KIWIRAIL EMERGENCY MANAGEMENT PLAN:

Section 11.1 – Tunnels

Version Two - June 2017

Revision Table

Issue number	Prepared (P) Reviewed (R) Amended (A)	Approved by	Authorised for release by
Original Effective date 30.06.15	G Stiles, P McQueen (P) M Marshall (A) Wellington Rail Tunnel Focus Group (R)	Phillip O'Connell Manager Zero Harm Systems	Bob Stacy General Manager Zero Harm
One Effective date 01.12.15	M Marshall (A) Wellington Rail / Southern Tunnel Focus Group (R)	Phillip O'Connell Manager Zero Harm Systems	Bob Stacy General Manager Zero Harm
Two *Effective date* *30.06.17*	*M Marshall (A)* *All [4] Tunnel Tunnel Focus Groups (R)*	*Gary Hutchins* *Head of Industry Standards Zero Harm,*	*Katie McMahon* *Group General Manager Zero Harm*

The master document will be updated and those holding controlled copies of the EMP will be advised of the change and the requirement to destroy all old copies and replace them with the current version.

Document Interfaces

1. KiwiRail Tunnel Operations TARPs and Duty Cards
2. Crisis Management Plan
3. Tunnels with Appendix's

Holders of this Emergency Management Plan

1. KiwiRail Network Control Manager
2. Train Manager's office on board passenger trains
3. Established Incident Control Points
4. Electronic copies supplied to
   - Police
   - Fire *Emergency New Zealand*
   - *St. Johns Ambulance Service*
   - Wellington Free Ambulance
   - NZ Mines Rescue Service

Contents

Section 11.1 KiwiRail Standard Tunnel Emergency Management Plan

This part contains Emergency Management information that is common to all KiwiRail tunnels.

Definitions

AED	Automated External Defibrillator
BA	Breathing Apparatus
CIMS	Co-ordinated Incident Management System
EMP	Emergency Management Plan
CMP	*Crisis Management Plan*
EOC	Emergency Operations Centre
FENZ	*Fire Emergency New Zealand*
HHU	High Hazards Unit
HR	Human Resources
HRV	Hi Rail Vehicle
I&A	Infrastructure & Assets
IAP	Incident Action Plan
IC	Incident Controller
ICP	Incident Control Point
IMT	Incident Management Team
JSA	*Job Safety Analysis*
LE	Locomotive Engineer
MRS	Mines Rescue Service
NCM	Network Control Manager
MTMV	*Mobile Track Maintenance Vehicle*
NOK	Next of Kin
NTCC	National Train Control Centre
NZTA	New Zealand Transport Agency
PC	Portal Controller
PE	Passenger Escort
PO	Passenger Operator
RA	Risk Analysis
RIC	Rail Incident Controller
RMO	*Railway Medical Officer*
SFP	Safe Forward Point
TAIC	Transport Accident Investigation Commission
TARPs	Trigger Action Response Plans
TC	Train Controller
TM	Train Manager
TfcM	Traffic Marshall
TOB	*Tunnel Operations Basic*
TOI	*Tunnel Operation Intermediate*

1. Introduction

1.1. The Emergency Management Plan

a) The Emergency Management Plan (EMP) enables KiwiRail to respond to an emergency in a tunnel. An emergency is a serious event that happens unexpectedly and demands immediate action.

b) The EMP is supported by

- Trigger Action Response Plans (TARPs), Duty Cards *(Generic except for Otira tunnel)*,
- *Category One Tunnels Appendixes,*
- *Schedule of key information for tunnels,*
- *(KiwiRail) Crisis Management Plan*

and detailed training material that enable and support personnel to respond to an emergency on site and in real time.

