

## 19. Health and safety

This section describes the general environmental values of the project area, and potential impacts and mitigation measures related to health and safety issues associated with the proposed MLARP. Emergency management procedures are also outlined to address the range of situations that were identified in the risk assessment section.

### 19.1 Description of environmental values

The main community value for public health and safety that may be affected by the Project is air quality due to construction activities. The EPP(Air) goals as described in Section 10 of this EIS are used to assess potential air quality impacts at sensitive locations near industrial sites and extractive industries.

Exceedances of the 24-hour average PM<sub>10</sub> of 150 µg/m<sup>3</sup> were recorded at three Gladstone monitoring stations and the Targinie monitoring station on only two days during the period 2001-2005. Both of these exceedances were attributable to dust storms and/or bush fires that affected the region.

Dust levels in Gladstone are currently below levels likely to cause adverse health effects. The existing air quality in the Gladstone area is further described in Section 10 of this EIS.

### 19.2 Potential impacts and mitigation measures

#### 19.2.1 Project construction workforce

Potential safety hazards associated with construction activities will include:

- Working at heights – risk of falls, risk of falling debris/objects
- Working in the vicinity of heavy equipment – risk of accident/injury
- Working in confined spaces – risk of suffocation
- Working with electricity – risk of electrocution
- Working with chemicals/dangerous goods – risk of spillage and/or injury
- Working with tools – risk due to unsafe work practices
- Heavy lifting – risk of injury
- Operation of machinery and equipment

A summary of potential health and safety risks and associated mitigation measures for the construction phase of the Project are outlined in Table 19.1.

**Table 19.1 Potential workforce health and safety risks and mitigation measures**

Health and safety risks	Mitigation measure(s)
Construction workplace accidents	<ul style="list-style-type: none"> <li>• Contractor to develop a construction Safety Management Plan to be reviewed and approved by QR before implementation.</li> </ul>
Occupational noise exposure	<ul style="list-style-type: none"> <li>• Contractor to identify areas where occupational noise will reach levels where hearing protection is required and to ensure hearing protection is used within these areas.</li> </ul>
Hazardous chemicals and materials exposure	<ul style="list-style-type: none"> <li>• Contractor to develop a construction Safety and Environmental Management Plan to be reviewed and approved by QR before implementation.</li> </ul>
Dust exposure	<ul style="list-style-type: none"> <li>• Contractor to employ dust mitigation methods such as regular watering of construction access roads during dry and windy periods.</li> <li>• Refer to Section 20.</li> </ul>

To increase general site safety and to assist in preventing minor injuries during Project construction it is recommended that all persons on site wear appropriate Personal Protective Equipment (PPE) including:

- Hard hat
- Safety glasses
- Steel capped boots
- High visibility clothing
- Ear protection when conditions warrant their use
- Dust masks when conditions warrant their use
- Other equipment as required and applicable

The construction contractor will comply with the relevant health and safety legislation.

### 19.2.2 Project operational workforce

QR workplace health and safety procedures will be implemented for the operational workforces employed on the Project. A detailed safety operational plan will be developed for the yard and supporting rail infrastructure facilities.

The major hazards associated with rail track operations as described in the QR Emergency Plan are:

- Level crossing emergency
- Person hit by train
- Derailment
- Collision
- Fires
- Track obstructions
- Dangerous goods emergency
- Environmental emergency

### 19.2.3 Impacts on the community

#### Air quality

In regards to air quality, dust is the predominant community health and safety issue during construction and operation. Odour has been considered and is likely to be well below levels of concern.

Dust impacts to the community during construction of the Project are unlikely to be substantial due to the separation distance to major residential locations (refer Section 10).

Mitigation measures for dust during construction and operation are outlined in Section 20.

#### Noise

##### *Construction impacts and mitigation measures*

The potential noise impact from construction activities have been assessed in Section 11.

Based upon the noise assessment, rail construction to be undertaken in close proximity to residential areas should not be undertaken outside “normal” construction hours unless prior notification is given to the affected property owners in accordance with QR’s Code of Practice for Railway Noise Management.

