# Perform Survey Work Outside the Rail Corridor

Issue date: 27/02/08
Review date: 21/02/11

**SWMS number:**
SMS-06-SW-1114

**SWMS Name:**
Perform Survey Work Outside the Rail Corridor

**SWMS Team:**
Graeme Gaggin
Mick Athorn
Richard Plokstys
Alex Martinov
Terry Wood
Robert Thyer
David Lang
Fab De-Luca
Andrew Gell
Ray Brookes
Michael Aldama
Steve Sciglitano

**Custodian (Position):**
Senior Surveyor

**Assumptions:**

1. This statement examines the hazards and controls likely to be encountered when performing survey work outside the rail corridor. This statement is a supplement to SMS-06-SW-1110 Perform Survey Work MUST be used in conjunction with that SWMS which outlines generic risks for performing survey work in any location.
2. Job Steps 1 to 4 and 7 to 8 the same from SMS-06-SW-1110
3. Job Step 2 – "Establish method of worksite protection" would generally not apply to this SWMS
4. Depending on the type of survey being performed, the sequence of Job Steps 5 & 6 is interchangeable

**Content reviewed by Technical expert (SME) and RailCorp safety professional** (position including Div/Group)
Graeme Gaggin, Principal Surveyor

**Approving Authority (Position):**
Principal Surveyor

**Plant/Equipment/Tools:**

- Survey equipment, tools materials,
- Horn,
- Detonators, flags, lamps
- Witches' hats (cones)
- Barrier tape
- Hand drill
- Warning time calculator
- Signal box contact list

**Records/Reporting:**
SMS-06-TP-0312 Site-Specific Safety management

SMS-06-FM-0163 Pre-work briefing

SMS-06-FM-0774 Worksite Protection Plan

**Permits/licences required:**
**NA**

**Applicable Standards, Codes of Practice and guidance:**

- SPC 211 Survey Specification
- TMC212 Survey Manual
- Surveying Act 2002
- Surveying (Practice) Amendment Regulation 2006
- OHS Regulation 2001 (particularly Ch 8)
- RTA Traffic Control at Worksites
- SMS-06-GD-0372

**Inspection requirements**

- SMS-16-RG-0229 Plant Equipment Inspection Testing Register

**Service schedule:**
NA

**MIMS or METRE Ref:**
NA

**Training/Qualifications required:**

- Rail Safety Induction Certificate
- OHS General Induction
- Electrical awareness
- Surveying Certificate of Competency (Engineering Authority)

**PPE required:**

- Safety boots,
- High visibility vests,
- Safety helmet, bump hat
- Safety glasses
- Gloves

| Number | Step | Hazard or human error (Safety/Environmental hazards identified, including physical environment, human errors, plant and equipment) | Risk ranking before controls | Control (to be Implemented to eliminate or reduce the risk to the lowest practicable level) | Risk ranking after controls | Responsibility | Job step to be completed In accordance with (name associated documentation) |
|---|---|---|---|---|---|---|---|
| 5 | Marking up for survey | As identified in SWMS SMS-06-SW-1110 Perform Survey Work | | As identified in SWMS SMS-06-SW-1110 Perform Survey Work | | Team Leader | SPC 211 Survey Specification<br>TMC212 Survey Manual |
| 5 | | Road traffic | **B-** | • Wear high visibility safety vest<br>• Perform and document (in pre-work brief) a risk assessment to determine areas of work, traffic conditions and access requirements to the carriageway<br>• Use extreme caution when crossing or working on the road carriageway as car paths are unpredictable<br>• When performing work on the roadside (between boundary and nearest road shoulder) use witches hats around instrument if pedestrian traffic has potential to impact<br>• Utilise lookouts when crossing road carriageway or performing intermittent work on the carriageway<br>• Utilise traffic lights where available<br>• Where traffic volumes are such that there are no intermittent gaps, and/or signposted speed is greater than 60 kph and the carriageway needs to be accessed, arrange with Project Manager for formal Traffic Control | **C-** | " | " |

