

VEGETATION MANAGEMENT PLAN

**TURTLE STREET RESORT
CURTIS ISLAND
QLD**

**PREPARED FOR
QRE PTY LTD**

**VMP010126Bc
July 2015**

logic ENVIRONMENTAL

Document Control Table					
Author	Issue	Date	Reviewer / Date		Document Status
Andrew Thorold	0	07/23/15	Stefan Rohleder	04/07/15	A (Approved)
Distribution					
QRE Pty Ltd (Electronic Copy) Logic Environmental (1 copy)					

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1.0 INTRODUCTION

Logic Environmental have been engaged by QRE Pty Ltd to prepare this Vegetation Management Plan (VMP) for the proposed development (Turtle Street Resort, Curtis Island). The key objectives of this VMP are to successfully manage the subject sites vegetation during the operational works phase of the development. Vegetation Management during the construction phase is outlined in detail providing actions and delegated responsibilities that are required.

1.2 Site Location

The site is located at Turtle Street Resort, Curtis Island further described as Lot 8 & 11 on CP860464. Refer associated project drawings for further details.

1.3 Proposal Description

The proposal consists of operational works for a Resort, roads and associated infrastructure. Refer Rehabilitation Plans in Appendix A and associated project drawings for further details.

2.0 SITE DESCRIPTION/ASSESSMENT

2.1 Methodology

The site was inspected on 22 July 2015. Weather was clear and calm and no visibility was obscured due to lack of light. The trees were observed throughout the property. As no clearing is proposed no survey information on individual trees observed within the site has been recorded, all trees within the development area are to be retained and protected utilising the methods outlined in this report. Refer aerial photograph and related project plans for further details of site vegetation .

3.0 VEGETATION MANAGEMENT OBJECTIVES

The key objectives of this VMP are to successfully manage the subject sites vegetation during the operational works phase of the development. Prescribed actions and delegated responsibilities are outlined below under these main headings:

Project Management;

Vegetation Protection;

Clearing and Disposal; and

Landscaping and Maintenance.

4.0 PROJECT MANAGEMENT

The Site Manager will be responsible for implementation of this VMP. Site Manager shall inform all relevant personnel involved in the development of the location of significant trees for retention and appropriate activities adjacent to these areas prior to and during any clearing operations. During construction the Site Manager will be the point of contact for all involved personnel and liaise with an Arborist on matters concerning the sites vegetation. A suitably qualified Arborist shall be appointed and conduct a site inspection prior to site works. A pre-start meeting organised by the Site Manager, including Council representative, Arborist, Engineer and Clearing/Civil Contractor should also be undertaken to discuss and plan required strategies to comply with VMP. Actions undertaken in accordance with the VMP shall be reported to the Site Manager. All incidents such as accidental damage to retained vegetation shall be notified to Site Manager immediately. The Site Manager shall inform the appointed Arborist so rectification works for treatment or other appropriate actions can be undertaken. If unavoidable but manageable works within retained tree drip lines is approved by the Arborist, such as trenching for services, the appointed Arborist is to be on site during all such works. The Arborist shall also liaise with the Site Manager as to timing of reduction pruning and other required tree surgery.

5.0 VEGETATION PROTECTION

Vegetation to be retained shall be protected throughout the construction phase of development. All trees

shall be tagged on site by Arborist prior to commencing site works. Actual locations of Tree Protection Zones (TPZ) on site should be confirmed by the Site Manager/Project Arborist. Any approved works near trees to be retained or within critical root zone (in general accordance with Brisbane City Council – City Policy and Strategy Division, Critical Root Zone Plan UMS 522) will require the Arborist to plan for root management methods to minimise impacts upon subject trees. Methods may include hole boring or the use of high pressure water cutting equipment.

