

## 18. Health and safety

SunWater is committed to ensuring the health and safety of the construction workforce, its operations and maintenance staff and the community in which it operates. The Project will therefore comply with strict standards of performance, including all legislation, with the objective of completing the Project without any serious injury to the workforce and with no health effects impacting the surrounding community. A copy of SunWater's Health and Safety Policy is included in Appendix A-6.

SunWater has established a Workplace Health and Safety Management System (WHSMS) that satisfies the requirements of the Australian Standard AS/NZS 4801:2001 Occupational health and safety management systems. The WHSMS achieved third-party certification in December 2004. Independent audits are conducted every six months, and verify that SunWater's WHSMS continues to comply with the standards. Improvements in safety performance are indicated through decreasing lost time injury frequency rate (LTIFR), average lost time (or duration) rate (ALTR), total days lost and total restricted work days over the last three years.

### 18.1 Description of environmental values

The existing environment in the vicinity of the Project area is characterised by a mixture of rural activities, with a number of small communities and scattered rural residences as well as the residential and light industrial areas of Bowen. The existing environment for air, noise, water, traffic and other issues are addressed in earlier sections of this EIS.

Residents in the area have access to seven local medical centres and general medical practitioners and hospitals at Ayr, Home Hill and Bowen. A detailed profile of the local population including their occupations, age profiles and other factors relevant to determining their likely existing health needs and levels of exposure to safety issues, is presented in Chapter 16. Children and the elderly may be especially sensitive to some environmental health factors, whereas certain occupations are more likely to be exposed to specific hazards relating to their health and safety, for example agricultural or construction work. Some of these factors have already been addressed in Chapter 17.

In addition to health care facilities, there are 15 ambulance, police and fire stations to provide for the health and safety of residents in the area (Section 16.1.1). However, it should be noted that some areas are a significant distance from these services, and a rapid response can not reasonably be expected. The risks associated with agricultural work and the long-distance travel typically needed between communities in rural areas and existing health services are expected to be a significant feature of the existing health and safety environment in the region.

The Project will aim to ensure that there is no deterioration in the general level of health as a direct result of Project activities or as a result of any consequent extra demand that it might impose on existing health services in the region. The local population will be given priority with regard to employment on the Project, so that any increase in the local population during construction will be limited (Section 16.2.1). During the construction program, SunWater will consult and cooperate closely with Queensland Health, Queensland Ambulance Service, local health providers and the local community to ensure that any health concerns are addressed, proactively wherever possible and promptly where unexpected issues arise.

## 18.2 Potential impacts and mitigation measures

The focus of this section is on the health and safety implications for the public in the Project area, and on occupational health and safety issues for the Project workforce where:

- the risks faced by the Project workforce are likely to differ significantly from normal industry risks
- the Project requires specific management strategies for effective control of occupational health and safety
- the amenity and quality of life for members of the public might be affected
- there may be implications for public health systems in regard to service provision and capacity.

The risks to the construction workforce for the Project are not expected to differ significantly from other construction work. No activities are envisaged during the construction phase that would be likely to have any unusual impact on the health and safety of the construction workforce and that are not covered and adequately handled by the requirements of the *Workplace Health and Safety Act 1995* (Qld), relevant standards and codes of practice, and by SunWater health and safety system requirements. The Project workforce will potentially be exposed to typical construction site health and safety risks including exposure to noise, dust, heat, and physical injury. All contractors to the Project will be required to comply with, or demonstrate that they operate systems similar to, SunWater's WHSMS, as well as complying with the requirements of the legislation, regulations and relevant codes of practice.

### Construction phase

The hazard and risk assessment (Sections 17.1 and 17.2) noted that travel related accidents and injuries, the risk of snake bite and mosquito borne diseases are likely to be issues for the construction workforce requiring management during construction. Most construction activities are only likely to result in the worst case in injuries to individuals or a very small number of construction workers. All health and safety issues in terms of mitigation of risks are suitably addressed under legislation and relevant codes of practice (Section 17.3).

During the early works and remaining construction phase, some members of the public may be potentially exposed to increased levels of:

- dust
- noise and vibration
- traffic on local roads, including heavy vehicles.

Most construction activities for the Project will be relatively remote from any sensitive receptors and the work at any location will generally be transient in nature, with no one location likely to be affected for any significant period. Studies conducted for this EIS (Chapters 11 and 13) have indicated that exposure of the general public to dust, noise and vibration will also be limited as a result of significant separation distances (Figures 11.1 and 13.2). As a result, no sensitive receptor is likely to be significantly affected by Project construction works.

Increased traffic, and particularly heavy vehicle traffic, has the potential to increase the risk of traffic accidents on public roads. Potential traffic increases have been identified in Section 14.2. This assessment indicates that increases on main roads and local roads will generally be low and within the design capacity of the road. Similarly, intersections have been indicated as having adequate capacity to cater for the expected increased traffic flow during the construction phase. The local community will be kept informed of the likely changes in traffic during the course of the construction program through means such as newsletters and advertisements in local papers (Chapter 14). SunWater has a workplace health and safety standard for driver safety (WHS7) that has the objective of promoting safe driving including the adoption of low-risk attitudes and driver behaviours.