Category One: Tunnels are Kaimai, Lyttelton, Mihiwaka, Otira, Rimutaka, Tawa #1, Tawa #2, and Britomart (managed by Auckland Transport).

c) The EMP is owned and managed by KiwiRail's Zero Harm *Head of Industry Standards*, who is responsible for ensuring that it remains valid and accurate and that it covers any potential emergency that may occur at a tunnel including, but not limited to, the Significant Hazards identified by the tunnel risk assessment process. KiwiRail tunnel hazard and risk assessments are accessible on the KiwiRail intranet through the iKon knowledge base at the "Tunnel Safety" page.

d) The EMP has been developed and will be maintained with participation from rail personnel, and in consultation with *National E*mergency *S*ervice *Representatives* and the NZ Mines Rescue Service.

e) The master copy of the EMP is held by KiwiRail's Zero Harm *Head of Industry Standards*. It is accessible to KiwiRail personnel through on the KiwiRail intranet through the iKon knowledge base at the "Tunnel Safety" page.

Copies are kept at *Category One Tunnel* Incident Control Points, at the NTCC, and are provided electronically to emergency services and NZ Mines Rescue Service. KiwiRail personnel may keep printed *uncontrolled* copies and they will be responsible for ensuring their copies are kept up to date.

f) The EMP has been developed with reference to:

- *Health and Safety at Work Act 2015*
- *Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, Part1. 14 Duty to prepare, maintain, and implement emergency plan*
- *Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016* (Guidance only)
- Railways Act 2005
- National Rail Safety Standards
- *KiwiRail Rail Operating Rules and Procedures*
- KiwiRail Local Network Instructions

- KiwiRail Crisis Management Plan
- *Civil Task Instruction*
  - *Tunnel Egress Walkways*
  - *Tunnel Emergency Response Areas*
- International best practice (Guidance only)
  - European Railway Agency Directive 2001/16/EC safety in railway tunnels (4.4.3 Tunnel Emergency Plan)

1.2. KiwiRail Responsibilities

a) The Chief Executive of KiwiRail is responsible for ensuring that the EMP is effective and that adequate resources are provided to implement the EMP.

b) Nominated KiwiRail personnel (such as Rail Incident Controller (RIC), Train Manager (TM) and on board personnel, Locomotive Engineer (LE), Infrastructure & Assets (I&A) personnel, Train Controller (TC) and Network Control Manager (NCM) are trained in emergency response and will be available to respond to an emergency.

c) Emergency response equipment is available and maintained to respond to credible emergency scenarios identified in the risk management process.

d) There is a tunnel evacuation route by walking in the space between the rails which is kept clear and level with ballast.

e) The TC records the numbers of personnel working in the tunnel, their planned activities and/or direction of travel, the length of time they are expected to remain in the tunnel.

f) *The TC records the total numbers of persons on diesel /steam hauled passenger trains through Category one tunnels.*

1.3. Emergency Response Equipment *for Category One Tunnels*

a) All emergency response equipment is stored so that it can be easily located and rapidly accessed.

b) A register is maintained of emergency response equipment, it is regularly checked and records are kept. Emergency response equipment that requires regular servicing is maintained according to manufacturer's specifications and records kept.

c) Any deficiencies identified will have remedial actions put in place as soon as practicable against specified persons and timeframes.

1.4. Training

a) All rail personnel *(including* contractors*)* before entering the tunnel to work *and or operating trains through tunnel with diesel / steam powered locomotives* must be trained in tunnel operations and assessed as *competent and equipped for tunnel conditions and hazards.*

b) All rail personnel involved in and/or responding to tunnel emergencies are trained in emergency response management (including TARP's) and equipment skills.
The training must include an explanation of this document and its contents.

c) *Coordinated Incident Management Systems (*CIMS*) training is required as follows:*
   - Level 4 for all *Rail Incident Controllers,* managers and supervisors
   - *Level 2* for other *responding rail* personnel.

d) Management must release personnel as required to attend emergency response training.

e) KiwiRail (or other organisation) personnel, on passenger trains, are trained to provide rapid initial response to an emergency. After hand-over to the emergency services they will provide support at the scene as required.

f) Training records for all personnel are maintained including qualifications held, currency and competency.

g) After initial certification, personnel will maintain competency and receive refresher training*, as set out in Rail Operating Rules and Procedures Section 10.3*.