5.1 Tree Protection Measures

Tree protection measures are outlined below. These measures are not only to protect the retained trees during construction but will assist in maintaining the health and vigour of the tree post construction phase of the development. The TPZ is to be defined by erection of temporary fencing around the retained trees to enclose and protect the entire root zone, rhizosphere and the tree stem from mechanical injury, compaction/de-oxygenation and fuel or chemical spills. This fence shall generally be constructed at 2m outside the drip line of the tree or as modified by the Arborist. TPZ fencing should incorporate one or more methods below and be in accordance with AS 4970-2009:

- 1.2m high star picket fencing with single wire and coloured marking tape or flags;
- Brightly coloured flagging/tagging tape.

Signage should be placed on temporary fences indicating 'No Go Zone' for the protected trees. Once the tree protection zones are in place the Site Manager shall organise a pre-start meeting with Councils Ecologist, Development Assessment and other relevant parties as listed above in Project Management section. Following Councils approval on site further tree protection measures will include:

- No works such as stripping of leaf litter, cutting and filling are to occur within TPZ of the protected trees, unless supervised by the project Arborist. This includes restriction of soil deposits or other stockpiling of materials;
- Woody vegetation (other trees and shrubs) to be removed within any TPZ or adjacent to the trees for preservation shall be cut at ground level and stump ground to prevent regrowth. If mechanical extraction of root systems is required then extreme care is required so that protected trees are not impacted upon during this process. All these programs should be supervised by the project Arborist;
- Any tree surgery such as reduction pruning on branches or roots and other;
- Arboricultural works shall be undertaken only with the supervision of or by the project Arborist in accordance with AS 4373 – 1996 and horticultural best practice;
- Composted mulch to a depth of 75mm to 100mm shall be spread within the drip line. Site derived mulch that has not been composted may be used if approved by Arborist. Given the likely high carbon to nitrogen ratio (basically, high wood chip content compared to leaf content) in the site mulch an appropriate organic fertiliser may be required to be applied beneath such mulch at approximately 100gms per m² to minimise nitrogen being stripped from the soil by microbial activity;
- Landscaping should be minimised within protected drip lines and if required should be in consultation with project Arborist.

The above mentioned tree protection measures, where possible, are to be implemented prior to commencement of any site works and to be strictly maintained and monitored. Any alterations or modifications must be undertaken only through approval of the project Arborist.

5.2 Arboricultural Works/Recommendations

Considering the trees will be now within an emerging community environment, hazard reduction pruning should be completed before construction begins. The scope of operations should include deadwooding, minor canopy maintenance and Visual Tree Assessment (VTA) to manage lever arm extension and problematic scaffolding to mitigate risk and minimise future developmental constraints.

6.0 FAUNA PROTECTION

It is important to note that in addition to protecting vegetation, wildlife needs protection if present. To this end a visual inspection of vegetation shall be undertaken by a suitably qualified fauna 'spotter/catcher' with current DEHP permits, prior to works commencing. At all times during clearing, surveillance for fauna is required and works must be stopped and reported to Site Manager if wildlife is present in the area. Works shall not recommence until the animal has moved out of the works area. Treatment for sick or injured fauna should be sought immediately from a qualified wildlife veterinarian. Refer FMP010126Bb for further details on fauna management.

7.0 WEED MANAGEMENT AND CLEARING WORKS

Weed management shall be ongoing during the operational works phase and 'on maintenance' of development. Refer Rehabilitation Plans by Logic Environmental for further details.

7.1 Weed Control

Before clearing and in conjunction with weed removal all non endemic debris such as plastics, building materials, dumped vegetative matter and the like are to be removed and disposed of thoughtfully at approved refuse dump sites.

Weed control measures prior to clearing are to be implemented in accordance with horticultural best practice. Prior to commencement of clearing, weed species are to be identified by a suitably qualified Horticultural Consultant, Environmental Consultant, Arborist or similar. All significant weeds within the construction area are to be treated and/or removed from the property prior to clearing where practical. Disposal to be at Council refuse facility. Monitoring for weeds and appropriate control treatment will be ongoing through the site for the operational phase of development. To avoid contamination no environmental weed material should be left or incorporated into mulching of site vegetation.

