marri (*Corymbia calophylla*)	16	30	Good	Good		Good smaller tree	Suitable, but lower quarter only
666	Red H5	Marri (*Corymbia calophylla*)	20	40	Fair	Questionable		AVERAGE TREE. Canopy slightly sparse. Remaining leaf still good condition. Very leggy form and area of decay noted a few meters above ground level which looks likely to be a cause of issues longer term	**Questionable Suitability. Only use lower first 2-3 metres**
NOTE; Nr #666	**not being used**	Jarrah (*Eucalyptus marginata*)	20	70	Good	Acceptable		Large mature tree. Grown on a major angle/lean. Not being selected for use but may need some load reduction works depending on what Targets may be introduced into its Fall Zone	not being used but may need some load reduction works depending on what Targets may be introduced into its Fall Zone
667	Red H4	Jarrah (*Eucalyptus marginata*)	27	64	Good	Good		Large mature tree. Good tree. Area of decay lower main stem but not of any major concerns at this time	Suitable; up to around half of its height
668	Red H3	Jarrah (*Eucalyptus marginata*)	15	45	Good	Good		Good tree. Area of decay lower main stem but not of any major concerns at this time	Suitable, but lower third only

Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
669	Blue H4	Jarrah (*Eucalyptus marginata*)	17	46	Good	Good		Good tree. Canopy slightly sparse. Remaining leaf still good condition	Suitable, but lower half only
670	Red H6	Marri (*Corymbia calophylla*)	15	28	Good	Good		Good tree. Area of decay lower main stem but not of any major concerns at this time	Suitable, but lower third only
671	Red H7	Jarrah (*Eucalyptus marginata*)	18	41	Fair	Good		Ok tree. Very leggy form with no lower canopy. Canopy slightly sparse. Remaining leaf still good condition	Suitable, but lower third only
672	Blue/ Yellow D5	Marri (*Corymbia calophylla*)	22	59	Good	Good		Large mature tree	Suitable, but lower half only
673	Blue/ Yellow D6	Marri (*Corymbia calophylla*)	24	62	Good	Good		Large mature tree	Suitable; up to around half of its height

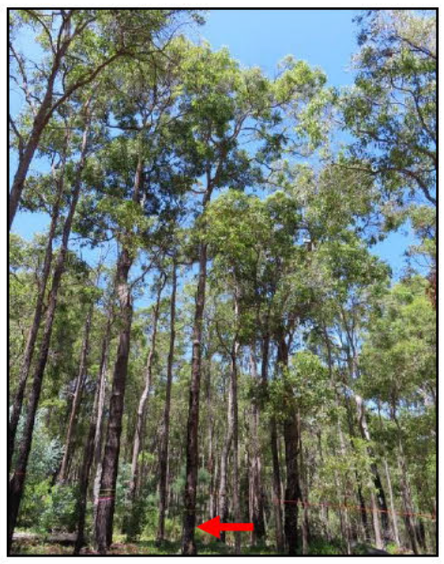
Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
674	White F4	Jarrah (*Eucalyptus marginata*)	16	32	Good	Good		Ok tree. Very leggy form with no lower canopy	Suitable, but lower half only
675	White F3	Marri (*Corymbia calophylla*)	21	65	Fair	Questionable		Large mature tree. Canopy slightly sparse. Remaining leaf still good condition. Very leggy form with no lower canopy. Leans slightly. Area of decay in lower main stem. Ok but form may cause issues in the future longer term	**Questionable Suitability. Only use lower first 3-4 metres**
676	Red E1 & Red E2	Marri (*Corymbia calophylla*)	18	39, 26	Good	Acceptable		Good tree. Might be two trees but equally may be the same tree	Suitable, but lower quarter only
677	Red/ Blue/ Yellow D1	Jarrah (*Eucalyptus marginata*)	20	64	Good	Acceptable		Large mature tree. Good tree. Effectively forms the one canopy with the adjacent tree	Suitable; up to around half of its height
678	Red/ Blue/ Yellow E3	Jarrah (*Eucalyptus marginata*)	20	64	Good	Acceptable		Large mature tree. Good tree. Effectively forms the one canopy with the adjacent tree	Suitable; up to around half of its height

Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
679	Red/ Yellow D2	Marri (Corymbia calophylla)	15	35	Good	Acceptable		Good tree	Suitable; up to around half of its height
680	Red/ Yellow B6	Jarrah (*Eucalyptus marginata*)	22	57	Good	Acceptable		Large mature tree. Good tree. Area of decay lower main stem but not of any major concerns at this time	Suitable; up to around half of its height
681	White I1	Marri (*Corymbia calophylla*)	9	17	Good	Acceptable		Ok smaller tree	Just suitable, but lower quarter only
682	White I2	Marri (*Corymbia calophylla*)	11	21	Good	Acceptable		Ok smaller tree	Suitable, but lower quarter only
683	Blue E3A	Marri (*Corymbia calophylla*)	20	44	Good	Good		Good tree. Leggy form with no lower canopy	Suitable, but lower quarter only

Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
684	Blue F1A	Marri (*Corymbia calophylla*)	24	93	Good	Good		Large mature tree. Good tree. Marri Canker noted. Looks to be minimal impact to its health at this time. Some larger deadwood in its canopy	Suitable; up to 2/3rd height
685	Blue/ White F1	Jarrah (*Eucalyptus marginata*)	24	68	Good	Good		Large mature tree. Good tree	Suitable; up to 2/3rd height
686	Blue/ White F2	Jarrah (*Eucalyptus marginata*)	24	58	Good	Good		Large mature tree. Good tree	Suitable, but lower half only
687	Green G8	Marri (*Corymbia calophylla*)	12	25	Good	Good		Good smaller tree	Suitable, but lower quarter only
688	Blue A17	Jarrah (*Eucalyptus marginata*)	23	59	Good	Good		Large mature tree. Good tree	Suitable; up to 2/3rd height

Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
689	Blue A16	Jarrah (*Eucalyptus marginata*)	25	54	Good	Good		Large mature tree. Good tree. Canopy slightly sparse. Remaining leaf still good condition	Suitable; up to 2/3rd height
690	Yellow A15	Marri (*Corymbia calophylla*)	22	66	Good	Good		Large mature tree. Good tree. Area of decay lower main stem but not of any major concerns at this time	Suitable; up to 2/3rd height
691	Yellow A14	Jarrah (*Eucalyptus marginata*)	16	39	Good	Good		Good tree	Suitable, but lower half only
692	Yellow A12	Jarrah (*Eucalyptus marginata*)	28	60	Good	Good		Large mature tree. Good tree. Effectively forms the one canopy with the adjacent tree	Suitable; up to around half of its height
693	Yellow A13	Jarrah (*Eucalyptus marginata*)	26	52	Good	Good		Large mature tree. Good tree. Effectively forms the one canopy with the adjacent tree	Suitable; up to around half of its height

Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
694	Yellow A7	Marri (*Corymbia calophylla*)	22	43	Good	Good		Large mature tree. Good tree. Leggy canopy form	Suitable, but lower half only
695	Red A11	Jarrah (*Eucalyptus marginata*)	15	22	Good	Good		Ok smaller tree. Leggy canopy form	Suitable, but lower quarter only
696	Red A10	Jarrah (*Eucalyptus marginata*)	20	34	Good	Good		Ok smaller tree. Leggy canopy form	Suitable, but lower quarter only
697	Red/ Yellow A6	Marri (*Corymbia calophylla*)	21	69	Fair	Good		Large mature tree. Canopy slightly sparse. Remaining leaf still good condition. Some larger deadwood in its canopy	Suitable, but lower third only
698	Red A9	Jarrah (*Eucalyptus marginata*)	23	59	Good	Good		Large mature tree. Leggy form with no lower branch structures	Suitable; up to around half of its height

Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
699	Yellow A5	Jarrah (*Eucalyptus marginata*)	23	52	Fair	Good		Large mature tree. Canopy slightly sparse. Remaining leaf still good condition. Leggy form with no lower branch structures	Suitable; up to around half of its height
700	Red A8	Marri (*Corymbia calophylla*)	14	37	Fair	Good		Ok tree. Canopy slightly sparse. Remaining leaf still good condition. Leggy form with no lower branch structures	Suitable, but lower third only
840	Yellow A4	Marri (*Corymbia calophylla*)	14	30	Good	Good		Ok tree. Canopy slightly sparse. Remaining leaf still good condition. Leggy form with no lower branch structures	Suitable, but lower third only
841	Yellow A3	Jarrah (*Eucalyptus marginata*)	23	50	Good	Good		Large mature tree. Good tree. Leggy form with no lower branch structures. Swoop on main stem but doesn't look to be a concern at this time	Suitable, but lower third only
842	Yellow A2	Marri (*Corymbia calophylla*)	16	39	Good	Good		Good tree. Leggy form with no lower branch structures. Effectively forms the one canopy with the adjacent tree	Suitable, but lower third only

Tree Tag #	Tape Ref	Species	Approx. Height (metres)	DBH (cm)	Health	Structure	Image	Comments	Suitability
843	Yellow A1	Marri (*Corymbia calophylla*)	15	46	Fair	Good		Ok tree. Canopy slightly sparse. Remaining leaf still good condition	Suitable, but lower third only
844	Green A18	Jarrah (*Eucalyptus marginata*)	13	21	Good	Good		Good smaller tree. Leggy form	Suitable, but lower quarter only

5. Suitability and Further Considerations

In terms of their suitability for use as part of the Main Facility, the majority of the Trees selected were considered to be suitable, with some consideration needing to be given to the height above ground level able to be used.

