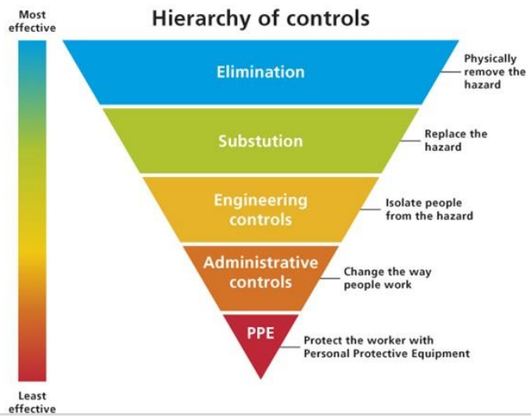
Hazard Management Details – General			Documentation
Plant / Equipment Item: Light Tower	Make / Model No.: V-20	Serial No.: N/A	Relevant Legislation/Standards
Work Location: Site Specific	Factory Location: Site Specific		Is plant required to be registered? Yes
Name of Person (s) Conducting Assessment: Brendan Price	Date Conducted: 22nd April 2020		Is a user license required? No – Trained Operator

Description of Use:

This risk assessment reviews the safe and proper manner for the safe use of V20 Light Tower

Summary of Key Risks:

- Entanglement
- Impact and cutting
- Shearing
- Electricity
- Ergonomics
- Slips/trips/falls
- Fire and explosion
- Other (exhaust fumes)



Key reference material:

- Applicable Australian Design Rules (ADR's) – where applicable
- AS 2550.1-2011: Cranes, hoists and winches—Safe use Part 1: General requirements, and
- Load Restraint Guide – 2018
- AS 31000 Risk Management Standards.
- AS 1319—1994. Australian Standard. Safety signs for the occupational environment
- IP 65/44 Australian standard AS/NZS CISPR 15:2006

Plant Documentation

Ensure that operator's manuals accessible
Ensure that this plant is operated by a trained operator

LIKELIHOOD DESCRIPTION					
LIKELIHOOD	The event may occur only in exceptional circumstances.	Not expected but the event may occur at some time.	The event could occur at some time.	The event will probably occur in most circumstances.	The event is expected to occur or has occurred and is continuing to impact.
FREQUENCY	Less than once in 10 years.	At least once between 5 and 10 years.	At least once between 1 and 5 years.	Once per year.	More than once per year.
PROBABILITY	<10%	10% - <35%	35% - <65%	65% - <90%	>90%

CONSEQUENCE DESCRIPTION – IMPACTS		Consequence Level	Likelihood Level				
Environment	**Health and Safety**		**A. Rare**	**B. Unlikely**	**C. Possible**	**D. Likely**	**E. Almost Certain**
Permanent environmental damage to an extensive area outside of campus	Fatality Permanent Total Disability	**1. Critical**	**Medium**	**High**	**High**	**Extreme**	**Extreme**
Long term environmental damage extending to a large area requiring high level of intervention	Significant/extensive injury or illness. Permanent Partial Disability	**2. Major**	**Low**	**Medium**	**High**	**High**	**Extreme**
Short term environmental damage requiring some intervention	Serious injury or illness. Lost time injury >10 days	**3. Moderate**	**Low**	**Medium**	**Medium**	**High**	**High**
Short term environmental damage affecting a small area, easily remediated	Injury or illness requiring medical treatment Lost time injury <10 days	**4. Minor**	**Low**	**Low**	**Medium**	**Medium**	**High**
Minimal environmental damage affecting a very small area, immediately remediated	Injury or illness requiring First Aid treatment No lost time injury days	**5. Insignificant**	**Low**	**Low**	**Low**	**Low**	**Medium**

SAFE OPERATING PROCEDURE
V-20 LIGHT TOWER

1. Executive Summary

Risks have been identified, categorised and assessed using a combined approach to Operator, Safety and Operational readiness. Risks have been rated from low to high using five-point likelihood and five-point consequence matrix. This risk review is to determine the risks associated with the use of the machinery in accordance with the Plant Regulations of 2007 and WHS Plant Regulations 2012 and Australian Standards AS 31000 Risk Management Standards.

Operators of the Lighting Trailer should have an appropriate vehicle license and be competent users of the equipment. The Operator activities have been assessed by analysing activities documented by personnel as part of their day to day tasks

This report needs to be read in its entirety to understand all recommendations made. There is a summary of recommendations below.

2. Risk Management Approach

2.1 Risk Management Strategy

The Strategy requires the analysis of maintenance activities to determine:

- Likelihood of the risk eventuating,
- Standards of mitigation in place,
- The residual or risk exposure remaining after the mitigation effort,

In essence, the aim of the Risk Profile is to provide a common risk management framework to assist Management determine the appetite for, and tolerance to risk, and to communicate this throughout the industry as an aid to decision making and as a driver for maintenance improvement.

2.2 A Definition of Risk

Broadly speaking, risks are defined as uncertain future events that could influence the achievement of the organisation's strategic and operational goals and objectives. In practical terms, risk is the exposure to the threat of such things as economic, financial, reputational loss or gain, physical damage, injury or delay, as a consequence of pursuing or not pursuing a particular course of action.

2.3 Definition of Hazard

A HAZARD is any situation with the potential for human injury, damage to property, damage to the environment or a combination of these.

Risk is defined in two dimensions:

- the likelihood of the risk occurring and
- the consequence to the business should that risk occur

Risk management is a management approach for identifying, analysing and treating risks so that industry operates in an environment where the risks are understood and are acceptable.