Special attention is to be paid to the detection of:

- Declared Plants (Pest and Stock Route Management) Act 2002 (QLD);
- Weed Grasses, Environmental Weeds and Species with Restrictions – Brisbane City Council;
- Undesirable Plants and List of Naturalised Plants of South East Queensland (Batianoff & Butler, 2001, Queensland Herbarium); and
- Further specific weed treatment information can be sourced from the Queensland Government Department of Natural Resources and Mines – Pest Fact Sheets.

8.0 LANDSCAPING AND MAINTENANCE

At the completion of civil works, those areas still cleared shall be rehabilitated/landscaped generally as follows:

- Road reserves - complete approved civil works and landscape/revegetate in accordance with approved Landscape/Rehabilitation Plans;
- Areas beneath canopies of protected trees - mulching as per tree protection measures section above. Note that machinery used for spreading of mulch within drip lines of trees or other approved works shall be as light weight as possible and avoid ripping or disturbing the topsoil;
- Additional fill beneath retained trees shall be kept to a minimum and not be placed against tree trunks. Final levelling or shaping of topsoil will allow adequate runoff to avoid rilling or ponding of water around base of retained trees;
- Works within retained tree drip lines to be approved and supervised by project Arborist;
- Vegetation protection measures such as TPZ fencing shall be monitored and remain in place throughout the operational works phase of development where appropriate; and
- Pervious pavements shall be applied in all areas where hardstand areas are required within drip zones of trees to be retained.

9.0 RELATED DOCUMENTS

At the time of reporting there were no related documents available. Further, we note service (i.e. electricity, stormwater, water reticulation, sewer etc) locations/alignments were not available at the time of reporting (we understand this detail will be provided at Building Approval stage). As such, service alignments have not been shown on our drawings/plans. We consider information depicted on our drawings/plans represents a 'worst case scenario', i.e. service alignments will not influence the removal of any additional native trees within the site.

10.0 CONCLUSIONS

All trees are proposed for retention (with adequate supervision and correct techniques utilised) and should in no way be detrimentally affected by the proposed plans. Deviation from the tree protection guidelines however could lead to accelerated decline or possibly death as some of the methods will be quite invasive. Ensuring that all works to be undertaken on these trees is completed according to the guidelines outlined within this report is tantamount to their continued survival.

11.0 LIMITATIONS OF THIS STUDY

This study has been tailored to investigate issues at the area of interest, being Turtle Street Resort, Curtis Island, QLD. We consider that the study accurately reflects the status of ecological issues for the area of interest at the time the study was undertaken.

The duration of the site assessment was limited to approximately three (3) person hours. As such, results may not include more cryptic/seasonal species not obvious at the time of the survey. No comprehensive terrestrial/aquatic fauna surveys were undertaken.

This report has been undertaken for the specific purposes of QRE Pty Ltd as detailed in our correspondence to them, and is solely for the use of QRE Pty Ltd.

This report is only to be used in full, and may not be used to support objectives other than those set out herein, except where written approval, with comments, are provided by Logic Environmental.

Logic Environmental accept no responsibility for the accuracy of information supplied to them by second and third parties.

12.0 CLOSURE

Should further information be required please contact the undersigned.

Yours faithfully,



Andrew Thorrold
BAppSci(Hons) MEIANZ MAILDM
Director



13.0 REFERENCES

DNRW (2000). *Vegetation Management Act 1999: Vegetation Management Regulation 2000*. Queensland Government, Brisbane. Queensland Government Legislation.

DoE (1992). *Nature Conservation Act 1992*, Queensland Department of Environment, Brisbane.

Queensland Government Legislation.

DoE (1994). *Nature Conservation (Wildlife) Regulation 1994*, Subordinate Legislation 1994 No. 474. *Nature Conservation Act 1992*. Queensland Department of Environment. Queensland Government Legislation.

