Warburton Mountain Bike Hub

Risk Management Plan

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1 RISK MANAGEMENT PLAN PURPOSE

A Risk Management Plan is a controlling document that incorporates the goals, strategies, and methods for performing risk management on a project. The Project Risk Management Plan describes all aspects of the risk identification, assessment, control, mitigation and management strategies. The purpose of developing such a plan is to determine the approach for cost-effectively performing risk management on the project.

This plan identifies risks associated with the project.

This Risk Management Plan is compliant with the risk management principles and practices as described within Australian standard, ISO 31000

2 RISK ASSESSMENT METHODOLOGY

The Yarra Ranges Council has a detailed risk management procedure which has been adopted for the Warburton Mountain Bike Hub project. This methodology used to identify and assess risks for the purposes of this plan is based on the Australian Standard AS/NZS ISO 31000:2009 Risk Management Principles and Guidelines.

The risk assessment methodology requires the Project Manager for each identified hazard to:

- Identify the likelihood of a hazard occurring;
- Identify the consequence of a hazard occurring;
- Identify a corresponding risk level of the hazard occurring (based on the matrix below);
- Identify current controls in place to manage or mitigate the hazard; and
- Make an assessment of the effectiveness of the controls.

The following tables are to be used by the Project Manager to asses each identified risk. Figure 1 provides guidance to measure the likelihood of a hazard occurring. Figure 2 provides details to identify the consequences of a hazard occurring.

FIGURE 1 MEASURING THE LIKELIHOOD OF A HAZARD OCCURRING

Level	Descriptor	Description In any one year, the likelihood of the event occurring is:
A	Almost certain	Close to 100% - annually
B	Likely	33% - once in every three years
C	Possible	10% - once in every 10 years
D	Unlikely	3% - once in every 30 years
E	Rare	1% - once in every 100 years

FIGURE 2 MEASURING THE CONSEQUENCE OF A HAZARD OCCURRING

Level	Indicative guide to potential consequences					
	People	**Infrastructure**	**Public Administration**	**Environment**	**Economy**	**Social Setting**
Catastrophic	50+ lives lost Hundreds injured 1,000+ houses destroyed 2,000+ people displaced 10,000 – 30,000 livestock lost.	Loss of critical infrastructure and / or services for 24-48 hours to the Melbourne metropolitan area.	Significant statewide outrage. Royal Commission or other similar inquiry leading to changes in policy and practice.	Permanent total loss of one or more ecosystems or critical habitat elements. Loss of nationally significant cultural assets.	$1 billion or 30% of State revenue.	Severe disruption to community wellbeing over a whole area or large part of it for a period of many years.
Major	10 fatalities as a direct result of the event 300+ houses destroyed 500+ people displaced 10,000 – 30,000 livestock lost Significant loss of agricultural breeding stock.	Loss of critical infrastructure and / or services for 8-16 hours to the Melbourne metropolitan area. Loss of services to a major regional city / several suburbs for up to a week.	Significant regional and local outrage, with some occurring at state level. Parliamentary or other inquiry leading to changes in practice.	Permanent partial loss of one or more ecosystems or critical habitat elements. Extinction of a species or significantly increase the likelihood of extinction to almost certain that intervention such as captive breeding programs are required. Loss of state significant cultural assets.	Damage costs including legal actions and / or industry impacts (tourism, forestry, wine and grape etc) to the value of more than $300 million.	Severe disruption to community wellbeing over a wide area of for more than 24 months.
Serious	5 fatalities as a direct result of the event Large number of people affected by the event 100+ houses destroyed 200+ people displaced 3,000 – 10,000 livestock lost.	Loss of critical infrastructure and / or services for 2-5 hours to the Melbourne metropolitan area. Loss of services to a major regional city / several suburbs for 3-4 days.	Some outrage at local and regional level.	Long term disturbance to one or more ecosystems or critical habitat elements. National response and / or support for animal welfare. Loss of regionally significant cultural assets.	Damage costs including legal actions and / or industry impacts (tourism, forestry, wine and grape etc) to the value of more than $100 million.	Severe disruption to community wellbeing over a moderate to large area for a period of months.
Important	Single fatality and / or multiple serious injuries requiring hospitalisation as a direct result of the event Up to 30 houses destroyed 50+ people displaced 3,000 – 10,000 livestock lost.	Loss of critical infrastructure and / or services for 1 hour to the Melbourne metropolitan area. Loss of services to a major regional city / several suburbs for 1 day. Loss of services to a local community for a week.	Local outrage and concern	Temporary disturbance to one or more ecosystems or critical habitat elements. Local response and / or support for animal welfare.	Damage costs including legal actions and / or industry impacts (tourism, forestry, wine and grape etc) to the value of more than $30 million.	Localised disruption to community wellbeing over a small area for a period of weeks.