3. The Process

Identification of Risk

The underlying philosophy for the identification of risk exposure is to use directly the expertise of persons that have the responsibility for managing those risk exposures.

In practice this entailed structured discussions with individuals representing principle operator activities for the Lighting Trailer. Greater detail on the identification process for risks is detailed below.

4. Risk Analysis and Evaluation

The following risk data collection and analysis was undertaken for each risk issue identified:

- A description of the risk (as far as was practicable the risk was described in the context of a hypothetical scenario).
- A description of the impact of the risk, describing a range of potential impacts on the individuals should the risk eventuate.
- A description of the control environment and estimation of its effectiveness is provided
- An estimation of the likelihood of the risk occurring and rated against the criteria below:
- An estimation of the consequence of the risk should it eventuate. Ratings for consequence are determined according to the table below
- Determination of an overall risk rating based on the formula:

Risk Rating = Risk Likelihood X Risk Consequence

Actual ratings are determined using the matrix on the following page:

- Where information was readily available, a preliminary description of the control environment and estimation of its effectiveness is provided
- An estimation of the likelihood of the risk occurring and rated against the criteria below
- An estimation of the consequence of the risk should it eventuate. Ratings for consequence are determined according to the table below

5. Codes of Practice and Hazard Identification

Remember, Codes of Practice are part of a strategy to raise the awareness of workplace health and improve safety practice. They have been developed for particular hazards and provide guidelines to help employers identify, assess and control risks arising from these hazards.

Unless cited in a Regulation, they are not compulsory for employers to implement, but their implementation signifies the employer's commitment to comply with their legal obligation to provide a safe and healthy workplace.

Notwithstanding the above, a Code of Practice may be used as evidence of a breach of the Act, or as a defence that all reasonably practicable steps were taken to prevent an injury or illness.

5.1 Identification and Classification of Hazards

Once hazards have been identified, the next step is to assess their significance. In assessing the significance of a hazard there are a number of important factors that need to be considered. These factors include the following:

- Probability of injury or illness, in considering the probability of injury or illness it is important to note that they can be caused either as a direct result of short term exposure to a hazard, or from long term exposure to a hazard.
- Injuries that may be a direct result of short-term contact with a hazard include cuts, burns, abrasions, fractures, crush and compression injuries. Long term exposure to some hazards can cause conditions such as deafness, cancers, respiratory damage and dermatitis.
- Potential severity of injury or illness.
- How often are people exposed
- Length of exposure.
- Level of exposure.
- Number of people exposed.
- Adequacy of existing control measures.
- Human differences:
- skill level;
- work experience;
- training;
- physical capabilities

As there are many types of workplaces and hazards (or combinations of hazards), the methods for assessing hazards will be quite different. The level of risk of a job or task may well have a number of contributing factors which also need to be considered.

The important factor to remember in assessing hazards is that this assessment will determine what priority is assigned to their elimination or control.

5.2 Hazard Categories

CATEGORIES	EXAMPLES
Physical	Vibration, noise, temperature, lighting, radiation, manual handling, mechanical, electrical.
Chemical	Dust, fumes, vapours, gases, explosives, acids, solvents, flammable liquids/solids, oxidising agents.
Biological	Viruses, bacteria, mould, fungi, pollen, insect excrete, contaminated body fluids and contaminated air.
Ergonomic	Poor design of work, poor design of equipment, poor design of environment.
Psychosocial	Stress, poor training and communication, work overload/underload, inappropriate work assignments.

6. Risk Rating System – Saferoads Pty Ltd

Refer Table – Page 1

Unacceptable Risks

Extreme = Senior Management and Resources required
High = Senior Management attention required

Acceptable Risks

Medium = Management Responsibility
Low = Standard Operating Procedures to handle

7. Operational Consequences explained

CONSEQUENCE						
RATING	DESCRIPTION	FINANCIAL	SAFETY	REPUTATION	OPERATIONS	ENVIRONMENT
5. CATASTROPHIC	Major business failure, multiple deaths, huge financial loss	Asset destruction greater than $10m Revenue loss or opportunity cost of more than $10m.	Multiple fatalities, or significant irreversible effects to a number of people (employees and/or public)	Irreparable damage to company name. Parliamentary inquiry. Major public concerns raised.	Significant interruption or cessation of activities for two weeks or more.	Catastrophic irreversible environmental harm. Community outrage – potential large-scale class action.
4. MAJOR	Loss of business functionality/capability extensive injuries, situation not contained, but no detrimental effects, major financial loss.	Loss of assets totalling $1.5m to $10m Revenue loss or opportunity cost of $1.5m to $10m.	Single fatality and/or severe irreversible disability to one or more persons	Significant damage to company name	Total Service cessation for one week.	Major environmental hazard caused – long term recovery. High-profile community concerns raised – requiring significant rectification measures.
3. MODERATE	Moderate disruption to daily activities, medical treatment required, high financial loss, situation contained with outside assistance	Loss of assets totalling $150,000 to $1.5m Revenue loss or opportunity cost of $150,000 to $1.5m.	Irreversible disability or impairment to one or more persons	Moderate damage to company name.	Total service cessation for several days.	Measurable environmental harm – medium term recovery. Community complaints voiced privately – minor rectification measures.
2. MINOR	Minor disruption to day to day activities, first aid treatment required, situation immediately contained, medium financial loss.	Loss of assets totalling $15,000 to $150,000. Revenue loss of $15,000 to $150,000.	Transient health impact on staff or public	Minimal damage to Saferoads Pty Ltd name.	Business interruption over several days.	Medium term immaterial effect on environment/ community – required to inform EPA.
1. INSIGNIFICANT	Will not affect day to day performance, low financial loss, no injuries.	Loss of assets less than $15,000. Revenue loss of less than $15,000.	No health impact on staff or public	Reputation intact, internal knowledge only.	Negligible operational impact.	Short term transient environmental or community impact – negligible action required.