It is preferred that the quietest suitable plant and equipment be utilised in conjunction with management measures to achieve minimal noise impacts on the local community (ie sensitive receptors).

The levels of diesel engine noise emissions associated with construction machinery are largely dependent on the extent of exhaust silencing and whether the engine is housed within an acoustic enclosure. Noise emission levels also depend upon the condition of the equipment and the type of operation.

Noise emissions from activities such as pile driving, rock breaking and rock drilling are less amenable to engineering noise control techniques. Management of such noise impacts is achieved through measures including the efficient scheduling of these activities within those times of the day where noise from such sources will be least likely to be disruptive.

Noise mitigation strategies, along with other mitigation strategies detailed in the Australian Standard AS2436-1981 "Guide to Noise Control on Construction, Maintenance and Demolition Sites" will be applied where applicable (refer Section 11).

#### *Operational impacts and mitigation measures*

Rail operations for the Project are predicted to not exceed the limiting criteria. The additional rail traffic associated with the Project is unlikely to affect single event maximum and  $L_{eq}$  (24hr) noise levels significantly at locations that are currently exposed to rail movements (refer Section 11).

Potential mitigation measures, if identified as being warranted, will be developed as part of detailed design.

#### **19.2.4 Pests**

In Queensland, mosquitoes are carriers of Ross River fever, Barmah Forest virus, dengue fever, and encephalitis. Breeding sites include fresh, brackish and polluted water in natural and constructed ground sites as well as artificial containers such as water storage tanks and constructed drains.

It is essential that the implementation of stormwater management systems, water storage areas and water recycling facilities does not enhance mosquito breeding and the transmission of disease. The Local Government Association of Queensland has produced a Mosquito Management Code of Practice (LGAQ 2002) that contains detailed advice on mosquito control in Queensland.

Consideration will be given to potential mosquito breeding in the detailed design phase. Queensland Health (2002) has published guidelines to minimise mosquito and biting midge problems in new development areas. This document provides advice on how to prevent or minimise the impact of mosquitoes and other biting insects in new development areas.

The design of the Project will facilitate overland and instream flow and minimise pooling along embankments and within the Aldoga Rail Yard. The construction site will be maintained to minimise potential mosquito breeding grounds such as grading to remove hollows that may allow ponding of water.

The proposed Aldoga Rail Yard is unlikely to create additional mosquito breeding areas. All potentially contaminated water from these areas will drain to oil and grit separators. Site areas outside of buildings will drain into the stormwater system.

Constructed wetlands, water impoundments, grass swales and open earth drains can all be designed so as to minimise mosquito breeding. The Australian Mosquito Control Manual (Mosquito Control Association of Australia 2002) has helpful advice on mosquito control.

The following strategies will be implemented to minimise disease vectors:

- Regular maintenance of all structures associated with storage or treatment of recycled water is necessary to minimise mosquito breeding. For example, if mosquitoes are present in open water storage, water plants should be cleared away from the edge of the storage to reduce habitat for larvae. In particular, recent research suggests that dense mats of surface vegetation or fallen decaying material can encourage mosquito breeding (Dale *et al* 2001).
- When recycled water is used for irrigation, surface ponding should be prevented by appropriate irrigation scheduling.
- Open recycled water storages should be monitored regularly to identify presence of mosquito larvae.
- If a potential health risk from mosquito breeding has been identified, biological control using natural predators, such as aquatic invertebrates or native fish known to prey upon mosquito larvae, may be considered.
- Construction and installation of water storages will be carried out in accordance with Part 8, *Mosquito Prevention and Destruction of the Health Regulation 1996*. Where a risk assessment process has identified that there is a significant risk of mosquito borne disease, holding tanks for recycled water should be designed so as to prevent entry of mosquitoes.

### 19.3 Security arrangements

The rail yard construction area may be fenced at key public access locations in the early stages of construction and a security point established at the site entry. The extent of fencing required will be dependent on existing land use (eg cattle grazing) and access requirements. This will be determined through consultation with local landowners, leaseholders and stakeholders.

