

Lessons learned from one of New Zealand's most challenging civil engineering projects: rebuilding the earthquake damaged pipes, roads, bridges and retaining walls in the city of Christchurch 2011 - 2016.

SCIRT Critical Risks Overview Tool

Story: Health and Safety

Theme: Programme Management

A tool which outlines the eight critical risks applicable to the SCIRT programme, and sets out minimum standards for addressing these risks.

This document has been provided as an example of a tool that might be useful for other organisations undertaking complex disaster recovery or infrastructure rebuild programmes.

For more information about this document, visit www.scirtlearninglegacy.org.nz















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Fulton Hogan



SCIRT Critical Risks Overview Tool

Background

In January 2014, the SCIRT Board identified these eight critical risks as the top Safety Critical Risks for SCIRT employees. The Safety Leadership Group (SLG) agreed and discussed the requirements below as being the minimum standard for addressing this Risk on SCIRT projects. The following requirements have been approved by the SCIRT Tactical Leadership Group (TLG).

The Minimum Standards are set out in the following chapters:

- 1. <u>Scope and application</u>
- 2. <u>Hazards Involved</u>
- 3. <u>Concept Design</u>
- 4. Detailed design and TOC stage
- 5. <u>Pre-construction/ mobilisation stage</u>
- 6. <u>Training and competency</u>
- 7. Fitness for use plant, equipment and tools
- 8. <u>Management of change</u>
- 9. <u>Safe Operation</u>
- 10. Emergency management
- 11. Incident management, reporting and investigation
- 12. Useful documents
- 13. SCIRT resources
- 14. Acronyms and definitions

General	Service strikes	Mobile plant and	TM and Public	Lifting operations	Trenches &	Confined spaces	Powered plant & tools	Height & Depth
		people interface	Interface		excavations			
<u>1. Scope and</u>	A. Set the minimum	A. Set the minimum	A. Set the minimum	A. Set the minimum	A. Set the minimum	A. Set the minimum	A. Set the minimum	A. Set the minimum
application	standard for	standard for	standard for	standard for	standard for	standard for	standard for	standard for
	managing the risks	managing the risks	managing the risks	managing the risks	managing the risks	managing the risks	managing the risks	managing the risks
A. Set the minimum	from working	from interface	from interface	from lifting,	from working in	from working in	from working with	from working at
standard for	around live services	between mobile	between SCIRT	operations on	trenches and open	confined spaces on	powered plant and	heights or above
managing the risks	on SCIRT projects.	plant and	work sites and	SCIRT projects.	excavations on	SCIRT projects.	tools on SCIRT	depth on SCIRT
from ZZZ on SCIRT		employees on	employees with		SCIRT projects.		projects.	projects.
projects.	B. For clarity, the	SCIRT projects.	Traffic and the	B. For clarity, the		B. For clarity, the		
	following		general public.	following	B. For clarity, the	following	B. For clarity, the	B. For clarity, the
B. For clarity, the	requirements apply	B. For clarity, the		requirements apply	following	requirements apply	following	following
following	to:	following	B. For clarity, the	to:	requirements apply	to:	requirements apply	requirements apply
requirements	(a) A service = any	requirements apply	following	(a) Lifting and rigging	to:		to:	to:
apply to: XXXX	non-redundant	to:	requirements apply	operations for the	(a) Trench excavations	(a) An enclosed or	(a) Powered plant or	(a) Work at height
	pipe, duct, cable,		to:	purpose of moving	are those where	partially enclosed	tools are actuated	means working in a
C. The following is	used to convey a	(a) Self-propelled	(a) Traffic comprising	and placing loads	the horizontal	space that is not	by an additional	place where a
outside the scope	utility or	mobile plant and	all modes of	on SCIRT projects	width at ground	intended or	power source and	person could be
of this document:	commodity needed	equipment that is	transport (e.g.:		level is less than	designed primarily	mechanism other	injured if they fell
YYY	or required by the	used for transport.	cars, buses		the vertical depth	for human	than the solely	from one level to
	nublic (such as	operation and	bicycles wheel		of the deeper side	occupancy within	manual labour	another. This can
	water waste	maintenance on	chairs		(c) Open excavations	which there is a	used with hand	he above or below
	water storm	SCIRT projects	nedestrians)		are wider than	risk of one or more	tools. The most	ground level
	water electricity	Examples include:	(h) The general nublic		trenches and	of the following:	common types of	Fyamples are
	marchilder, electricity,	cranos light	hoing pooplo not		includo	(b) An ovygon	nower tools use	Litallipies are.
	(b) Comvises leasted	vohieles, light	involved in CUPT		foundations	(b) All Oxygen	power tools use	access to
	(b) Services located	venicies, alggers,	involved in SCIRT		ioundations,	concentration	electric motors.	machinery or

Service Strikes

TM and Public

Lifting

Trenches

Confined Space

	underground and above ground (C) Includes services public and residential property	 cranes, forklifts, drill rigs, trucks, hydro excavation trucks, roading works plant, water trucks, etc (d) Operation of Mobile plant within the area bounded by the Traffic Management Plan (TMP) and the interface with the work site employees C. The following is outside the scope of this document: (a) Operation of mobile plant outside the area bounded by the TMP and interface with the public. (Ref: CR#3) 	related work C. The following is outside the scope of this document: (a) Transport of SCIRT employees to and from work sites		 building sites and the like C. The following is outside the scope of this document: (a) Work in Confined Spaces (Ref: CR#7) (b) access to and working around trenches and excavations (Ref: CR#8") (c) Work with Mobile Plant (Ref: CR#2") (d) Work around services (Ref: CR#1") 	 outside the safe oxygen range. (c) A concentration of airborne contaminant that may cause impairment, loss of consciousness or asphyxiation. (d) A concentration of flammable airborne contaminant that may cause injury from fire or explosion. (e) Engulfment in a stored free-flowing solid or a rising level of liquid that may cause suffocation or drowning. (f) If there is uncertainty, than the operation will be treated as a Confined Space. Examples of confined space situations on SCIRT projects: manholes, pipes, 	Internal combustion engines and compressed air are also commonly used Examples include: concrete saws, air compressors, generators, compactors, ramset guns, grinders, pipe bursting plant, etc. C. The following is outside the scope of this document: (a) Work with mobile plant (Ref: CR#2)	facilities, work on structures like bridges or Pump Stations, working above a trench. C. The following is outside the scope of this document: (a) Work within a trench, open excavations, confined spaces mobile plant (Ref: CR#5 and CR#7)
2. Hazards involved A. Hazards and injury description	 A. The following Hazards can result in serious harm injuries: (a) Underground services when excavating (b) Overhead services when moving, operating, placing 	 A. The following Hazards can result in serious harm injuries: (a) Being crushed by mobile plant (reversing, pinned against) (b) Sustaining fractures from falls while 	 A. The following Hazards can result in serious harm injuries: (a) Employees being crushed by Traffic (b) Members of the public exposed to work site hazards (mobile plant, falls, 	 A. The following Hazards can result in serious harm injuries: (a) Crushing and being pinned by a load (b) Crushing by tipping of lifting plant or equipment (c) Strike to overhead 	 A. The following Hazards can result in serious harm injuries: (a) Entrapment during Trench collapse (b) Contaminated ground and toxic gases and fumes (c) Exposed live 	 situations on SCIRT projects: manholes, pipes, C. The following is outside the scope of this document: (a) Work in trenches and open excavations (Ref: CR#5) A. The following Hazards can result in serious harm injuries: (a) Engulfment of a person by solid or liquid that is stored within the confined space (b) Explosions or 	 A. The following Hazards can result in serious harm injuries: (a) Lacerations, crushing and burns from moving parts (b) Burns from electric shock (c) Death from 	 A. The following Hazards can result in serious harm injuries: (a) Falls when climbing on top of plant and facilities for access or maintenance (b) Falls from working on elevated