8. Hazard Hierarchy of Control

When developing solutions for identified hazards the risk assessment team members applied the Hierarchy of Controls. A hierarchy of hazard control measures has been established which is used on the basis that, the higher the control strategy is in the hierarchy, the more preferable and effective it is.

The hierarchy of hazard control in order of priority is:

8.1 Design

Before moving into new premises, or introducing new equipment or work process, all reasonably practicable steps should be taken to have the workplace plant, equipment and task designed and constructed so that potential hazards are removed or reduced to their lowest level. It is easier, and less costly to change a drawing or specification than it is to make changes after construction or installation.

8.2 Elimination/Substitution

Completely removing the hazard or substituting, that is, replacing the material, work process or machine with a less hazardous one is a very desirable strategy. This eliminates the risk of exposure to that hazard. For example:

- removing a noisy machine from the work area;
- substituting equipment that is ergonomically designed;
- jobs can be redesigned to remove the need for staff to maintain the same posture or carry out constant repetitive work

8.3 Isolation

When the above steps have been tried and have proved to not be the best solution for minimising the risk, then the separation of the hazard from employees, by use of guards on machines, enclosing noisy machines, relocating noisy portions of the plant or the use of remote handling devices should be considered. This allows for the physical separation of the hazard from the workplace.

8.4 Engineering Controls

Engineering control measures include such things as:

- modification of furniture, machinery and equipment;
- the use of controls such as local exhaust ventilation; and
- the provision of mechanical aids to assist staff with lifting and carrying tasks

8.5 Administrative Controls

Administrative procedures can also be introduced to reduce risk. Changing work procedures, for example, by introducing job rotation to reduce the exposure time to hazardous work processes or conditions is a common administrative control measure.

Administrative controls can also include education, adequate housekeeping procedures and supervision of employees in safe work practices.

- Personal Protective Equipment (PPE)

If engineering and other controls are not practical or feasible, then PPE may be required. PPE, which is appropriate to the hazards and properly fitted, is often used in the following situations:

- As a temporary measure till a more effective control can be established;
- If other controls are impossible or not as effective or efficient as personal protective equipment;
- During routine maintenance or emergency clean up procedures.

PPE is also sometimes required even when other control measures have been introduced, e.g. when handling hazardous substances.

9. Applying Control Measures

The higher the control strategy is on the hierarchy order, the more preferable and effective it is. Control measures can be used to reduce or eliminate the identified hazard.

Often, more than one control option may be used to minimise risk, e.g. exhaust ventilation plus the wearing of gloves and goggles.

In many cases there will be a number of control options available. The decision about the control measures to be used should be made in consultation with the affected employees, taking into account the hierarchy of control measures.

When considering control measures it is sometimes necessary to apply a control measure which is at the bottom of the hierarchy, for example PPE, as a short term solution until a more effective control measure can be instituted.

However, PPE may still be required even though control measures are in place e.g. construction item such as hard hat and boots.

Risk Assessment Guidelines

This Risk Assessment has been reviewed using the following minimum key criteria. Only those items which were identified as a possible risk has been included within the assessment.

Entanglement: Can anyone's hair, clothing, gloves, cleaning brushes, tools, rags or other materials become entangled with moving parts of the plant or materials?

Impact and Cutting Injuries Can anyone be crushed/cut/struck etc. due to:

- Material falling off the plant?
- Uncontrolled/unexpected movement of plant/load?
- Lack of capacity to slow, stop or immobilise plant?
- The plant tipping or rolling over?
- Parts of the plant disintegrating or collapsing?
- Contact with moving parts during testing, inspection, operation, maintenance, cleaning or repair?
- Being thrown off or under the plant?
- Contact with sharp or flying objects? (e.g. work pieces being ejected)
- The mobility of the plant?
- Inappropriate parts and accessories being used?
- Other

Shearing Can anyone's body parts be sheared between two parts of plant, or between a part of the plant and a work piece or structure?

Pressurised Content Can anyone come into contact with fluids or gases under high pressure, due to plant failure or misuse of the plant?

Electricity: Can anyone be injured or burnt due to:

- Live electrical conductors? (e.g. exposed wires)
- Working in close proximity to electrical conductors?
- Access to electricity?
- Damaged or poorly maintained electrical leads, cables or switches?
- Water near electrical equipment?
- Lack of isolation procedures?
- Other

Ergonomics: Can anyone be injured due to:

- Poorly designed workstation?
- Repetitive body movement?
- Constrained body posture or the need for excessive effort?
- Design deficiency causing psychological stress?
- Inadequate or poorly placed lighting?
- Does the plant impact on the surrounding workplace and create potential hazards? (Consider safe access and egress from plant, workflow and design of the workplace)
- Is the location of the plant inappropriate? (Consider potential effects due to environmental conditions and terrain)
- Other

Radiation Can anyone using the plant, or in the vicinity of the plant suffer injury or illness due to exposure to radiation in the form of any of the following:

- infra-red radiation
- ultra violet light
- microwaves

Noise: Can anyone using the plant, or in the vicinity of the plant, suffer injury due to exposure to noise?

Vibration: Can anyone be injured or suffer ill-health from exposure to vibration?

Friction: Can anyone be burnt due to contact with moving parts, materials or surfaces of the plant?

Suffocation: Can anyone be suffocated due to lack of oxygen, or atmospheric contamination?