Security for the operational phase of the Aldoga Rail Yard will be managed by a designated staffed sign in point and where appropriate full entry control point security. Site specific security instructions will be developed for the Aldoga Rail Yard.

### 19.4 Emergency response capabilities

#### 19.4.1 First aid

To provide first aid during the construction stage it is intended that the principal contractor will provide an equipped first aid room. Staff with first aid qualifications will be located near the first aid room and will be called by security when needed. The principal contractors and subcontractors will ensure that qualified first aiders are included in work crews. These first aiders will provide the initial response while awaiting the arrival of the Queensland Ambulance Service. First aid kits for use by these first aiders will be provided at all work locations.

To provide initial first aid at the Aldoga Rail Yard during operations QR intend to ensure that there are several trained first aiders on each shift and also they will place first aid kits in strategic locations. For more serious first aid situations a first aid centre will be provided at the administration office. The shift controller will be responsible for the more serious first aid cases and will ensure appropriate treatment is provided or that the patient is taken care of until the Queensland Ambulance Service arrive.

#### 19.4.2 Fire management

During construction to reduce the risk of bush fires the right of way and yards will be cleared at the start of construction. Following clearing fire danger will be reduced by keeping the construction area mowed. If a fire occurs during construction, the contractor's staff will control the fire using basic fire control techniques within the limits of their training. In the event that the fire can not be contained the Emergency Services will be contacted.

During the construction phase all workshops, office and administration buildings, amenities, accommodation areas and working sites will be adequately covered with the appropriate fire protection and/or detection measures, which will take into consideration bushfire management. This may include, but is not limited to, the following:

- First intervention fire protection, including portable fire extinguishers, fire hose reels, fire blankets and lay flat fire hoses
- Fire detection systems, including smoke detectors and panels
- Warning sirens and lights and evacuation plans
- Site fire truck or towable fire trailer for emergency personnel to operate and the appropriate access to all areas

During operations the procedures to be carried out when a fire is noticed or reported at a station, in a stabling depot, on board a train or next to the track are outlined in QR standard procedures. In summary, the person detecting a fire notifies the Train Controller who contacts Emergency Services. While waiting for Emergency Services QR personnel try to control the fire using basic fire control within the limits of safety and training. Emergency situations not under the control of Train Controllers are managed in accordance with a relevant site plan.

### **19.5 Emergency management plan**

The framework that enables QR to prepare for, prevent, respond to and recover from emergency situations and to provide support to disaster operations is outlined in QR Standard for Emergency Management.

QR has multiple levels of emergency management depending on the scale and location of the emergency. A local instruction for the Project will be written and will set out the procedure to be followed where there is a need to evacuate the area and surrounds in the event of an emergency.

The QR Emergency Management Plan will be amended to accommodate the operational phase. An Emergency Management Plan for the construction phase of the Project will be developed. This will be compatible with the QR Emergency Management Plans.

The following strategies will be implemented during the construction phase:

- Dangerous goods shall be stored, handled and signed as per AS1940 and relevant legislation
- Material Safety Data Sheets (MSDS) shall be located at the Site Office for all hazardous and dangerous goods stored and used during construction
- Spills of hazardous materials or hydrocarbons or will be contained and collected for treatment at a licensed waste disposal facility
- Spill containment and treatment equipment and materials shall be available near storage areas of hazardous materials and hydrocarbons

A fire management plan or a fire management section in the emergency management procedures for the construction phase shall be written for emergency personnel to follow in fire situations. The fire management plan will include bushfire mitigation plans.

The involvement of the relevant state agencies (such as the Queensland Ambulance Service) during the construction phase will be outlined in construction phase emergency management plan.

## 19.6 Conclusion

The potential health and safety risks for the Project relate to construction and operational activities and their potential impact on the Project workforce and nearby community.

The implementation of workplace health and safety procedures and the EMP (refer Section 20) will minimise the potential risks to acceptable levels.

## 19.7 Commitment

The relevant health and safety commitment for the Project is:

- Prepare and implement emergency management procedures during the construction and operational phases of the Project.