1.5. Assessment and Review of the EMP

a) The EMP and emergency response equipment and facilities must be regularly assessed as current and effective by the following means:
   - Reviewed at least 3 yearly by an appropriately qualified, independent, person;
   - Internally reviewed whenever any tunnel operations have changed;
   - Internally reviewed after any declared emergency as part of the recovery process described in section 4.11.

   All four Tunnel Focus Group*s* will have input into the reviews.

b) Changes to the EMP arising from an assessment will be implemented as soon as practicable.

c) Copies of superseded versions of the EMP will be held by Zero Harm *Head of Industry Standards*.

d) The Zero Harm *Head of Industry Standards* is the only person authorised to approve changes to the EMP.

1.6. Testing the EMP

a) A tunnel based exercise including mobilisation of resources and involvement of emergency services is held every *year as shown in the CRN – Tunnels exercise schedule Minimum of one per year*

b) A “table top” exercise that may or may not include mobilisation of resources and involvement of emergency services is held each year when there is no site based exercise *as shown in the CRN – Tunnels exercise schedule. Minimum of two per year*.

c) Tunnel Focus Groups will be required to conduct ,a minimum of two per year, limited “table top” exercise (1hr max, with no mobilisation of resources) and or have involvement of emergency services at tunnel sites, when there is no site based exercise as shown in the CRN – Tunnels exercise schedule per group.

d) Tunnel Focus Groups will annually audit their tunnels ICP facilities, Tunnel Appendixes and published Tunnel Safety Plans.

e) Skills testing and random audits are undertaken as part of normal business to ensure all trained personnel understand the requirements of the EMP, their own roles, and the equipment that they may be required to use.

f) All tunnel based exercises are risk assessed and signed off by the Zero Harm *Head of Industry Standards* (or a delegated person) prior to commencement.

g) A de-brief is completed, reported and retained after every tunnel based or "table top" exercise and deficiencies identified and remedial actions allocated *managed by the Tunnel Focus Group*.

h) Any changes to the EMP as a result of the testing process will be actioned as described in section 1.5.

2. Purpose of Emergency Management Plan

The purpose of the EMP is to describe the necessary actions to respond immediately, effectively and safely to unexpected events which threaten or have affected:

- the safety of people in the tunnel;
- the condition of tunnel and / or rail vehicles.

2.1. Scope

The scope of the tunnel EMP includes:

- Immediate response to, and management of, incidents within the tunnel;
- On-site co-ordination with local Emergency Services, and other response specialists.

2.2. Emergency Levels *(TARP# 1)*

The EMP uses a three level system for classifying the severity of an emergency. Level 1 is the lowest severity, increasing to Level 2, and Level 3 the most serious. The EMP can be activated at any of the three levels. The Levels are:

Level 1 – KiwiRail on site response
KiwiRail personnel respond using standard operating procedures.

Level 2 – Incident Management Team Response
External assistance and Kiwi Rail incident management resources mobilised.

Level 3 –Crisis *Management Plan* Response
External assistance and *Crisis Management Plan team is activated*.

The characteristics of each level and the response required are described in section 4.

2.3. Re-entry /Recovery tunnel Levels (TARP# 12)

The EMP uses a three level system for classifying the severity of a re-entry. Level 1 is the lowest severity, increasing to Level 2, and Level 3 the most serious.
The Levels are:

Level 1 – KiwiRail on site response
KiwiRail personnel respond using standard operating procedures.

Level 2 – Incident Management Team Response
Kiwi Rail incident management resources mobilised with Network Services in attendance and Emergency Services advised.

Level 3 –Crisis Management Plan Response
External assistance and Crisis Management Plan team is activated.

The characteristics of each level and the response required are described in the TARP.

3. Response Roles

The response to an incident in a tunnel, as detailed in 2.2 and 2.3, may involve any or all of the following groups.
The Roles are briefly outlined below.

3.1. KiwiRail

- KiwiRail personnel manage event on site (RIC) or coordinate with emergency services.
- TC / NCM establish Incident Management Team at the portals.
- Mobilise resources for relief, rescue and/or repair as needed.
- NCM activates the *Crisis Management Plan*.
- *Crisis Management Plan* manages high level resourcing as well as media and welfare in liaison with Police, and provides support to the onsite Incident Management Team.