Powered Plant

Service Strikes

TM and Public

Lifting

Trenches

Confined Space

E	mobile plant B. This can result in fatality through electrocution or explosions, and traumatic body injuries including burns, fractures,	accessing, operating or maintaining plant (c) Fractures when hit by moving pieces of plant (swing zone, pinned against)	etc.) and being injured	services	services (d) Difficult access and egress in emergency situations (e) Falling equipment and debris into excavation	 impairment due to atmospheric hazards (high or low oxygen levels, contaminants in the atmosphere) (c) Difficult access and egress and emergency 	electrocution (d) Injury from stored energy (compressed air, hydraulic, pneumatic.) (e) Radiation burns (f) Toxic gases (g) Explosive charges	 structures (bridges, walls etc.) (c) Falls into to trenches and excavations (d) Falls when access and egress to trenches, excavations and
3. Concept design A A. Involves the Design	A. Together, the Delivery Team ECI Representative and the Design Team :	A. Together, the Delivery Team ECI Representative and the Design Team :	A. Together, the Delivery Team ECI Representative and the Design Team :	A. Together, the Delivery Team ECI Representative and the Design Team :	A. Together, the Delivery Team ECI Representative and the Design Team :	A. Together, the Delivery Team ECI Representative and the Design Team :	A. Together, the Delivery Team ECI Representative and the Design Team :	A. Together, the Delivery Team ECI Representative and the Design Team :
Team and DT ECI representative B. Define the Critical Risks on the	 Define possible situations involving work around live services; 	 B. Define possible situations involving work with Mobile Plant; 	 B. Define possible situations involving work around Traffic and the Public; 	 B. Define possible situations involving lifting and slinging; 	 B. Define possible situations involving work in trenches and excavations; 	 B. Define possible situations of confined space; 	 B. Define possible situations of confined space; 	 B. Define possible situations of confined space;
Risks on the projectCC. Risk identified and evaluatedCD. Risk assessment recorded in the Project Risk RegisterCE. Consider early options to eliminate and substitute the risks, or remove the interface with employeesC	 services; C. Identify and evaluate the risks relating to work around live services, including the fragility, age and type of existing infrastructure; D. document the Risk Assessment in the Project Risk Register; E. Consider early options to eliminate or substitute working around services, (ie: replace open excavation work by trenchless methods), or remove the interface with employees. 	 Plant; C. Identify and evaluate the risks relating to wok around Mobile Plant; D. document the Risk Assessment in the Project Risk Register; E. Consider early options to eliminate or substitute Mobile Plant from the work site, or remove Mobile Plant and employee interface 	 and the Public; C. Identify and evaluate the Risks relating to Traffic Management and Public interface, for employees and the general public; D. document the Risk Assessment in the Project Risk Register; E. Consider early options to eliminate or substitute work around traffic and the public, or remove the interface with employees. F. The DT ECI representative identifies course (road routes) expectations around Traffic Management 	 C. Identify and evaluate the risks relating to Lifting Operations – and interaction with site employees; D. document the Risk Assessment in the Project Risk Register; E. Consider early options to eliminate or substitute lifting operations or remove the interface with employees. 	 and excavations; C. Identify and evaluate the Risks relating to Work in Trenches and Excavations; D. document the Risk Assessment in the Project Risk Register; E. Consider early options to replace open excavation work by trenchless methods, or remove the interface with employees 	 C. Identify and evaluate the risks relating to work in confined spaces; D. document the Risk Assessment in the Project Risk Register; E. Consider early options to eliminate work in confined spaces. 	 C. Identify and evaluate the risks relating to Work with powered plant and tools; D. document the Risk Assessment in the Project Risk Register; E. Consider early options to eliminate or substitute the need for powered plant and tools. F. Consider procurement of materials to reduce work on site (eg: bevelling on pipes sourced already done) 	 C. Identify and evaluate the risks relating to working at Heights and Depth; D. document the Risk Assessment in the Project Risk Register; E. Consider early options to eliminate work from heights or above open excavations (eg: trenchless methods)