The structural properties of the various species (provided as an attachment to this report) will also need to be considered during the design stage to ensure that the selected Trees will be able to support the anticipated level of any loading that could be applied.

The use of the three Trees that were considered to have 'questionable suitability' will need to be considered further. Whilst this is not to say that they couldn't be used for the Facility for a period of time, longer-term their structure may well necessitate their removal and/or changes to their use; possibly within a 5-10 year period.

Although they are not being used as part of the Main Facility, there is another one tree in the area that will also need to be considered as part of its design, and it may need canopy works or even removal if Targets are to be introduced into its projected Fall Zone area.

There are also (at least) 13 dead trees that would be recommended to be removed (or at the very least reduced in height so that any structure installed as part of the Facility are not within the Fall Zone of any of those particular trees).

In terms of canopy works on the Trees selected for use, some *may* require varying amounts of canopy works to remove any larger deadwood from their canopy. Otherwise, canopy works requirements for the Trees are at this time anticipated likely to be minimal. Another inspection of the Trees closer to the time of the construction would be warranted to identify which Trees require works at that time.

Similar to the other areas previously inspected, the main consideration for the use of the area for a recreational facility is the general health of the trees in the Wellington Dam National Park, and particularly the Jarrah given the number that look to have recently died, and the number that look to be dying off.

Given this, although most looked to be good trees and suitable for use, no guarantee to the future health or potential life span of any of the Trees selected for use as part of the Facility is able to be given.

Should you have any queries regarding the findings of this report, or if I can be of any further assistance, please do not hesitate to contact me.

Yours sincerely

JASON ROYAL
Dip. Arboriculture (UK)
Tech. Arbor A

Attachment; Copy of the Structural Properties of each of the Main Species Identified

Strength grouping

Minimum values (MPa) for strength groups for green and *seasoned timber* come from Australian Standard AS2878-1986 'Timber - Classification of strength groups'. In grading *structural timber*, each species is allocated a ranking for green timber of S1 (strongest) to S7, and for seasoned timber SD1 (strongest) to SD8.

MOR is modulus of rupture or bending strength, MOE is modulus of elasticity or 'stiffness', and MCS is maximum crushing strength or compression strength. Hardness refers to the Janka hardness test and is a measure of resistance to indentation.

Strength Properties

Where test data were available, they are shown in bold print. Most values are from Bootle (1983), *Wood in Australia. Types, properties and uses*. (McGraw-Hill), or Julius (1906), 'Western Australian timber tests 1906: The physical characteristics of the woods of Western Australia'.

Where no strength data were available, air-dry density was used in accordance with the Australian Standard AS2878-1986 *Timber - Classification of strength groups* to predict the strength group.

1. Blackbutt (*Eucalyptus patens*)

Green and dry strength groups are S4 and SD5. The more important strength properties are given in the table below.

Property	Units	Green	Dry
Modulus of Rupture	MPa	**66**	**99**
Modulus of Elasticity	MPa	**12000**	**13000**
Max Crushing Strength	MPa	**37**	**65**
Hardness	KN	**5.5**	**6.9**

2. Jarrah (*Eucalyptus marginata*)

Green and dry strength groups are S4 and SD4 respectively. The most important strength properties are given in the table below.

Property	Units	Green	Dry
Modulus of Rupture	MPa	**68**	**112**
Modulus of Elasticity	MPa	**10000**	**13000**
Max Crushing Strength	MPa	**36**	**61**
Hardness	KN	**5.7**	**8.5**

3. Marri (*Corymbia calophylla*)

Green and dry strength groups are S3 and SD3. The more important timber properties are given in the table below.

Property	Units	Green	Dry
Modulus of Rupture	MPa	**78**	**125**
Modulus of Elasticity	MPa	**14000**	**17000**
Max Crushing Strength	MPa	**41**	**66**
Hardness	KN	**6.6**	**7.1**

Source; Forestry Products Commission; http://www.fpc.wa.gov.au

Attachment; Company Information

Company Name:	ARBOR logic
A.C.N.:	107 194 061
A.B.N.:	66 566 369 687

Insurance Details:

General Liability;	Woodina	$20 million
Professional Indemnity;	Woodina	$10 million
Personal Protection;	Zurich	

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- Failure by the Client to follow this advice.
- The action(s) or inaction(s) of the Client or any other party that gives rise to the loss of, or damage to, the subject of this advice.

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It is also important to take into consideration that all trees are living organisms and as such there are many variables that can affect their health and structural properties that remain beyond the scope of reasonable management practices or the advice provided in this report based on the visual inspection of the tree(s).

As such a degree of risk will still remain with any given tree(s) despite the adoption of any best management practices or recommendations made in this report.