3.2. Police

- For events not involving fire or hazardous products, the Police take the lead role of Incident Controller and liaise with KiwiRail's RIC.
- Assume the role of lead agency in a Level 2 or 3 *events*.
- Assist with communication resources as required.
- Assist as required with traffic management.
- In the event of a fatality, provide advice to rescue teams.
- In the event of a fatality inform next of kin.
- Liaise with Incident Management Team *members*.

3.3. Fire *Emergency New Zealand (FENZ)*

- Event involving fire or hazardous substances, The *FENZ* takes the lead role of Incident Controller* and liaise with KiwiRail's RIC.
- Assist with communication resources as required.
- Provide *firefighting* equipment, rescue personnel and materials.
- In the event of a tunnel fire, the *FENZ* will not enter tunnel beyond 150m.
- Liaise with Incident Management Team – Operations Manager.

3.4. Ambulance Service

- Establish and maintain *forward and secondary triage areas, to the level required*.
- Provide *Medical* aid.
- Transport casualties to hospital.
- Liaise with Incident Management Team - Operations Manager.

3.5. NZ Mines Rescue Service

- Undertake rescue / recovery operations, where an irrespirable atmosphere exists in the tunnel.

3.6. WorkSafe NZ High Hazards Unit

- Notification as workplace safety regulator.

3.7. New Zealand Transport Agency (NZTA)

- Notification as rail regulator.

3.8. Transport Accident Investigation Commission (TAIC)

- Notification if required as investigating agency.

4. Response Guidelines

4.1. EMP Activation

Alerting of an emergency is by one or more of the following means:

- Voice over tunnel phone or radio to TC.
  "Emergency, Emergency, Emergency"
- *NTCC receiving* Emergency *Radio* Alarm.
- Timer activation in NTCC for train or for *Infrastructure* personnel in tunnel.
- Advice of an incident received from other rail personnel or members of the public.

The emergency level declared will be dependent on information received, using criteria described in Section 4.2.

External emergency services will be alerted by a 111 call from the TC or NCM.

NCM will advise responding services of the location of the Safe Forward Point.

For level 2 or 3 emergencies, the NCM will arrange (with the lead agencies) the establishment of an Incident Management Team at the Incident Control Point at one or both tunnel portals:

- The Incident Control Point will be established at the portal closest to the event and/or from which a rescue operation will enter the tunnel and/or from which evacuating passengers will exit.
- If this cannot be verified, then Incident Control Points will be established at both portals.
- NCM will appoint the primary Incident Control Points (ICP).