Heights

Lifting

Trenches

Confined Space

A Datallad da da d						A Delivery Trees 50		
4. Detailed design and	A. Delivery Team ECI	A. Delivery leam ECI	A. Delivery Team ECI	A. Delivery Leam ECI	A. Delivery Team ECI	A. Delivery leam ECI	A. Delivery leam ECI	A. Delivery Team ECI
<u>IOC stage</u>	Representative	Representative	Representative	Representative	Representative	Representative	Representative	Representative
	builds the Work	builds the Work	builds the Work	builds the Work	builds the Work	builds the Work	builds the Work	builds the Work
A. Delivery Team ECI	methodology and	methodology and	methodology and	methodology and	methodology and	methodology and	methodology to	methodology to
Representative	reduces the risk to	reduces the risk to	reduces the risk to	eliminate where	eliminate where			
builds the Work	the lowest	the lowest	the lowest	the lowest	the lowest	the lowest	possible the need	possible the risks
methodology and	practicable level	practicable level	practicable level	practicable level	practicable level	practicable level	for powered plant	from Working at
reduces the risk to	using the hierarchy	using the hierarchy	using the hierarchy	using the hierarchy	using the hierarchy	using the hierarchy	and tools. Where	Heights and
the lowest	of control. In	of control. In	of control.	of control. In	of control	of control	the Risk is not	Depths. Where the
practicable level	particular:	particular:		particular:			eliminated, it is	Risk is not
using the hierarchy			B. Emergency		B. Emergency	B. Emergency	reduced to the	eliminated, it is
of control	(a) Where the	(a) The selection of	Response	(a) The Delivery Team	Response	Response	lowest practicable	reduced to the
	probability of	plant considers and	procedures are	ECI Representative	procedures are	procedures are	level using the	lowest practicable
B. Emergency	services are	minimises the	considered	identifies the loads	considered	considered	hierarchy of control	level using the
Response	identified by the	interaction		that will be lifted				hierarchy of control
procedures are	Design Team, then	between people	F. The Delivery Team	on the project. This	C. The Project Risk	C. The Project Risk	B. Emergency	
considered	in conjunction with	and plant	ECI Representative	informs the	Register is	Register is	Response	B. Emergency
-	the utility location	(b) The work	produces the	methodology as	reviewed and	reviewed and	procedures are	Response
C. The Proiect Risk	providers. locations	methodology	Traffic Staging	well as the	authorised by a	authorised by a	considered	procedures are
Register is	must be confirmed	considers and	Schedule (TSS) (FCI	equipment needed	person	person		considered
reviewed and	to positively	minimises the	deliverable) which	and adequate	knowledgeable in	knowledgeable in	C. The Project Risk	considered
authorised by a	identify the type of	interaction	links the works	machinery.	Risk Assessment	Risk Assessment	Register is	C. The Project Risk
person	utility and provide	between people	programme into		and the subject	and the subject	reviewed and	Register is
knowledgeable in	specific locations	and plant (i e :	stages and assigns	B Emergency	matter	matter	authorised by a	reviewed and
Risk Assessment	accurate to a	ergonomics)	a traffic impact at	Response	matter	matteri	nerson	authorised by a
and the subject	minimum of Level B	cigonomicoj	each stage The TSS	nrocedures are	D Management of	D Management of	knowledgeable in	nerson
matter	(see annendix)	B Emergency	informs the Works	considered	change process to	change process to	Risk Assessment	knowledgeable in
matteri	(see appendix).	Response	Methodology	considered	align the Risk	align the Risk	and the subject	Risk Assessment
D Management of	(b) Utility location	nrocedures are	methodology.	C The Project Risk	Assessment with	Assessment with	matter	and the subject
change process to	nroviders to	considered	C The Project Risk	Register is	the final scope of	the final scope of	matter	matter
align the Risk	provide	considered	Register is	reviewed and	work and TOC	work and TOC	D Management of	matteri
Assessment with	information on any	C The Project Risk	reviewed and	authorised by a	work and roc	Work and roc	change process to	D Management of
the final scope of	notentially relevant	Register is	authorised by a	nerson	F Provision for	F Provision for	align the Risk	change process to
work and TOC	features or	reviewed and	nerson	knowledgeable in	temporary	temporary	Assessment with	align the Risk
	unidentified	authorised by a	knowledgeable in	Risk Assessment	nrotection	protection	the final scope of	Assessment with
F Provision for	services	nerson	Risk Assessment	and the subject	measures and	measures and	work and TOC	the final scope of
temporary	Scivices	knowledgeable in	and the subject	matter	controls described	controls described	work and roc	work and TOC
nrotection	(c) Engage directly	Risk Assessment	matter	matter.	in the Work	in the Work	F Provision for	work and roc
measures and	with affected	and the subject	matteri	D Management of	Methodology	Methodology	temporary	F Provision for
controls described	l Itility(s)	matter	D Management of	change process to	included in the	included in the	nrotection	temporary
in the Work	companies and	inducer.	change process to	align the Risk	Total Outturn Cost	Total Outturn Cost	measures and	nrotection
Methodology	gain agreement on	D Management of	align the Risk	Assessment with	(TOC) for the	(TOC) for the	controls described	measures and
included in the	the design	change process to	Assessment with	the final scope of	relevant Project	relevant Project	in the Work	controls described
Total Outturn Cost	requirements and	align the Rick	the final scope of	work and TOC	relevant roject.	relevant roject.	Methodology	in the Work
$(T\cap C)$ for the	construction	Assessment with	work and TOC				included in the	Methodology
relevant Project	methodology	the final score of		F Provision for			Total Outturn Cost	included in the
relevant Project.	required to protect	work and TOC	F Provision for	temporany			$(T\cap C)$ for the	Total Outturn Cost
E Specific	or relocate the			nrotection			relevant Project	(TOC) for the
deliverables where	affected utility The	E Provision for	nrotection	measures and				relevant Project
annlicable	utility's parament		measures and	controls described				
applicable	to this protection	nrotection	controls described	in the Work				
		μιστεςτιστι	controis, described					

	Service Strikes	Mobile plant and people	TM and Public	Lifti
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Confined Space

				1
 or relocation must be detailed on the UDA form in Project Centre. (d) If a utility chooses to extend or upgrade their network as part of a SCIRT project then a commercial agreement for this work must be negotiated and agreed by the IST Utility Coordinator, who is accountable for ensuring a Management of Change Process is undertaken, and changes to risks formally reflected in the risk assessment. B. Emergency Response procedures are considered C. The Project Risk Register is reviewed in consultation with a person knowledgeable in Risk Assessment and the subject matter. D. Management of change process to align the Risk Assessment with the final scope of work and TOC 	measures and controls, described in the Work Methodology, included in the Total Outturn Cost (TOC) for the relevant Project.	in the Work Methodology, included in the Total Outturn Cost (TOC) for the relevant Project.	Methodology, included in the Total Outturn Cost (TOC) for the relevant	



		E.	The costs for temporary protection measures and controls, described in the Methodology, are budgeted and included in the TOC (Total Outturn Cost) for the relevant Project.														
<u>5. P</u> <u>mo</u>	The construction/ bilisation stage The construction crews are involved in the formulation of the Risk Assessment (Eg: SWMS, JSEA, etc.). Controls and responsibilities are documented prior	А.	The construction crews are involved in the formulation of the Risk Assessment (E.g.: SWMS, JSEA, etc.). Controls and responsibilities are documented prior to work start The Risk	А. В.	The construction crews are involved in the formulation of the Risk Assessment (E.g.: SWMS, JSEA, etc.). Controls and responsibilities are documented prior to work start The Risk	А. В.	The construction crews are involved in the formulation of the Risk Assessment (E.g.: SWMS, JSEA, etc.). Controls and responsibilities are documented prior to work start The Risk	А. В.	The construction crews are involved in the formulation of the Risk Assessment (Eg: SWMS, JSEA, etc.). Controls and responsibilities are documented prior to work start The Risk	A. B.	The construction crews are involved in the formulation of the Risk Assessment (E.g.: SWMS, JSEA, etc.). Controls and responsibilities are documented prior to work start The Risk	А.	The construction crews are involved in the formulation of the Risk Assessment (E.g.: SWMS, JSEA, etc.). Controls and responsibilities are documented prior to work start The Risk	А.	The construction crews are involved in the formulation of the Risk Assessment (E.g.: SWMS, JSEA, etc.). Controls and responsibilities are documented prior to work start The Risk	А. В.	The construction crews are involved in the formulation of the Risk Assessment (E.g.: SWMS, JSEA, etc.). Controls and responsibilities are documented prior to work start The Risk
В.	to work start The Risk Assessment is reviewed and authorised by a person knowledgeable in Risk Assessment and the subject		Assessment is reviewed and authorised by a person knowledgeable in Risk Assessment and the subject matter.		Assessment is reviewed and authorised by a person knowledgeable in Risk Assessment and the subject matter.	ſ	Assessment is reviewed and authorised by a person knowledgeable in Risk Assessment and the subject matter.		Assessment is reviewed and authorised by a person knowledgeable in Risk Assessment and the subject matter.	ſ	Assessment is reviewed and authorised by a person knowledgeable in Risk Assessment and the subject matter.	C.	Assessment is reviewed by a person knowledgeable in Risk Assessment and the subject matter. None	C.	Assessment is reviewed by a person knowledgeable in Risk Assessment and the subject matter None	C.	Assessment is reviewed by a person knowledgeable in Risk Assessment and the subject matter None
C. D.	matter. Specific plans are formulated (PMP, TMP etc.) Risk Assessment and Plans are	C.	practice and to provide a focus for reducing strikes on utility networks, the following service location and protection procedures should	(a)	A Plant Movement Plan (PMP) considers exclusions zones, physical restrictions	(a)	A Traffic Management Plan (TMP), aligned with Code of Practice for Temporary Traffic	(a)	processes are formulated : Lifting operations within the scope of existing DT procedures and will proceed	D.	Risk Assessment and Plans are communicated to those involved in the operation, and authorised by the accountable person	D.	Risk Assessment and Plans are shared and signed by all involved in the operation	D.	Risk Assessment and Plans are shared and signed by all involved in the operation	D.	Risk Assessment and Plans are shared and signed by all involved in the operation
	communicated to those involved in the operation, and authorised by the accountable person	(a)	 be applied by all Delivery Teams and subcontractors: Delivery Team Project Engineer to contact affected utilities and confirm their 		and people within the site (ie: define zones to load and unload, driver safety, movement of other plant, traffic arrival and departure, storage materials, lifting,		Management (CoPTTM) and the Road Controlling Authorities (RCA's) and Local Operating Procedures (LOP), is completed and approved.	(b)	accordingly. For lifting operations outside the scope of existing DT procedures, a Lift Plan is issued and includes the								