Having determined the likelihood and expected consequence of a hazard occurring, an overall level of risk can be identified through the use of the following matrix.

The risk matrix is utilised to estimate the level of risk associated with a specific hazard (risk is the likelihood of harm multiplied by the severity of harm).

FIGURE 3 DETERMINING A RISK LEVEL FOR EACH HAZARD – THE RISK MATRIX

	Consequence			
Likelihood	**Important**	**Serious**	**Major**	**Catastrophic**
Almost certain	Moderate	High	Extreme	Extreme
Likely	Moderate	High	High	Extreme
Possible	Low	Moderate	High	High
Unlikely	Low	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate

The following table lists the actions recommended for each risk category.

FIGURE 4 RECOMMENDED ACTION FOR EACH RISK CATEGORY

Risk category	Recommended action
Extreme risk	Must be managed with a detailed plan – will require resources and training
High risk	Requires immediate planning – resource priority and training
Moderate risk	Manage by specific monitoring or response procedures
Low Risk	Manage by routine procedures

The final stage of the Risk Assessment Methodology is to determine the effectiveness of control and mitigation measures.

FIGURE 5 DETERMINING THE EFFECTIVENESS OF CONTROL MEASURES

Descriptor	Guide
Fully effective	Nothing more to be done except review and monitor the existing controls. Controls are well designed for the risk, are largely preventative and address the root-causes and management believes that they are affective and reliable at all times. Reactive controls only support preventative controls.
Substantially effective	Most controls are designed correctly and are in place and effective. Some more work to be done to improve operating effectiveness of management has doubts about operational effectiveness and reliability.
Partially effective	While the design of controls may be largely correct in that they treat most of the root-causes of the risk, they are not currently very effective. There may be an over-reliance on reactive controls. **OR** Some of the controls do not seem correctly designed in that they do not treat root-causes; those that are designed correctly are operating effectively.
Largely ineffective	Significant control gaps. Either controls do not treat root-causes or they do not operate at all effectively. Controls, if they exist, are just reactive.
None or totally effective	Virtually no credible control. Management has no confidence that any degree of control is being achieved due to poor control design and / or very limited operational effectiveness.

3 RISK REGISTER

The Yarra Ranges Council has developed the following lists of risks, and has identified for each risk:

- The likelihood of a hazard occurring;
- The consequence of a hazard occurring;
- A corresponding risk level of the hazard occurring;
- Current controls to manage or mitigate the hazard; and
- An assessment of the effectiveness of the controls.

For each risk, the key personal that will be responsible to manage the risk have also been identified.

FIGURE 6 RISK REGISTER

Item Number	Issue Area	Issue Description	Initial Risk Analysis			Risk Control Measure	Action by	Residual Risk Analysis		
			Risk Likelihood	Risk Consequence	Risk Level			Risk Likelihood	Risk Consequence	Risk Level
1	Design	Design doesn't meet operational requirements	Unlikely	Important	Low	Scope developed through Feasibility process, ensure scope achieved Involvement of end users and Project Working Group(PWG) in design process	Project Manager Lead Consultant	Rare	Important	Low
2	Design	Project can not be delivered within original budget	Possible	Important	Low	Architect to ensure that designs only match budget available Identify opportunities for further funding if scope creep can't be avoided	Project Manager Sponsor	Unlikely	Important	Low
3	Design	Site Constraints due to planning overlays, spillage etc	Likely	Important	Moderate	Design to assume the worse situation	Lead Consultant	Possible	Important	Low
4	Project Delivery	Agreed project timeline is not adhered to	Likely	Important	Moderate	Monitor project against agreed project timeline throughout project Investigate accelerating components when required	Project Manager	Possible	Important	Low
5	Authorities	Planning application approval process delays project proceeding and/or conditions stipulated that can't be met	Likely	Important	Moderate	Community consultation undertaken during feasibility phase Undertake pre-planning meetings to ensure that application meets requirements Ensure all supporting documentation is included with	Project sponsor Project Manager	Possible	Important	Low