| Number | Step | Hazard or human error (Safety/Environmental hazards identified, including physical environment, human errors, plant and equipment) | Risk ranking before controls | Control (to be Implemented to eliminate or reduce the risk to the lowest practicable level) | Risk ranking after controls | Responsibility | Job step to be completed In accordance with (name associated documentation) |
|---|---|---|---|---|---|---|---|
| 5 | | Pedestrian traffic – pedestrians can be a hazard and YOU can be a hazard to pedestrians | **C+** | • Wear high visibility safety vest<br>• Where practical control pedestrian access by using witches hats or barriers<br>• Utilise lookouts<br>• Position tools equipment and materials clear of pedestrian walkways | **D** | “ | “ |
| 6 | Collect survey data | As per Job Step 5 above | | • As per Job Step 5 above | | Team Leader | As per Step 5 |

# Perform Survey Work Outside the Rail Corridor

**NOTE: Each work group or team member must sign off on the SWMS to acknowledge they have been briefed about or instructed in the SWMS**

| Team member name (Please print) | Team Member signature | Instructor/ Briefer name | Date | Team member name (Please print) | Team Member signature | Instructor/ Briefer name | Date |
|---|---|---|---|---|---|---|---|
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Prepared using SMS-06-TP-0026 v1.1; Custodian: Principal OHS Adviser; Approver: GM Safety Risk; Issue date: 18/06/06; Review date 18/06/09

## RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)

| | | Likelihood/Frequency | | | | | |
|---|---|---|---|---|---|---|---|
| | Event Frequency | Less than once every 1000 years | Once every 100 to 1,000 years | Once every 10 to 100 years | Once every 1 to 10 years | More than once per year up to and including 10 times per year | More than 10 times per year |
| | Historical (Likelihood) | Unheard of in the rail industry | Has occurred once or twice in the rail industry | Has occurred many times in the rail industry, but not in NSW | Has occurred once or twice in NSW | Has occurred frequently in NSW | Has occurred frequently at specific locations |
| | Workplace Predictive (Likelihood) | Not expected to occur | May occur only in exceptional circumstances | Could occur at some time but not likely | You would expect it to occur at least once in the next 10 years performing similar activities | You would expect it to occur at least once this year performing similar activities | You would expect it to occur at least once this month performing similar activities |
| | | F1 | F2 | F3 | F4 | F5 | F6 |
| Consequence | | Incredible | Improbable | Remote | Occasional | Probable | Frequent |
| >10 Fatalities | C6 Disastrous | B- | B+ | A | A | A | A |
| 2-10 Fatalities | C5 Catastrophic | C+ | B- | B+ | A | A | A |
| 1 Fatality (2-10 Major Injuries) | C4 Critical | C- | C+ | B- | B+ | A | A |
| 1 Major Injury | C3 Major | D | C- | C+ | B- | B+ | A |
| 1 or more Minor Injuries | C2 Minor | D | D | C- | C+ | B- | B+ |
| First aid treatment, or illness/injury not requiring treatment | C1 Negligible | D | D | D | C- | C+ | B- |

Extreme
High
Medium
Low

**Definition for Use - Regional & Local level (Workplace)**

Used for workplace hazards and safety risks that do not consider the whole of the network. Indicatively this matrix is appropriate for use where the hazards under consideration are up to 10% of the total network exposure. This includes regional and local workplace risk assessments.

As an example, the Level 2 scale would be used when examining the risk of slips, trips and falls on specific RailCorp platforms within a region or at a particular station, or the risk of fire within a depot.

There are 3 options for descriptors which can be used to determine the frequency category. One set of descriptors is provided for frequency, one for historical likelihood, and one for predictive liklihood in the workplace. Choose the most appropriate.

To score the risk, follow the steps:

1. Identify the magnitude of the credible consequence if the risk were to occur. If applicable, risks should be considered in terms of the safety (this matrix), commercial and environmental impact (using other matricies).

2. Identify the likelihood of this level of consequence occurring. (This is done after considering the effectiveness of the current controls in place)

3. Score the risk using the combination of likelihood and consequence ranking.

Note: Where there are a range of credible consequences which may lead to a different level or risks and/or where the controls may be different. It may be useful to score the risk more than once.