Lifting

6. Training and	 approval of detailed design (b) Delivery Team Project Engineer must obtain "as built" service plans from each utility using the contact details below (c) Do not use "as- built" that were issued by the utility more than 30 days ago. (d) Delivery Team to complete Permit to Excavate, and include the signature of the accountable person in the formal record in permit register (e) Locations to be marked out to SCIRT approved standards (refer to SCIRT Best Practice Guide for Subsurface Utility Location – 1001- CN-GE-MO-0001) D. The Risk Assessment and Permits are communicated to those involved in the operation, and authorised by the accountable person 	 overhead lines) (b) A process for delivery is clearly defined. The load and unload area and methodology id defined to eliminate mobile plant and people interface. define delivery waiting zone D. Risk Assessment and Plans are communicated to those involved in the operation, and authorised by the accountable person 	 D. Risk Assessment and Plans are communicated to those involved in the operation, and authorised by the accountable person 	 signature of the authorised accountable person for the operation D. Risk Assessment and Plans are communicated to those involved in the operation, and authorised by the accountable person 	A Employees on site	A Employees on site	
 <u>competency</u> A. Employees on site have a clear understanding of responsibilities, expectations, and 	have a clear understanding of responsibilities, expectations, and Safety Risks relating to their role or task	have a clear understanding of responsibilities, expectations, and Safety Risks relating to their role or task	have a clear understanding of responsibilities, expectations, and Safety Risks relating to their role or task	have a clear understanding of responsibilities, expectations, and Safety Risks relating to their role or task	have a clear understanding of responsibilities, expectations, and Safety Risks relating to their role or task	have a clear understanding of responsibilities, expectations, and Safety Risks relating to their role or task	

Employees on site	Α.	Employees on site
Employees on site have a clear understanding of responsibilities, expectations, and Safety Risks relating to their role or task	Α.	Employees on site have a clear understanding of responsibilities, expectations, and Safety Risks relating to their role or task

Confined Space

	Safety Risks													
	relating to their	В.	None	В.	Endorsements and	В.	None	В.	None	В.	None	В.	None	В.
	role or task	_			licenses (WTR)	_		_		_		-		-
-		C.	Evidence of		for authorised	C.	Evidence of	C.	Evidence of	C.	Evidence of	C.	Evidence of	C.
в.	Licenses and		minimum level of		operation of plant		minimum level of		minimum level of		minimum level of		minimum level of	
	endorsements		training for Project	~	Fuidance of		training for all		training for all		training for work in		training for	
~	Evidence of		Managers, site	C.	Evidence of		employees		employees		trenches and		employees	
C.	minimum loval of		engineers,		training for		Troffic		lifting activities on	(2)	EXCavalions:		Confined Space	
	training as		operators foremen		operators of		Management		site:	(a)	National Certificate		continued space	
	(a) Unit Standards		and snotters.		Mohile Plant as		operation:	(2)	Unit Standards		to support and/or	(2)	Uperation. Unit Standards or a	(2)
	or a National	(2)	Unit Standards	(2)	Unit Standards or a	(2)	Unit Standards and	(a)	(F g · SCIRT training		Company training	(a)	National Certificate	(a)
	Certificate and/or	(0)	(F g · SCIRT on-site	(u)	National Certificate	(0)	Company training		lifting and slinging)		that illustrates a		and/ or Company	
	Company training		training in reading		and/or Company		that illustrates a		or a National		history of Company		training that	
	that illustrates a		service plans and		training that		history of Company		Certificate and/or		procedures and		illustrates a history	
	history of		locating services.)		illustrates a history		procedures, and		Company training	(b)	detailed Instruction		of Company	
	Company		or a National		of Company	(b)	detailed Instruction		that illustrates a	(~)	for the operation		procedures, and	
	procedures, and		Certificate and/ or		procedures, and	(~)	for the operation		history of Company		and maintenance	(b)	detailed Instruction	(b)
	(b) detailed		Company training	(b)	detailed Instruction		and maintenance		procedures, and		of the equipment	` '	for the operation	``
	Instruction for the		that illustrates a	. ,	for the operation		of the equipment	(b)	detailed Instruction		used in accordance		and maintenance	
	use/ operation/		history of Company		and maintenance		used in accordance	. ,	for the operation		with the		of the equipment	
	maintenance of		procedures, and		of the machine		with the		and maintenance		Manufacturer's		used in accordance	
	the plant/	(b)	detailed Instruction		operated in		Manufacturer's		of the equipment		Instructions, and		with the	
	equipment in		for the operation		accordance with		Instructions, and		used in accordance		Industry best		Manufacturer's	
	accordance with		and maintenance		the Operators and		Industry best		with the		practice		Instructions, and	
	the Operators and		of the equipment		Manufacturer's		practice		Manufacturer's				Industry best	
	Manufacturer's		used in accordance		Instructions, and				Instructions, and	D.	As a minimum, a		practice	
	Instructions, and		with the		Industry best	D.	As a minimum, a		Industry best		training record is			
	Industry best		Manufacturer's		practice		training record is		practice		maintained on site.	D.	As a minimum, a	D.
	practice		Instructions, and	(c)	A logbook will be		maintained on site.	_			As Best Practice, a		training record is	
_			Industry best		maintained by the		As Best Practice, a	D.	As a minimum, a		competency		maintained on site.	
D.	As a minimum, a	(-)	practice		operator		competency		training record is		register is		As Best Practice, a	
	training record is	(C)	As a minimum,				register is		maintained on site.		maintained on site.		competency	
	maintained on site.		employees are	D.	As a minimum, a		maintained on site.		As Best Practice, a	F	Supervision on site		register is	
	As Dest Practice, a		standard for work		training record is	E	Supervision on site		rogistor is	с.	supervision on site		maintaineu on site.	
	rogistor is		within the		As Best Practice a	с.	can demonstrate		maintained on site		call demonstrate	F	Supervision on site	F
	maintained on site		Minimum		competency		skills and expertise		maintained on site.		for the task	с.	can demonstrate	с.
			Approach Distance		register is		for the task	F.	Supervision on site		performed on site.		skills and expertise	
Ε.	Supervision on site		(MAD) for		maintained on site.		performed on site.		can demonstrate		and a knowledge of		for the task	
	can demonstrate		overhead power				and a knowledge of		skills and expertise		the ACOP or Best		performed on site,	
	skills and expertise		lines, where	Ε.	Supervision on site		the ACOP or Best		for the task		Practice Guidelines,		and a knowledge of	
	for the task		applicable		can demonstrate		Practice Guidelines,		performed on site,		and OEM		the current	
	performed on site,		-		skills and expertise		and OEM		and a knowledge of		guidelines		Australian Standard	
	and a knowledge	D.	As a minimum, a		for the task		guidelines		the ACOP or Best				for Confined	
	of the ACOP or		training record is		performed on site,				Practice Guidelines,				Spaces	
	Best Practice		maintained on site.		and a knowledge of				and OEM					
	Guidelines, and		As Best Practice, a		the ACOP or Best				guidelines					
	OEM guidelines		competency		Practice Guidelines,									
			register is		and OEM									
			maintained on site.		guidelines									