Condition: Is a hazard likely due to the age and condition of the plant? (Consider how hard the machine has been worked, and whether it is used constantly or rarely).

Can anyone be injured as a result of the plant not serviced appropriately and/or maintained in line with manufacturer's recommendations?

Slips / Trips / Falls: Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to:

- Uneven, slippery or steep work surfaces?
- Poor housekeeping, e.g. spillage in the vicinity?
- Obstacles being placed in the vicinity of the plant?
- Inappropriate or poorly maintained floor or walking surfaces (i.e. lack of a slip-resistant surface, unprotected holes, penetrations or gaps?)

If operating or maintaining plant at height can anyone slip, trip or fall due to:

- Use of work platforms, stairs or ladders?
- Lack of guardrails or other suitable edge protection?
- Other?

Fire and Explosion: Can anyone be injured by fire?

Can anyone be injured by explosion of gases, vapours, liquids, dusts, or other substances?

Temperature / Moisture: Can anyone come into contact with objects at high or low temperatures?

Can anyone suffer ill-health due to exposure to high or low temperatures?

Can anyone be injured or suffer ill-health due to exposure to moisture?

Other: Can anyone be injured or suffer ill-health from exposure to:

- Chemicals?
- Toxic gases or vapours?
- Fumes/Dusts?
- Other? (please specify)

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
1. SET UP a. Less than adequate site set up	Y	B	3	Med	• Trained and competent operator	• Ensure traffic management is set up according to plans • Carry out "Job Safety Audit" for any use of lighting trailer on or near roads. Introduce risk control accordingly. • Ensure all cables do not cross over the path pedestrian or vehicle traffic • Set up barricades e.g. witches hats • Install cable trip boards as necessary across walkways.	B	2	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
2. SITE AWARENESS a. Operators may suffer injury or ill health through lack of awareness of risks on site.	Y	B	2	Med	• Operators regularly visit most pick-up / drop-off sites and are aware of relevant safety issues • Operators given a safety checklist to complete for new sites • Project / Administration staff ask for information on site rules, unloading arrangements etc. and fix this to delivery note • Drivers told to stay in a safe area when lift trucks etc. are working	• Ensure drivers are told about relevant safety issues at the sites they are visiting	A	2	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
3. SLIPS AND TRIPS a. Staff may suffer injuries such as fractures or bruising if they slip on spillages or trip over objects.	Y	A	3	Low	• Drivers wear strong, comfortable footwear with a good grip • Good housekeeping in yard, offices and on vehicles	• Consider using non-slip surfaces where applicable	A	3	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
4. ENTAGLEMENT a. Can anyone's hair, clothing, gloves, jewellery, cleaning brushers, rags or other material become entangled with moving parts of the plant, or materials in motion?	Y	A	2	Low	• Any factory fitted guards to plant or equipment must never be removed or altered. • Machine to be shut down during maintenance and unauthorised persons in area. • PPE is to be worn and first aid kit be available. • LUEZ requirements are to be adhered to at all times. • Certificate of competency for all machine and plant operators	• Current controls are reviewed at the commencement of each activity	A	2	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
5. CRUSHING INJURIES a. Can anyone be crushed by material falling off plant? b. Can anyone be crushed due to uncontrolled or unexpected movement of the plant or its load? c. Can anyone be crushed due to the plant tipping or rolling over?	Y	B	1	High	• Certificate of competency for all machine and plant operators. • SWMS for site specific/equipment operations. • LUEZ zones where applicable prior to any works taking place • Ground stabilisation - Exclusion for operator interaction whilst working on unstable/unsteady ground.	• Current controls are reviewed at the commencement of each activity	A	1	Med

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
6. MOBILITY a. The mobility of the plant	Y	A	2	Low	• Authorised ground operators working in conjunction with plant operator. Eye to eye contact when traversing machinery. • Exclusion zones (LUEZ) established. • SWMS for working around machinery. • PPE and first aid kit available. Flashing beacon on roof of machine.	• Current controls are reviewed at the commencement of each activity	A	3	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
7. SHEARING a. Can anyone's body parts be sheared between two parts of the plant, or between a part of the plant and a work piece structure?	Y	A	1	Med	• Labelling and identification of all pinch points and no go area on machinery. • Follow standard operational machine practiced. • Plant operator to have visual on ground crew at all times. • SWMS reviewed prior to work commencement.	• Current controls are reviewed at the commencement of each activity	A	1	Med

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
8. ROLLOVER OF PLANT a. Can anyone be injured from plant tipping over or slide / roll during operation?	Y	B	1	Med	• Ground stabilisation. • Competent plant operator. • Exclusion for operator interaction whilst working on unstable/unsteady ground. (LUEZ) • Operate plant and equipment as per manufacturer's guidelines. • Visual contact between ground crew and operator. • SWMS for works in moving shifting or uneven grounds. • PPE and first aid kit available. • Flashing beacon on roof of machine.	• Current controls are reviewed at the commencement of each activity	A	1	Med

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
9. ELECTROCUTION – POWER LINES a. Can anyone be injured working near Power Lines b. Can anyone be injured working in inclement weather conditions – e.g. Lightening	Y	C	1	High	• All power lines are to be identified with a site walk through prior to the commencement of works. • No work is to be conducted near overhead lines • All overhead lines are to be identified on the site map and physically upon the line itself • All work to cease whilst lightning bound weather is impinging on site. • Daily weather reports highlighted during high lightning activity.	• Current controls are reviewed at the commencement of each activity	B	1	High