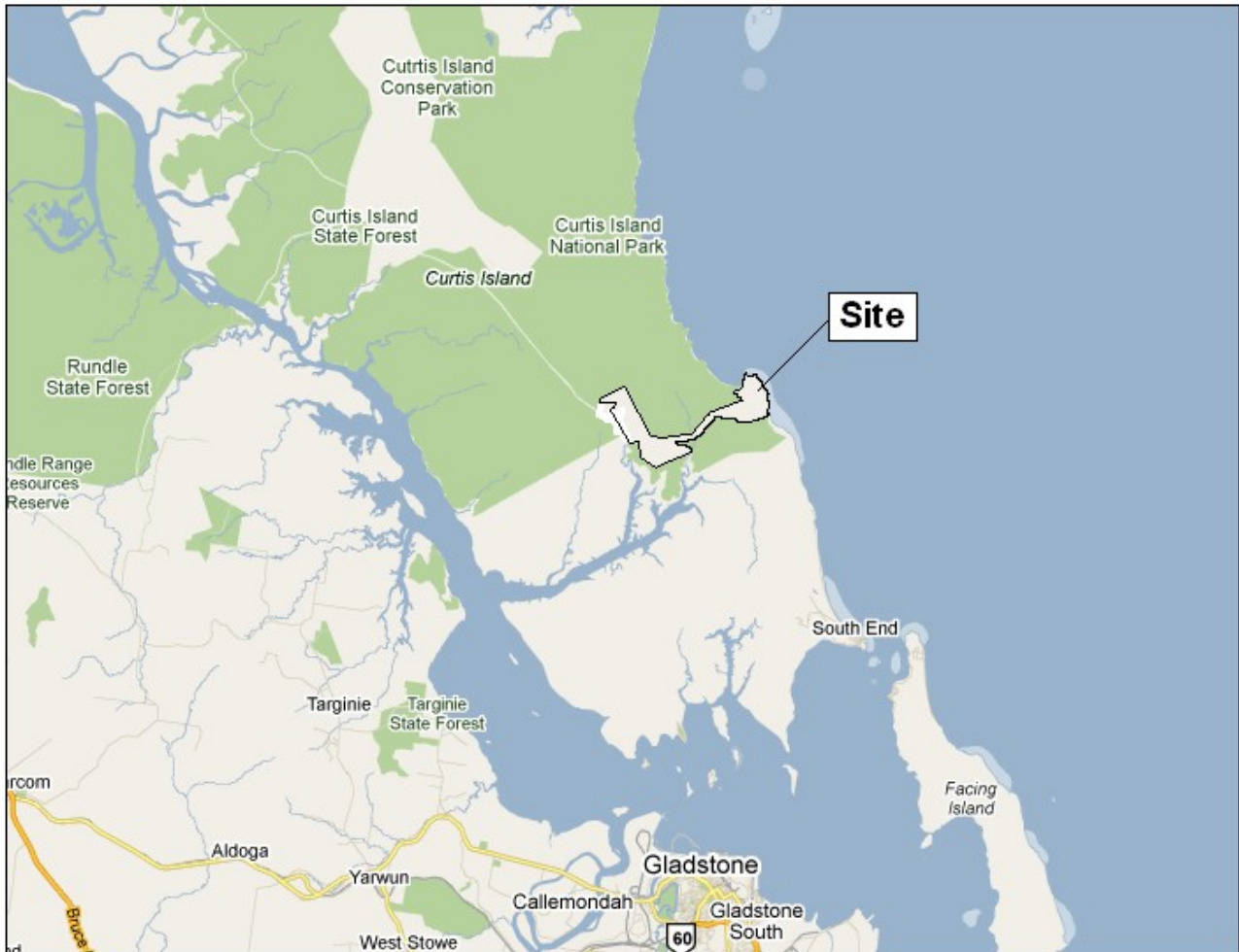
EPBC Act (1999). Environmental Protection Biodiversity Conservation Act 1999. Federal Government, Canberra. Federal Government legislation.

Logan River Branch SGAP (Qld Region) Inc (2003). *Mangroves to Mountains*. Copyright Publishing Co. Pty Ltd. Brisbane

Logan River Branch SGAP (Qld Region) Inc (2005). *Mangroves to Mountains Volume 2*. Logan River Branch SGAP (Qld Region) Inc. Brown's Plains Queensland.

APPENDIX A: FIGURES AND DIAGRAMS

Figure 1.0 – Locality Plan



Aerial Photograph



Figure 2.0. Aerial Photograph of site.