- None
- Evidence of minimum level of training for operators of powered plant and tools:
- National Certificate and/ or Company training that illustrates a history of Company procedures, and
- detailed Instruction for operation and maintenance of the plant and tools used in accordance with the Manufacturer's Instructions, and Industry best practice
- As a minimum, a training record is maintained on site. As Best Practice, a competency register is maintained on site.
- Supervision on site can demonstrate skills and expertise for the task performed on site, and a knowledge of the ACOP or Best Practice Guidelines, and OEM guidelines

B. None

- C. Evidence of minimum level of employees using fall arrest and restraint equipment: to:
- Unit Standards or a (a) Unit Standards or a National Certificate and/ or Company training that illustrates a history of Company procedures, and
 - detailed Instruction (b) for operation and maintenance of equipment used in accordance with the Manufacturer's Instructions, and Industry best practice
 - D. As a minimum, a training record is maintained on site. As Best Practice, a competency register is maintained on site.
 - E. Supervision on site can demonstrate skills and expertise for the task performed on site, and a knowledge of the ACOP or Best Practice Guidelines, and OEM guidelines

Z. Fitness for use plant, equipment and toolsA. The construction crew, led by the project engineer shall ensure the agpropriate tools and methodology excavators approved, inspected and installed as per crequirementsA. The construction crew, led by the project engineerA. Mobile Plant used is appropriate for the assigned task assigned task are appropriate for the assigned task are appropriate tools and methodology excavators inspected and installed as per current ACOP and manufacturer's requirementsA. The construction crew, led by the project engineerA. Mobile Plant used is approved, inspected and manufacturer's requirementsA. The construction consult of the approved, inspected and manufacturer's requirementsA. The construction tools are appropriate for tools are appropriate for the assigned taskA. Equipment/ tools are appropriate for the assigned task must consplut on tools are appropriate for the assigned taskA. Equipment/ tools are appropriate for t	E. Supervision on site can demonstrate skills and expertise for the task performed on site, and a knowledge of the ACOP or Best Practice Guidelines, and OEM guidelines				
D. Risk assessment / plant inductions D. Risk assessment / requirements for AC pipes D. Risk assessment / plant inductions : (a) As a minimum, a documented inspection ensures D. Risk assessment / plant inductions : (a) As a minimum, a documented inspection ensures D. Risk assessment / plant inductions : (a) As a minimum, a documented inspection ensures D. Risk assessment / plant inductions : (a) As a minimum, a documented inspection ensures D. N/A D. N/A D. N/A D. N/A Mobile Plant meets the SCIRT MOR Mobile Equipment Minimum methanism that ensures the sling requirements (Ref: SCIRT NOR Mobile ensures the sling equipment and to use on site, (b) As Best Practice, a register for shields a fisk assessment a to use on site, (b) As Best Practice, the documented inspection includes a Risk assessment of the Plant and C. As Best Practice, a register for lifting equipment and lifting points is updated and available on site D. N/A D. N/A D. N/A D. N/A D. N/A D. N/A	7. Fitness for use plant, equipment and toolsA.The construction crew, led by the project engineer shall ensure the appropriate tools and methodology for locating services are applied on their project.B. equipment approved, inspected and installed as per current ACOP and manufacturer's requirementsA.The construction crew, led by the project engineer shall ensure the appropriate tools and methodology for locating services are applied on their project.B. equipment approved, inspected and manufacturer's requipment is updated and available on siteB.Use engineered standard support and protection solutions for services which are exposed, particularly those that span across trenches. This includes the replacement requirements for AC pipesD. Risk assessment / plant inductionsC.N/AD.N/A	 A. Mobile Plant used is appropriate for the assigned task (e.g.: 20T excavator not used for minor excavations) B. Mobile Plant is approved, inspected and maintained as per current ACOP and manufacturer's requirements C. As Best Practice, a register for Mobile Plant is updated and available on site D. Risk assessment / plant inductions : (a) As a minimum, a documented inspection ensures Mobile Plant meets the SCIRT minimum requirements (Ref: SCIRT NOR Mobile Equipment Minimum Requirement) prior to use on site, (b) As Best Practice, the documented inspection includes a Risk assessment of the Plant and D. Risk assessment documented inspection includes a Risk assessment of the Plant and D. As a minimum 	 A. Lifting Equipment/ tools are appropriate for the assigned task and must comply to minimum Standard for SCIRT plant (Ref: SCIRT NOR Mobile Equipment Minimum Requirement) B. Lifting equipment and lifting points are : (a) are approved by an authorised accountable person (b) Shield and shoring equipment is approved, installed as per the current ACOP for Load – lifting Rigging, and manufacturer's requirements (b) All lifting devices must have a mechanism that ensures the sling does not come off the hook when not under load C. As Best Practice, a register for lifting equipment and lifting points is updated and available on site D. N/A 	 A. Equipment/ tools are appropriate for the Confined Space entry operation B. Confined space entry and rescue equipment is approved, inspected and installed as per the current Australian Standard for Confined Spaces and manufacturer's requirements C. As Best Practice, a register for equipment is updated and available on site D. As a minimu documented assessment powered pla people inter 	 A. Equipment/ tools are appropriate for the assigned task B. Equipment for fall arrest, fall restraint and fall isolation is approved, inspected and installed as per current ACOP and manufacturer's requirements C. As Best Practice, a register for equipment is updated and available on site D. N/A