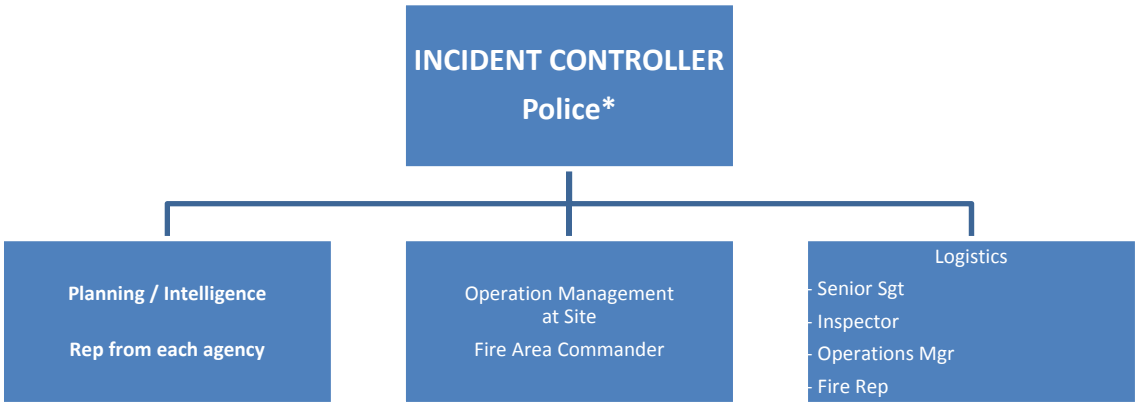
4.2. Levels of *Initial* Response

Level 1 (Minor) • Injury / illness requiring treatment • No further threat or danger of escalation • *Infrastructure Derailment* • Damage affecting but not halting train operations • Disabled Freight train (see TARP #3)	Rail personnel respond Manage using - KiwiRail Instructions
Level 2 (Serious) • Tunnel timer alarms, overdue train or personnel • People seriously injured • People are trapped or missing under hazardous conditions • Further threat or danger of escalation • Damage to tunnel / train safety systems • Freight train derailed in tunnel • Train parting • Passenger train stopped in tunnel • Loss of contact with freight train	Rail personnel respond Activate Incident Control Point Mobilise Emergency Services
Level 3 (Major) • Fatalities / multiple casualty-multiple injury • Increasing complexity, duration and consequences • Of national concern / media interest • Serious damage to tunnel safety systems • Fire in tunnel • Passenger train derailed in tunnel • Loss of contact with passenger train • Loss of contact with Rail Personnel after radio alarm activation	Rail personnel respond Activate Incident Control Point Mobilise Emergency Services Activate *Rail* Crisis Group

4.3. INCIDENT MANAGEMENT

Dedicated Incident Control Point facilities and other emergency provisioning have been provided at selected tunnels.

Tunnel CIMS model



Incident/Emergency requirements

4.4. Level 1 – KiwiRail on site response

KiwiRail personnel at the work site are to

1. Manage the emergency according to established TARPs and Duty Cards
2. Inform the TC of the event and provide regular updates.

When KiwiRail personnel are satisfied the emergency is resolved they will notify TC, normal operations may resume.

4.5. Level 2 – Incident Management Team Response

1. TC will alert Rail personnel, emergency services and agencies and direct resources as required.
2. The Senior Rail person at the site will initially be the Incident Controller.
3. The NCM will appoint a *Rail Incident Controller (*RIC*)* and the RIC will take over as Incident Controller when they arrive on site.
4. When the Police arrive on site they will take over as Incident Controller.

When the role of Incident Controller is transferred this must be confirmed by both persons, recorded and advised to the TC.

Roles and Responsibilities are to be delegated as per CIMS principles and any special instructions for a particular tunnel.

The primary CIMS roles are:

- Incident Controller
- Planning / Intelligence
- Operations
- Logistics

Incident Controller

The Incident Controller is responsible for the development and implementation of the Incident Action Plan and the overall direction of the response activities. The Incident Controller appoints managers to Planning/Intelligence, Logistics and Operations, and appoints Technical Experts as required. The Incident Controller will also ensure that all briefings and communications are recorded.

The Incident Controller will make an initial briefing of the current status to all Incident Management Team members. This will include details of the type, time, and magnitude of event. It will also outline the consequences of that event to date and any actions thus far.

It is the Incident Controller's responsibility to ensure timely and accurate information flow to the TC/NCM. When the Incident Controller and the RIC are separate roles, the RIC will be responsible for information flow to the TC/NCM.

The Incident Controller holds regular meetings with the Incident Management Team managers and support role representatives. All communications at these meetings will be recorded and a log maintained for the duration of the emergency response.

The Incident Controller may also activate support roles such as Information, Safety, and Liaison.

Information
A senior KiwiRail representative who can authorise any financial expenditure, release rail personnel / visitor / contractor emergency contact details from company records and support the response with KiwiRail resources.

Safety
A senior person who can oversee all Incident Action Plans, Risk Assessments and operations.
This person also monitors the effectiveness of the Incident Controller in leading the IMT.

Liaison
A senior person trained and experienced in the role of liaison between multiple agencies, who also oversee any possible conflicts within Incident Action Plans involving potential evidence gathering and / or possible evidence destruction.