There is the potential for an increase in mosquito breeding areas and mosquito-borne disease during construction works. Procedures will be put in place (Section 17.3) to ensure that this potential is minimised through the elimination of breeding habitats and application of suitable prevention and control programs. As the diseases already exist in the region the main risk is placing the workforce in that region. Personal insect repellent, screens and zappers at the construction camp and frequently emptying any small containers of water will be components of the programs.

All potable water consumed on site will comply with the Australian Drinking Water Guideline 2004 and the *Water Supply (Safety and Reliability) Act 2008*. Section 12.1 refers to the possibility of recycling grey water from camps and collecting and reusing runoff from construction areas where the quality is suitable. The use of recycled grey water would be subject to the strict guidelines that exist under relevant legislation to protect the health of both workers and any members of the public that might be affected by their application, including the guideline and legislation already referred to and the Public Health Regulation 2005. The quantities involved would be expected to be small compared to total Project water requirements, and would not be applied intensively or to any food crops, so that any health effects are most unlikely. If a practical, safe use for recycled grey water can not be identified, it will be treated if necessary and disposed of as noted in Section 12.1.

The health of workers living in the construction camp will be managed through the selection of a competent camp manager/contractor and by requiring that personnel follow relevant guidelines relating to aspects of camp operation such as food preparation hygiene, cleaning and sanitation and waste management practices.

Overall, health risks are expected to be low for most people as a result of the construction phase, but there is the potential for some short term increase in risk for some people using public roads or living close to some roads or construction areas. The Project workforce will be exposed to some risk of vector-borne diseases, including Ross River Fever or Dengue Fever, that already exist in the Project area. Controls will also be needed to prevent any increase in breeding habitat for the vectors that might result in an increased incidence in the permanent population.

### Operation phase

The main potential health and safety issues during operation will include:

- exposure to hazardous materials, in particular the herbicide and algacide acrolein (toxicity)
- drowning accidents
- increase in mosquito breeding areas and the risk of vector-borne diseases as a result of more extensive irrigation.

### Acrolein

Aquatic biocides containing acrolein are used in channel maintenance activities for the control of weeds and algae. The health effects of acrolein are generally only acute (immediate) following contact with the chemical. Chronic (long-term) exposure effects are unlikely to occur because of the highly irritating nature of the material, which generally prevents any long-term exposure. Repeated exposure can make some people more sensitive and result in an asthmatic response to further exposure. It is toxic and highly irritating when inhaled, and generates rapid irritation at levels as low as one part per million in air. The maximum application concentrations are below the levels at which skin irritation occurs, so that contact with treated water should not be a health risk. Acrolein will break down in water over time once it is exposed to air (which breaks down the stabilising chemical that prevents it from decomposing during storage).

SunWater has developed a detailed manual (EM20) that describes how acrolein will be transported, stored and used safely and in accordance with regulations. This includes notification of the public and water customers when treatments are planned in an area, restricting access to the channel being treated, advising users of withholding periods to avoid use of treated water, and monitoring the concentration in the water supply to check for both effective application and safety of the treated water. Given the above controls and precautions, the effects on the general public that might arise from the use of this chemical are likely to be negligible.

### Drowning and other accidents

The entire length of the open channel will be fenced in accordance with SunWater's Fencing Policy, to prevent accidental access and limit the risk of drowning. However, it is difficult to prevent entry by persons who might set out to gain entry as the fencing will generally be of rural grazing standard. As well as the risk of drowning in the channel, there is the additional risk that persons may be accidentally drawn into other structures such as siphons, overshot control gates, culverts and the like. Siphon inlets will be protected by screens to prevent anyone being sucked into the structure. Barriers and/or warning signs will be erected for other structures where appropriate. SunWater will continue to implement public awareness campaigns with the aim to promote good water safety practices, for example the 'Blue' water safety campaign which is directed at primary school children.

It should be noted that there are numerous natural waterbodies and farm dams in the region which are not fenced, signed or protected in any way so the total increased risk is very low.

### Mosquito breeding areas and spread of disease

Ross River Fever (RRF) is known to become more common in areas where extensive irrigation is practised (University of Sydney, 2009a). It is therefore likely that the additional irrigation water provided by the Project, in addition to any direct increase in mosquito breeding habitat created directly by the Project, could potentially result in an increase in the incidence of RRF in the region. Dengue Fever is usually associated with water-holding containers associated with human habitation (University of Sydney, 2009b). Programs are already in place to monitor the incidence of RRF and the mosquito vectors, and these would be expected to be effective in identifying any significant increase in the disease. SunWater would cooperate with these programs to eliminate or treat mosquito breeding areas associated with the Project.

## Decommissioning

No particular health issues are expected to arise from decommissioning activities. However, issues noted in Chapter 17 regarding the need to remove the breeding habitat for disease vectors such as mosquitoes, and to make all remaining infrastructure safe, are relevant.