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
10. PRE-STARTS AND MAINTENANCE a. Can anyone be injured if Pre-starts are not performed b. Location of equipment for maintenance	Y	B	4	Low	• Equipment inspection done pre start as per operation requirements by authorised operator in sound machine position. • Breakdown and major service done in isolation to works area. • Exclusion zone for authorised and competent person.	• Current controls are reviewed at the commencement of each activity	A	4	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
11. LOADING / UNLOADING - GENERAL a. Can injuries occur during loading and unloading	Y	C	2	High	• SWMS required before starting works. • Manufactures guidelines for all vehicle interaction with two vehicle interface. • Authorised and competent plant operator. • Exclusion zones whilst loading or unloading. • PPP required • All associated personnel must be aware of the safety requirements of the site • All contractors must be inducted • In the case of cranes, all log books must be inspected, along with licences and certificates of insurances. Caren operators are to provide their own SWMS. • Ensure all lifting equipment is serviceable and operators are trained in the correct use • Ensure when picking up product, loads are even and will not shift • Be aware of climatic conditions – loads moving and plant moving unexpectedly on the surface	• Current controls are reviewed at the commencement of each activity	A	2	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
12. VEHICLE AND DRIVER a. Checking vehicle before driving b. Can an incident or injury occur whilst driving on roads, highways, freeways, and gravel roads?	Y	B	1	High	• Make sure a prestart is performed. • The driver has the correct licence to drive the vehicle. • Set radio to desired station before moving off, to ensure no distraction while driving. • Plan trip and have necessary navigation equipment, e.g. maps, GPS etc. • Make sure there is two-way radio and in working order. • Check that the vehicle has first aid, fire extinguisher and reflector triangles. • Ensue the driver is in a fit state to drive (tiredness, drugs, alcohol or illness) • Only licensed drivers are permitted to drive. • Drive conservatively, observe current rules of the road. • Make sure you have your national driver log book in the vehicle at all times. • DO NOT use mobile phone while vehicle in motion. Stop vehicle if you require to answer phone. • DO NOT fiddle with radio while vehicle in motion. • Be aware of animals on roads and verges, particularly at dawn and dusk, slow down. • DO NOT read maps whilst driving vehicle. Use GPS unit where possible. • Drive to the road conditions i.e. slowdown in rain on poorly constructed gravel roads.	• Current controls are reviewed at the commencement of each activity	A	1	Med

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
13. VEHICLE BREAKDOWNS									
a. Can an incident or injury occur when truck break downs?	Y	A	3	Low	• Exercise extreme care on the traffic side of the truck, make sure your wearing reflective vest. • Make sure you put the reflective triangles at the back and front of truck at the correct distance from truck. • Position the truck as far off the road as possible and turn hazard lights on. • Warn oncoming traffic of hazard if safe to do so. • Stay with truck and contact supervisor and ask for assistance if required	• Current controls are reviewed at the commencement of each activity	A	3	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
14. FIRE a. Can an incident or injury occur whilst refuelling a vehicle?	Y	A	3	Low	• Remain with truck whilst refuelling. • Follow directions and warnings at fuel outlets. • Adhere strictly to warnings prohibiting the use of electronic equipment. • Only fill appropriate fuel in truck. • Always discharge static electricity before touching fuel pumps.	• Current controls are reviewed at the commencement of each activity	A	3	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
15. SITE ACCESS a. Can an incident or injury occur when driving to and from access work area?	Y	A	2	Low	• Obey traffic signage. Sign onto pre work briefing e.g. (SWMS, JSA, SITE INDUCTION). • Daily operator's plant inspection. • Communication with site supervisor. • Flashing light to be fitted to the vehicle and turned on when entering site. • Driver must be licensed. • Be aware of other mobile plant on site. • Do not block roads or throughways. • Vehicle to contain first aid kit and fire extinguisher. • Vehicle must not be overloaded and loads must be secured properly. • Personnel are not to use handheld mobile phones whilst driving. • Personnel are to wear seat belts at all times. • Personnel are to wear the appropriate PPE at all times. • Personnel are to immediately report any hazards identified to the site manager	• Current controls are reviewed at the commencement of each activity	A	2	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
16. SUN EXPOSURE a. Skin Cancer?	Y	C	3	Med	• Trained and competent operator • Be aware and trained in the use of correct PPE	• Hat and sunscreen protection • Long pants and long sleeve shirts • Sunglasses • Rehydrating with water • On very hot days' regular rests and breaks are recommended by policy • If in open areas use shading, where possible.	B	4	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
17. DRUGS & ALCOHOL a. Operating equipment while under the influence of drugs/alcohol can lead to a serious accident	Y	C	3	Med	• Trained and competent operator • Be aware all sites are alcohol / drug free	• All staff are not to be under the influence of illegal drugs or alcohol while operating equipment • Failure to comply will result in disciplinary actions – potentially immediate termination	B	3	Med