Service Strikes

TM and Public

Lifting

Trenches

Confined Space

8. Management of	A. A process is in	A. A process is in	A. A process is in	A. A process is in	A. A process is in	A A process is in /
 8. Management of change A. A process is in place to ensure that the methodology is reviewed when there is a change in the work site environment or machinery involved in the operation, (a) in consultation 	 A. A process is in place to ensure that the methodology is reviewed when there is a change in the work site environment or machinery involved in the operation, (a) in consultation with the construction crew and (b) includes the signature of an 	 A. A process is in place to ensure that the methodology is reviewed when there is a change in the work site environment or machinery involved in the operation, (a) in consultation with the construction crew and (b) includes the signature of an 	 A. A process is in place to ensure that the methodology is reviewed when there is a change in the work site environment or machinery involved in the operation, (a) in consultation with the construction crew and (b) includes the signature of an 	 A. A process is in place to ensure that the lifting methodology is reviewed when there is a change in the planned loads and lifting situation, (a) in consultation with the construction crew and (b) includes the signature of an authorised 	 A. A process is in place to ensure that the methodology is reviewed when there is a change in the work site environment or machinery involved in the operation, (a) in consultation with the construction crew and (b) includes the signature of an 	 A. A process is in place to ensure that the methodology is reviewed when there is a change in the work site environment or machinery involved in the operation, (a) in consultation (with the construction crew and (b) includes the signature of an
with the construction crew and	authorised accountable person for the operation	authorised accountable person for the operation	authorised accountable person for the operation	accountable person for the operation	authorised accountable person for the operation	authorised accountable person for the operation
(b) includes the signature of an authorised accountable person for the operation			 B. Proactive communication is required between the STMS of the layout and the Site Manager must ensure the former has a solid understanding of existing and forward work. C. The Risk Assessment is reviewed every time the TMP is amended as the work progresses D. The STMS shall maintain safe pedestrian access with consideration for impaired or disabled people. (Footpath closures, signage, etc.) By regular discussions with the Site Manager and their Crew. 			

Heights

	A process is in	Α.	A process is in
	place to ensure		place to ensure
	that the		that the
	methodology is		methodology is
	reviewed when		reviewed when
	there is a change in		there is a change in
	the work site		the work site
	environment or		environment or
	machinery involved		machinery involved
	in the operation,		in the operation,
)	in consultation	(a)	in consultation
	with the		with the
	construction crew		construction crew
	and		and
)	includes the	(b)	includes the
	signature of an		signature of an
	authorised		authorised
	accountable person		accountable person
	for the operation		for the operation

Lifting

Trenches

Confined Space

9	Safe operation	Δ	N/A	Δ	Mohile Plant is	Δ	Fauinment is	Δ	All lifting	Δ	Shield and shoring	Δ	All confined space	Δ	All nov
<u> </u>		[,]		'`.	checked and	Π.	checked and	Π.	equipment is	<u>д</u> .	equipment is	⁻ .	operation	/ ···	an too
Α.	Equipment is	В.	Appropriate		maintained		maintained within		checked and		checked and		equipment is		checke
	checked and		signage used where	(a)	within certification		certification where		maintained within		maintained within		checked and	(a)	Safety
	maintained within		required	1-1	where applicable		applicable		certification where		certification where		maintained within	(-)	operat
	certification where		•	(b)	Documented daily				applicable		applicable		certification where	(b)	Pre op
	applicable	C.	Agreed,	. ,	, prestart checks on	В.	Appropriate						applicable	. ,	checks
			documented and		all mobile plant		signage used where	В.	Appropriate	В.	Appropriate				perfor
в.	Appropriate		effective means of	(c)	A "tag-out"		required		signage used where		signage used where	В.	Appropriate		need t
	signage used		communication are		procedure is in	C.	Respective		required		required		signage used where		record
	where required		in place		place to identify		responsibilities and						required	(c)	Correc
					defective plant		communication	C.	All employees	C.	Agreed,				proced
С.	Agreed,	D.	The Risk				between the TM		involved in the		documented and	C.	Agreed,		availat
	documented and		assessment	В.	Appropriate		contractor and		lifting operation		effective means of		documented and		power
	effective means of		completed and		signage used where		Work Site		have agreed and		communication are		effective means of		tools
	communication are		available, and		required		contractor are		documented the		in place		communication are	(d)	A "tag
	in place		determines need				clearly defined:		communication				in place		proced
			for a Permit to	C.	Agreed,	(a)	Traffic		mode prior to work	D.	Assessment and				place t
D.	Risk assessment		excavate		documented and		Management		start		definition of the	D.	Risk assessment		defect
	completed and				effective means of		Contractor is				excavation:		completed and	_	
	available, and	E.	Permit to Excavate:		communication are		responsible for						available, and	В.	Appro
	determines need				in place		managing the safe	D.	The Risk	(a)	There may be		determines need		signag
	for a Permit /	(a)	A Permit to	_			and efficient		assessment		situations where		for a Contined		require
	Management Plan		Excavate is in place	D.	The Risk		movement of road		completed and		excavations can be	-	Space Entry Permit		
_			to allow machinery		assessment		users adjacent to		available, and		considered as	E.	The "Permit to	C.	Agreed
E.	Permit / Plans		or hand digging		completed and		the worksite in		determines need		contined spaces, as		Excavate [®] contains		docum
	used where		within 1.5 metres		available, and		addition to		for a Lift Plan		Dick Accossmont		the criteria to		enecti
	required		indicated on a		for a Plant		movement of site	F	Lifting Operations:	(h)	The "Dermit to		Space (also Pof:		in plac
			drawing and/or		Movement Plan		related mobile	с.	Litting Operations.	(0)	Frequence of the fermine to Frequencies				in plac
			marked out		Wovement Han		nlant on and off	(a)	A dogman must he		the criteria to		CIADJ	П	Risk as
			marked out.				site	(u)	assigned to control		define Confined			0.	comple
		(b)	GPR or RF Cable	E.	The Plant	(b)	Work Site Manager		the movement of		Space (also Ref:				availat
		1.1	and Pipe Tracers*		Movement Plan	,	is responsible for		the load		CR#6)	_			detern
			are to be used to		(PMP) is in place		, managing the safe	(b)	A Spotter must be	(c)	A risk assessment is	F.	Confined Space		for a P
			locate the service		under the		activities within the	. ,	assigned to control		in place to cover		Permit:		concre
			indicated.		responsibility of		inside of the		the area of the load		the risk of falling	(2)	Confined Chase		operat
		(c)	Hydro or vacuum		the work site		worksite. (i.e	(c)	No one is to enter		debris as per the	(a)	commed space		
			excavation is the		manager:		behind the 1.8		the Drop Zone,		ACOP (e.g.: remove		all requirements	Ε.	Permit
			default method for				metre fencing)		which is clearly		objects from edge)		followed		where
			positively	(a)	Site access for	(c)	Communication		defined and	(d)	A risk assessment is	(h)	As Best Practice		(e.g.: c
			identifying services		Mobile Plant is		between the STMS		communicated to		in place to cover	(5)	Consider two		operat
			on all SCIRT sites.		defined with the		and the Work Site		everyone on site.		the risk from		means of egress	_	
			(Ref: SCIRT Best		project STMS. The		Manager is regular,	(d)	Authorised		exposure to		are in place	F.	Pressu
			Practice Guidelines		STMS controls		documented and		employees only to	1	exposed services,				fitted v
			for Hydro		access to and from		effective		enter the Exclusion		and exposed				hose r
			Excavation and	1.3	site of Mobile Plant	2			Zones, which are	1	services will be				securit
			Subsurface Utility	(a)	A delivery process	U.			clearly defined and	1	supported and				event
			this mothod is not		and unloading		assessment		communicated to		protected (Ref :				railure
			nacticable the		and univaling		available and	(0)	A tag-ling is used if	(0)	un#1) a Rick accordmont				
			practicable, the	L	zones, signage and		avaliable, and	(e)	A Lag-line is used if	(e)	a RISK assessment	<u> </u>			