Item Number	Issue Area	Issue Description	Initial Risk Analysis			Risk Control Measure	Action by	Residual Risk Analysis		
			Risk Likelihood	Risk Consequence	Risk Level			Risk Likelihood	Risk Consequence	Risk Level
						application				
6	Procurement	Failure to attractive contractors	Rare	Important	Low	Procurement to monitor downloading of tender form e-tender site Attendance at site meeting during tender Invite additional contractors during tender period if required	Procurement Project Manager	Rare	Important	Low
7	Financial	Tender prices exceed budget available	Possible	Important	Low	Pre tender estimate to be in budget Review scope/delivery timeframe for possible changes Include tender options if budget is tight Seek additional funding	Quantity Surveyor Project Manager	Unlikely	Important	Low
8	Financial	Contractor insolvency	Unlikely	Important	Low	Credit checks Bank Guarantees Certified progress payments	Project Manager Procurement	Unlikely	Important	Low
9	Construction Management	Procurement lead time for materials including building materials	Likely	Important	Moderate	Commence negotiations with key suppliers early in the project. Procure key items at earliest opportunity	Project Manager	Possible	Important	Low
10	Construction Management	Latent site conditions discovered during construction	Likely	Important	Moderate	Extensive Geotech reports History of site known	Lead consultant Project Manager	Possible	Important	Low
11	Construction Management	Inclement weather creating construction delays.	Likely	Important	Moderate	Project timeline allows contingency for construction delays.	Project Manager	Possible	Important	Low

Item Number	Issue Area	Issue Description	Initial Risk Analysis			Risk Control Measure	Action by	Residual Risk Analysis		
			Risk Likelihood	Risk Consequence	Risk Level			Risk Likelihood	Risk Consequence	Risk Level
12	Construction Management	Items stolen or vandalised at the site resulting in additional cost for replacement material and delay	Possible	Important	Low	Store all building and construction materials, plant and equipment within compound Contractor risk	Contractor	Unlikely	Important	Low
13	Construction Management	Local traffic disruption on the main road due to large numbers of vehicles and plant	Possible	Important	Low	Ensure traffic management is in place for duration of construction.	Contractor Project Manager	Possible	Important	Low
14	Construction Management	Authority causes excessive delays	Possible	Important	Low	Make applications to Authorities as soon as possible in project Establish and maintain open lines of communication with Authorities throughout the delivery process	Project Manager Contractor	Unlikely	Important	Low
15	Construction Management	Quality of works doesn't meet expectations	Possible	Important	Low	Quality Assurance regime established by contractor and monitored regularly as per tender documentation Design team inspections both regulatory and non regulatory work rectified as work progresses	Contractor Project Manager Design Team	Unlikely	Important	Low
16	Construction Management	OHS issues due to inclement weather	Likely	Important	Moderate	Provide access to shelters for workers. Cancel works in event of extreme weather.	Contractor	Possible	Important	Low
17	Construction Management	Damage caused to existing services during construction	Possible	Important	Low	Contractors to be provided with site familiarisation by relevant	Project Manager	Unlikely	Important	Low

Item Number	Issue Area	Issue Description	Initial Risk Analysis			Risk Control Measure	Action by	Residual Risk Analysis		
			Risk Likelihood	Risk Consequence	Risk Level			Risk Likelihood	Risk Consequence	Risk Level
		works				personal.				
18	Political risk	Community approach Ward Councillor media	Possible	Important	Low	Maintain open lines of communications as to progress of project Provide communication updates to Community and Councillor via various media	Project Manager	Unlikely	Important	Low