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
18. INADEQUATE VENTILATION WHEN CHARGING a. Inadequate ventilation when charging batteries which could result in a fire or explosion	Y	A	3	Low	• Trained and competent operator • Breathable vents fitted to rear of battery box. • Fit "CARRY OUT CHARGING OF BATTERIES IN WELL VENTILATED AREAS ONLY-DANGEROUS VOLATILE GASSES ARE EMITTED DURING CHARGING-EXPLOSION RISK-NO NAKED FLAMES" warning signs to battery charger and to lighting trailer in proximity to charger plug base – Labelled within the box • Warning Sign clearly displayed on Mast	• None	A	3	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
19. NOISE LEVELS a. Exposure to high noise levels that exceed the legal threshold, resulting in loss of hearing	Y	A	3	Low	• Trained and competent operators • Noise level below legal threshold when operating	• None	A	3	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
20. MAINTENANCE a. Burns, electrocution and entanglement	Y	B	2	Med	• Trained and competent operators • Proficient in operating instruction / process	• Fit IP66 rated weatherproof and lockable type main power output isolator switch with identification & function • signs. • Fit IP66 rated weatherproof main fuse box with main power switch, residual current device (safety switch) and circuit breakers for 240 volt circuits. • Fit battery isolator to battery cables with identification and function signs. • Insulation leakage & earth continuity tests must be carried out on battery charger and machine 240 volt circuits in accordance with AS 3000 & AS 3760 (2003). Fit current compliance safety test tag to power lead. • Operator to conduct check of cables and fittings for damage • Fit "WARNING SWITCH OFF AND ISOLATE POWER CABLES AND CONNECTIONS TO EXTERNAL APPLIANCES PRIOR TO SERVICING" signs to both sides of battery box. • Isolate all equipment prior to conducting maintenance work. • Ensure that all equipment is fully de-energised prior to work • Ensure cables are not left where they can to get damaged from falling objects, pedestrian or mobile traffic	B	4	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
21. ELECTROCUTION - UNIT a. Burns and electrocution	Y	B	2	Med	• Trained and competent operators • Proficient in operating instruction / process	• Fit "DANGER HIGH VOLTAGES ONLY TRAINED & AUTHORISED PERSONNEL TO ACCESS" warning signs to both access covers. • Fit "WARNING SWITCH OFF AND ISOLATE ENGINE, POWER CABLES AND CONNECTIONS TO EXTERNAL APPLIANCES PRIOR TO SERVICING." Signs to both sides of cubicle. • Fit identification signs to all power outlets as per Australian Standards & Plant Code of Practice and AS 3000. • (Voltage, circuit No. & application). • Do not operate Lighting Trailer battery charger in wet conditions.	B	4	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
22. TOWING THE UNIT a. Equipment fish tailing and rolling over if towed too fast around bends	Y	C	4	High	• Trained and competent operator • Safety chains fitted • Override brakes fitted • Safe towing instructions fitted. • "MAXIMUM SEED 80KPH" sign fitted	• When being towed, driver to tow machine according to road condition and never exceed manufactures maximum speed. • Ensure driver is experienced in towing • Ensure the driver is not fatigued • Ensure that the driver is not under the influence of drugs or alcohol • Fit “MAST MUST BE FULLY LOWERED WHEN TOWING” signs to draw bar.	D	4	Med