Planning / Intelligence

The primary task of the Planning / Intelligence role will be to develop an Incident Action Plan with the objective specified by the IC. Specialist advice will be *sought* from persons integrated into the Incident Management Team through agencies support such as NZ Mines Rescue Service. All Incident Action Plans will include a comprehensive Risk Analysis using industry best practice methodology. These Incident Action Plans and RAs will be reviewed by the Incident Controller and High Hazards Unit (when on site).

Operations

The Operations role is the implementation of the Incident Action Plan and adherence to the approved Risk Analysis process. The Operations Manager will consult the RIC in the development of realistic response goals and objectives.

Logistics

The Logistics role is responsible for the provision of facilities, materials and resources in support of the operation taking into account those identified in the Incident Action Plan and any resources that may be anticipated for an extended operation.

4.6. Level 3 – Crisis *Management Plan* Response

In a level 3 emergency the Incident Management Team and the Crisis *Management Plan (CMP)* will be activated.
The *CMP Team* will be regularly updated by the Incident Management Team and will take over roles such as media liaison (in cooperation with the Police), family support and cooperate with any government agencies regarding the emergency, allowing the Incident Management Team to focus entirely on the rescue and recovery effort.

The Police will assume the role of Lead Agency.

4.7. *Passenger* Evacuation Procedure

Should evacuation of *a Passenger* train be required within the tunnel, passengers will be escorted from the train by the on board train crew to the nearest or safest portal according to the appropriate TARP and Duty Cards.

The train crew will be responsible for all passengers and must ensure they are accounted for *advising the Portal Controller (Emergency Services) of the details of persons remaining on the train.*

At the portal Passenger Escorts under the control of the Incident Management Team will account for all personnel and escort passengers to established assembly locations. Any medical assessment and or transport of injured people to medical facilities will be arranged by ambulance personnel.

Once passengers are at the assembly locations and safe it is the Rail Operator's responsibility to manage their welfare and arrange onward transportation. Onward transport from the assembly locations will be determined by the RIC after considering the following options:

- Relief passenger train to nearest station and thence to onward destinations.
- Relief train with freight wagons to nearest station (must be risk assessed) and thence to onward destinations.
- Bus transfer to nearest station or onward destinations.
- Helicopter transfer to a ground transport location and thence to onward destinations.

Cones and danger tape are to be used to cordon off the portals. Re-entry will be restricted to those authorised by the IC. The Portal Controller will continue to monitor the cordon and log all personnel exiting or if authorised, re-entering the tunnel.

4.8. Notification of Next of Kin

Notification to family members of any injured passengers will be by an appropriately trained and experienced operating company representative delegated by a senior manager with such an authority.

The Police will inform next of kin of any fatality or missing persons.

4.9. TARPs and Duty Cards

KiwiRail has anticipated, and planned for, known credible emergency events that may occur within a tunnel. The detail of roles, responsibilities and courses of action are held within the Trigger Action Response Plans and Duty Cards.

Note: Events that may occur over the whole rail network, i.e. Earthquakes, Tsunami, Terrorism and Volcanic Eruptions are managed in Section 11 Emergency procedures and by (KiwiRail) Crisis Management Plan

4.10. Ending of level 2 or 3 Emergency Status

The cancellation of a level 2 or 3 event can only be declared by the Incident Controller.

The tunnel will remain secure for investigative reasons until released by the Regulator and the IC.

At the completion of the emergency, all responding personnel must be accounted for, and all emergency equipment and resources returned to their respective locations.

4.11. Rail Personnel post incident

Any Rail Personnel showing any signs of their *well-being*, being affected should be assess by *a Medical Practitioner, (where possible a Railway Medical Officer)*, post-incident.

4.12. Debrief

As soon as practicable (within 1 week of the completion of the incident), a debrief will be held with the Emergency Responders, Incident Management Team and / or *Crisis Management Plan* Team, and representatives of the local Tunnel Focus Group.
This debrief will identify learnings from the response process, personnel competencies and equipment provided.

5. Incident Reporting

Incident investigation and reporting will follow standard KiwiRail requirements.

6. Organisations supplied copies of KiwiRail Emergency Response documents

When supplied copies of these documents, KiwiRail will be available to consult on the documents to enable the organisation to update their plans and training