All powered plant	Α.	N/A
an tools are		
checked for :	В.	Appropriate
Safety features are		signage used where
operational		required
Pre operational		
checks are	C.	Agreed,
performed (doesn't		documented and
need to be		effective means of
recorded)		communication are
Correct operating		in place
procedures		
available for use of	D.	Assessment and
powered plant and		definition of the
tools		Risk of Fall :
A "tag-out"	(a)	completed and
procedure is in	()	available.
place to identify	(b)	considers exposure
defective plant	(~)	of employees and
		the nublic/ traffic
Annronriate	(c)	considers means
signage used where	(0)	access and egress
required		to height and denth
requireu	(d)	defines the
Agrood	(u)	appropriate
documented and		controls
effective means of	(م)	determines the
communication are	(C)	need for a Permit
in place		(Fg:Working at
in place		Height Permit)
Risk assessment		
completed and		
available and	F	Permit / Plans used
determines need	с.	where required
for a Permit (e.g.		where required
concrete saw	Е	Access and egross
operation)	1.	Ladders are setup
operation		and secured as per
Dormit / Dlans used		the PDC for
where required		une BPG 101
where required		WORKING at neights
(e.g.: concrete saw		(Ref: WorkSale-
operation)		Best Practice
D		Guidelines for
Pressure airlines		working-height)
fitted with whip	•	
nose restraint as a	G.	
security in the		Public Safety
event of a coupling		Tencing and Edge
failure		protection" defines
		the requirements
		tor preventing the

Lifting

Confined Space

reasons are	responsibilities	determines need	the load needs to	completed and	
documented in the	(c) Mobile Plant	for a Traffic	be positioned	available, and	
risk assessment by	interface O/H's and	Management Plan	(f) Remove the bucket	determines the	
the Project	above ground		prior to lifting	controls necessary	
Engineer	services are	E. The Traffic	(g) A Test lift is to	for safe work in the	
(d) The service must	managed	Management Plan	establish the	trench or	
be positively	(d) Exclusion Zones/	(TMP):	balance and	excavation	
identified and its	No Go Zones are		stability of the load		
attributes recorded	clearly defined and	(a) A Site Traffic		E. Safe Work in	
before excavation	communicated	Management		Excavations and	
as specified in the	(e) Reversing : drive	Supervisor (STMS)		trenches:	
pre dig	through preferred	with the minimum			
documentation is	and spotters	level of training		(a) Ground condition	
commenced within	mandatory	required for the		will dictate the	
1.5 metre of that	(f) Controlled and	type of road where		need for shoring	
service.	uncontrolled	works are being		(b) Good robust access	
(e) The minimum	movements in	carried out. is		and egress will be	
number of	relation to people	designated for		provided for	
potholes/slot	and plant have	deployment.		expedient	
trenches required	been considered	amendments and		evacuation	
each day must be		monitoring of the		(c) Where	
specified by the		TMP (Ref:		contamination in	
Site Engineer and		CoPTTM)		trenches is known	
recorded on the				a suitable process	
daily Pre Dig		(b) The STMS has the		for managing the	
documentation		level of autonomy		risk (e.g.	
When deciding on		required to		atmosphere	
where to slot		accommodate any		testing	
trench or nothole		minor amendments		monitoring)	
and the frequency		required to the		monitoring)	
of clot tronchos or		TMD Significant			
or slot trenches of		rovious to the TMD			
politioles,		are discussed and			
be given to local		are discussed and			
De given to local					
conditions and the					
potential for		hoforo cubraicaia			
crossovers and		before submission			
ueviduons Irom		IU THE KCA.			
Standard		(a) The site is			
alignments.		(c) The site is			
(I) Employees signing		monitored as per			
permits nave		minimum			
accountability for		requirements			
the safety of the		defined in CoPTTM			
task and must have		or the Local			
tormal approval to		Operating			
sign permits.		Procedures.			
(g) Site pre start					
meetings must		(d) The Delivery Teams			
include a daily		Traffic Manager, in			
process for working		conjunction with			

public and work force from falling into Trench excavations

	 around services. E. Work around Overheads: (a) A "Close approach consent " from the asset owner is required for work near electric overhead lines (b) Use of "goalposts", Orion approved measuring poles, or cone sleeves to visually alert operators from coming into contact with overhead lines. F. SCIRT approved spotter mandatory for all operations around services, both underground and overhead. 		 the STMS, will manage the interface with neighbouring TMP's (e) The STMS for onsite Traffic Management will ensure safe access is provided for all modes of transport (f) In the absence of the primary STMS, a formalised handover of the TMP takes place with the pre designated STMS or Traffic Controller (TC) (g) The STMS designates the site access for Plant and Vehicles accessing the work site in coherence with the Work Site's Plant Movement Plan (PMP). (h) The STMS or TC inducts all arms/avenue and vehicles all arms/avenue and vehicles 				
			 site in coherence with the Work Site's Plant Movement Plan (PMP). (h) The STMS or TC inducts all employees and visitors in respect to the TMP 				
10. EmergencymanagementA. Emergency and evacuation procedures for relevant emergency	A. Emergency and evacuation procedures for relevant emergency situations are communicated	A. Emergency and evacuation procedures for relevant emergency situations are communicated	A. Emergency and evacuation procedures for relevant emergency situations are communicated	A. Emergency and evacuation procedures for relevant emergency situations are communicated	A. Emergency and evacuation procedures for relevant emergency situations are communicated	A. Emergency and evacuation procedures for relevant emergency situations are communicated	A.
situations are communicated	B. As Best Practice, Emergency drills	B. As Best Practice, Emergency drills	B. As Best Practice, Emergency drills	B. As Best Practice, Emergency drills	B. As Best Practice, Emergency drills	B. As Best Practice, Emergency drills	В.