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
23. MOVING PARTS a. Moving parts of lighting mast hoist system may cause entanglement causing serious injury	Y	A	3	Low	• Trained and competent operator • Auto Brake Fitted • Warning label fitted to mast	• Fit “CAUTION - KEEP CLEAR, ENTANGLEMENT RISK”, sign to both sides of rotating pivot and manual mast hoist winch. • Fit “CAUTION - KEEP CLEAR, PINCH POINTS”, sign to both sides of mast. • Fit reflective tiger tape to outer edges of lighting mast. • Fit telescopic mast locking pin system. System must provide for mechanical locking of mast in the raised and stored positions in accordance with AS 2550. Fit installation instruction signs in accordance with AS 1319.	A	2	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
24. MANUAL HANDLING a. Back injury, strains and sprains	Y	B	3	Med	• Trained and competent operators • Proficient in operating instruction / process	• Develop ongoing manual handling training • Use jockey wheel to jack drawbar up and if necessary ask for assistance when hitching onto vehicle. • Follow correct manual handling techniques. • When manually loading/unloading spare wheel or replacing batteries, follow correct manual handling procedures and use a two-man lift where required. • Ensure you use 2 people to move the Lighting trailer once detached from vehicle • Use jockey wheel to lift drawbar off hitch. • Two persons may be required ask for assistance when hitching, unhitching, and/or positioning the lighting trailer, depending on individual capabilities. • Ensure manual mast hoist winch serviced and lubricated in accordance with manufactures specifications to maintain smooth operation.	A	3	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
25. UNROADWORTHY – MECHANICALLY UNSOUND a. Could result in a road accident / injury	Y	A	3	Low	• Trained and competent operators • Maintained to supplier's standards. • Maintenance Plan	• Before use inspect the relevant equipment using a Checklist before use • Report faults to Management for repair. Do not use unsafe plant. Operators must tag unsafe plant with a "Do Not Operate Tag". Always wear appropriate PPE when performing minor maintenance • The trailer must be checked for fitness of purpose before and after every job • Carry out periodic scheduled servicing to back up battery pack and electrical system to manufacturers' specifications. • Carry out light tower mast frame & hoist system maintenance, testing, repairs & all work in accordance with • AS 2550.1, AS 1735.3, AS 1418.1, & AS 1418.10 (Annual maintenance schedule).	A	4	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
26. PEDESTRIANS / WORK SITE COLLEGUES a. Driving into bystanders	Y	B	2	Med	• Trained and competent operators	• Driver to ensure pedestrians and general public are in vision of the driver and clear of vehicle before proceeding forward or reversing. • Complete Risk Assessment (RA) or Hazard Assessment • Works area to be fully cordoned off from public access • Fit front & rear facing flashing beacon hazard lights and wire to operate automatically when mast is deployed. • Fit tamper proof lockable parking brake system. Fit "PARKING BRAKE MUST BE APPLIED AT ALL TIMES WHEN PARKED" sign to draw bar. • Fit "NOTICE THIS UNIT MUST NOT BE PLACED ON ROAD VERGES WITHOUT THE EXPRESS PERMISSION OF THE RELEVANT AUTHORITIES", "THIS UNIT IS NOT SUITABLE FOR USE ON SLOPING OR NON-LEVEL SURFACES", "USE STABILISER SUPPORT PADS ON SOFT OR MOIST GROUND SURFACES" signs to operator console • Fit "DO NOT STAND UNDER ELEVATED LIGHTING MAST" and "KEEP CLEAR", sign to all sides of base frame. • Fit AS1319 compliant safety helmet P.P.E. signs to base frame on both sides, sign no. 424.	A	2	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
27. LOW LEVEL IMPACTS a. Striking low level branches and objects	Y	B	2	Med	• Trained and competent operators • Look up decal fitted to manual winch area.	• Ensure spotter is used when required • Fit "ENSURE STABILSER LEGS ARE LOWERED PRIOR TO REMOVING TRAILER FROM TOW HITCH" signs to draw bar. • Tow/transport only when mast assemblies are in their stowed/transport position and secured with locking pins engaged. • Fit "MAXIMUM.....M" and MINIMUM.....M" height decals to operator stations. • Use level jacks and jockey wheel to set up/level on stable ground (not near potholes or soft edges). • Fit “NOTICE THIS UNIT MUST NOT BE PLACED ON ROAD VERGES WITHOUT THE EXPRESS PERMISSION OF THE RELEVANT AUTHORITIES”, “THIS UNIT IS NOT SUITABLE FOR USE ON SLOPING OR NON-LEVEL SURFACES”, “USE STABILISER SUPPORT PADS ON SOFT OR MOIST GROUND SURFACES”, “WARNING THIS UNIT IS NOT INSULATED DO NOT USE IN PROXIMITY OF LIVE CONDUCTORS”, “LOOK UP & LIVE” signs to operator console. • Ensure area is clear of obstructions and Lighting trailer has sufficient room to carry out required task • Complete Risk Assessment (RA) or Hazard Assessment • Fit “MAST MUST BE FULLY LOWERED WHEN TOWING” signs to draw bar.	A	2	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
28. POOR WEATHER CONDITIONS a. Poor weather conditions resulting in dangerous driving	Y	B	2	Med	• Trained and competent operators	• Operators should reduce their speed in adverse conditions; particularly on poor roads that are unsealed • Always remain aware of other vehicles around you; high winds are more problematic for drivers of trucks and large vehicles. • Be aware of high winds when moving from one area to the next, or when approaching/passing large vehicles to reduce your speed and correct you’re steering • Stay alert for pot holes and debris on the road. • Make sure you have a pair of sunglasses in your vehicle in case of bright sunlight • Ensure staff use high visibility vests when setting up Lighting trailer and have assessed the hazards before setting up. • Fit “THIS UNIT IS NOT SUITABLE FOR HIGH WIND CONDITIONS, BASE FRAME MUST BE SECURELY ANCHORED IN HIGH WINDS”, sign to frame. • Fit “CAUTION OVERTURNING RISK, DO NOT TOW IN HIGH WINDS”, sign to base frame. • Fit “DO NOT STAND UNDER ELEVATED LIGHTING MAST”, KEEP CLEAR”, sign to all sides of base frame. • Fit "MAXIMUM ALLOWABLE WIND SPEED ....M/S" sign to operator console in accordance with manufactures' specifications.	A	2	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
29. PLANT TIPPING OVER a. Plant tipping or rolling over resulting in serious injury	Y	B	2	Med	• Trained and competent operators • ADR complaint park brake and manual over ride brakes fitted. • Stabilizer legs fitted.	• Ensure handbrake is engaged at all times when plant is stationary • Never turn machine on a slope • Take caution when operating in wet conditions – avoid soft surface areas • Operate on firm level ground within the design limitation of the Lighting trailer • Take care when operating on rough or uneven ground • Be aware of soft edges on the sides of roads and place vehicle and Lighting trailer clear of edges on firm ground. • Fit “THIS UNIT IS NOT SUITABLE FOR USE ON SLOPING OR NON-LEVEL SURFACES”, “USE STABILISER SUPPORT PADS ON SOFT OR MOIST GROUND SURFACES” signs to both sides of plant. • Fit “THIS UNIT IS NOT SUITABLE FOR HIGH WIND CONDITIONS, BASE FRAME MUST BE SECURELY ANCHORED IN HIGH WINDS”, sign to frame. • Fit "ENSURE STABILSER LEGS ARE LOWERED PRIOR TO REMOVING TRAILER FROM TOW HITCH" signs to draw bar.	A	2	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
30. MAST ASSEMBLY COLLAPSING a. Mast assemblies collapsing when being set up and in use	Y	A	3	Low	• Trained and competent operator • Limit switch fitted.	• Ensure lighting trailer and mast assemblies correctly secured with locking pins when being set up and when in use. • Fit automatic, spring loaded type mast locking pin system. System must provide for mechanical locking of mast in the raised and stored positions. Fit installation instruction signs in accordance with AS 1319. • Fit reflective tiger tape and ISO type “KEEP CLEAR, CRUSHING ZONE” signs to mast telescopic slides. • Fit AS 4024 compliant (permanent) guarding to mast winch assembly to prevent access to rotating gears etc. • Fit identification "SLEW BRAKE" and function "ENGAGE/DISENGAGE" signs to slew brake controls in accordance with AS 1319.	A	4	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
31. UNAUTHORISED USE a. Unauthorised use	Y	A	2	Low	• Trained and competent operator • Lockable type cabinet fitted to control panel.	• When leaving machine unattended close and lock all doors, and remove keys • Fit 'AUTHERISED PERSONAL ONLY" sign to both sides of plant.	A	3	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
32. EQUIPMENT ROLLING AWAY a. Striking bystanders and / or other equipment	Y	B	3	Low	• Trained and competent operator • ADR compliant parking brake system fitted. • Stabilizer legs fitted.	• Chock wheels on slopes, or when hitching/unhitching from towing vehicle, positioning or setting up for use, parking, or leaving the Lighting trailer unattended. • Fit wheel chocks to plant with check chains or lanyards to prevent loss. • When hitched together for towing, ensure the all parts are fully engaged and secured with the locking pin. • Always connect the safety chains to the towing vehicle before towing.	A	3	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
33. WORKING AT HEIGHTS a. Working at heights to access lights to tilt manually	Y	B	3	Low	• Trained and competent operator • ADR compliant parking brake system fitted. • Stabilizer legs fitted.	• Fit serrated edge step treads and minimum 100 mm treads to provide access to mast lighting head. Steps must be fitted with SAA 59 ergonomic standard & AS 1657 compliant handrails and grab handles (slips, strains and falls protection). • Fit yellow coloured anti slip nosing's to all treads. • Fit "DANGER, FALLS RISKS, PERSONNEL MUST CONDUCT A HEIGHT RISK ASSESMENT TO DETERMING APPROPRIATE CONTROLS" sign in proximity to access steps. • Fit "DANGER: WORKING AT HEIGHTS FALLS INJURY RISKS, DO NOT CLIMB ONTO BODY AT ANY TIME WITHOUT CONDUCTING HEIGHT RISK ASSESSMENT E.G. USE OF FALL PROTECTION SYSTEM", sign to both sides of lighting mast head access steps.	A	3	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
34. HIGH TEMP OR PRESSURE / FIRE/EXPLOSION a. High Pressure Fluid Jets b. High Temperatures Design Code: AS1418.10-1.14 Maintenance Code: AS2550.10-10	Y	C	3	Med	• High temperature components are positioned away from operator, on the opposite side of the machine from the controls. Exhaust outlet through roof of trailer. High-pressure hydraulic hoses are secured together with fasteners and in potential failure areas (tight radius bends) are covered in spiral wrap. A fire extinguisher is provided inside trailer in case of emergency • Hydraulic hoses used have a bursting pressure far in excess of the working pressure. • Hot surfaces are positioned away from operator. A fire extinguisher is provided inside trailer in case of emergency.	• These hazards are related to incorrect and or lack of maintenance. Correct inspection and maintenance procedures are placed in the manual. Regular maintenance in accordance with AS2550.10 is required. • Inspection and maintenance procedures (including warnings) are placed in manual. • Operating & maintenance procedures are placed in manual.	B	3	Low

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
35. ELECTRICAL									
a. Review of electrical risks Design Code AS3000 AS1418.10-1.7	Y	C	4	High	<u>Accidental electrical shock</u> • Cables insulated & secured to plant. Major current carrying cables are marked in the standard colours for positive and negative. These cables have protective rubber boots over connection points to prevent contact shorting during maintenance <u>Loose wire shorts</u> • Connectors used are either insulated crimp lugs, locking plastic plugs, or permanent type clamps. Wiring is protected against rubbing in exposed areas with flexible braided sheathing. <u>Water Bridging</u> • Wiring looms of control boxes are covered with water resistant covers. Looms are clamped together with ties to prevent vibration damage. Control cards for functions and flow control are encased in epoxy resin to prevent water damage. Machines are tested for water damage. Electrical connections are prevented from corroding with a silicone type paste. <u>Pump or motor failure</u> • In the advent of electrical or mechanical failure, a manual lowering system is installed on the machine. Ground controls are in trailer to prevent damage from inadvertently hitting objects.	• Regular inspections to AS2550.10. Maintenance procedures are placed in the manual maintenance should be carried out by trained personnel. • Warning decals are placed on the machine. Safe operating procedures and allowable distance to power lines are placed in the manual. • Inspection and maintenance procedures are placed in the manual and are to be done in accordance with AS2550.10-10. • These plants have malfunction signals to assist in fault finding	D	4	Med

Hazard	Y/N	Risk Matrix			Current Controls / Comments	Proposed Controls – Who & Date	Revised Risk		
		L	C	Risk			L	C	Risk
36. STRUCTURAL FAILURE Component failure due to fatigue Component failure due to corrosion or wear General overload e.g. use as a crane (which is unintended)	Y	C	3	Med	• Structural integrity verified by independent engineer. • Corrosive surfaces are painted, components subject to wear have provisions to minimise wear by using sacrificial components or lubrication e.g. boom sections use wear pads/rollers along telescoping sections, pins use self-lubricating bushes. Components which are not self-lubricating have grease nipples provided. • A relief valve is used to prevent excessive loads being lifted. Tools are required to alter pressure settings. Test points are provided for checking of pressures.	• Regular inspection in accordance with AS2550.10. Annual inspections are required as stated in manual. • Inspection and maintenance procedures are placed in the manual and are to be done in accordance with AS2550.10-10. The manuals provided with the plant are in accordance with AS1418.10-1.4. Lubrication points and a schedule for maintenance are included in the manual to reduce chance of fatigue. • Warning decals are placed on machine to show safe working loads. Safe operating procedures are placed in manual. Correct pressure settings are placed in the Manual	B	3	Low

RISK ASSESSMENT REVIEW

Name of person communicating the risk assessment/s		Date of Risk Assessment Review	

I acknowledge that I have read and understood the Risk Assessment associated with this task/event/equipment etc.

Name	Signature	Department	Date