Emergency and evacuation procedures for relevant emergency situations are communicated	Α.	Emergency and evacuation procedures for relevant emergency situations are communicated
As Best Practice, Emergency drills	В.	As Best Practice, Emergency drills

		Service Strikes	s Mobil	e plant and people		TM and Public		Lifting		Trenches		Confined Space
B	As Best Practice, Emergency drills are carried out and recorded every 6 months	Service Strikes are carried or recorded eve months C. Awareness of employees of appropriate response in t event of strik live electric s	s Mobil ut and ar ry 6 re m f n he ing trikes	e plant and people re carried out and corded every 6 onths		TM and Public are carried out and recorded every 6 months		Lifting are carried out and recorded every 6 months	C.	Trenches are carried out and recorded every 6 months The site Emergency Procedure considers evacuation from a trench	C.	Confined Space are carried out and recorded every 6 months The site Emergency Procedure considers evacuation from a confined space
<u>1:</u> <u>m</u> in A	1. Incident hanagement, eporting and westigation . The Return to Work Process following a significant incident must include the Project Manager or his representative authorising return to work when	A. The Return to Process follow Recordable S Strike or a Reportable S Incident, mus include the P Manager or h representativ authorising re to work when satisfied that remedial acti	o Work A. The wing a Preservice signation ervice Preservice Preser	ne Return to Work rocess following a gnificant incident ust include the roject Manager or s representative uthorising return o work when stisfied that emedial action has een taken and vestigation has een initiated.	Α.	The Return to Work Process following a significant incident must include the Project Manager or his representative authorising return to work when satisfied that remedial action has been taken and investigation has been initiated.	A.	The Return to Work Process following a significant incident must include the Project Manager or his representative authorising return to work when satisfied that remedial action has been taken and investigation has been initiated.	A.	The Return to Work Process following a significant incident must include the Project Manager or his representative authorising return to work when satisfied that remedial action has been taken and investigation has been initiated.	A.	The Return to Work Process following a significant incident must include the Project Manager or his representative authorising return to work when satisfied that remedial action has been taken and investigation has been initiated.
	satisfied that remedial action has been taken and investigation has been initiated.	B. A process is i place to repo investigate	has B. A d. pl in n in rt and M	process is in ace to report and vestigate cidents and Near lisses	В.	A process is in place to report and investigate incidents and Near Misses.	В.	A process is in place to report and investigate incidents and Near Misses	В.	A process is in place to report and investigate incidents and Near Misses	B.	A process is in place to report and investigate incidents and Near Misses
В.	 A process is in place to report and investigate incidents and Near Misses 	incidents and Misses. C. A process is i place to close	l Near C. A pl cc n pr e off	process is in ace to close off prrective and eventive actions	(a)	Incidents and Non- conformances involving Traffic and the Public are reported through	C.	A process is in place to close off corrective and preventive actions	C.	A process is in place to close off corrective and preventive actions	C.	A process is in place to close off corrective and preventive actions
c.	A process is in place to close off corrective and preventive actions	corrective an preventive ac D. Post incident testing as rec	d D. Po ctions. te by D&A SO juired	ost incident D&A sting as required / the current CIRT D&A policy	(b)	the Delivery Team's Traffic Manager An incident resulting in a crash involving a road	D.	Post incident D&A testing as required by the current SCIRT D&A policy	D.	Post incident D&A testing as required by the current SCIRT D&A policy	D.	Post incident D&A testing as required by the current SCIRT D&A policy

	are carried out and recorded every 6 months		C.	are carried out and recorded every 6 months Emergency procedure will provide for recovery of someone suspended on fall arrest.
Α.	The Return to Work Process following a significant incident must include the Project Manager or his representative authorising return to work when satisfied that remedial action has been taken and investigation has been initiated.	Α.	Th Pr sig m Pr his au to sa re be in be	ne Return to Work ocess following a gnificant incident ust include the oject Manager or s representative othorising return work when tisfied that medial action has een taken and vestigation has een initiated.
В.	A process is in place to report and investigate incidents and Near Misses	В.	A pla inv inv M	process is in ace to report and vestigate cidents and Near isses
C.	A process is in place to close off corrective and preventive actions	C.	A pla co pr	process is in ace to close off prrective and eventive actions
D.	Post incident D&A testing as required by the current SCIRT D&A policy	D.	Pc te by SC	ost incident D&A sting as required the current CIRT D&A policy

	Service Strikes	Mobile plant and people	TM and Public	Lifting	Trenches	Confined Space	Powered Plant	Heights
 D. Post incident D&A testing as required by the current SCIRT D&A policy E. All employees involved in the operation are held accountable to Delivery Team processes 	 by the current SCIRT D&A policy of Delivery Team and Sub-Contractor employees involved in the immediate event if a service was hit or compromised E. All employees involved in the operation are held accountable to Delivery Team processes 	E. All employees involved in the operation are held accountable to Delivery Team processes	 user, or damage to any installed Traffic Management Device (TMD), vehicles, plant or injury to a person must be reported within 24 hours (Ref: COPTTM) to the SCIRT IST traffic manager. C. A process is in place to close off corrective and preventive actions D. Post incident D&A testing as required by the current SCIRT D&A policy E. All employees involved in the operation are held accountable to Delivery Team 	E. All employees involved in the operation are held accountable to Delivery Team processes	E. All employees involved in the operation are held accountable to Delivery Team processes	E. All employees involved in the operation are held accountable to Delivery Team processes	E. All employees involved in the operation are held accountable to Delivery Team processes	E. All employees involved in the operation are held accountable to Delivery Team processes
 12. Useful documents A. Approved Codes Of Practice B. Best Practice Guidelines C. WorkSafe website D. Regulations 	 A. Guide for Safety with underground services (OSH – latest version) B. WorkSafe factsheet : Safe digging practices – underground services 	 A. Accepted Codes of Practice: (a) Australian COP for Mobile Plant (b) ACOP Operator Protective Structures on self- propelled mobile mechanical plant (OSH-latest version) B. Best Practice Guidelines (a) Guidelines for working around mobile plant (NZTA – draft) (b) Best practice guidelines for demolition in New Zealand (WorkSafe – latest version) (c) 	A. XXXX B. Best Practice Guidelines (a) CoPTTM (NZTA – latest version) C. Local operating procedures (CTOC– latest version)	 A. Accepted Codes of Practice: (a) ACOP for Cranes (WorkSafe-latest version) (b) ACOP for Load – lifting Rigging (WorkSafe-latest version) B. 	 A. Accepted Codes of Practice: (a) ACOP for Safety in Excavations and Shafts for foundations (WorkSafe-latest version) B. WorkSafe factsheet : Preventing Trench collapses – excavations 	A. Australian Standard for Confined Spaces (AS 2865 – latest version) B.	 A. Accepted Codes of Practice: (a) ACOP power actuated hand held fastening tools (WorkSafe-latest version) (b) ACOP Pressure equipment (WorkSafe-latest version) 	 A. Accepted Codes of Practice: (a) ACOP Power operated Elevating Work Platforms (WorkSafe – latest version) B. Best Practice Guidelines (a) Best Practice Guidelines for working-height (WorkSafe-latest version) (b) Best practice guideline for scaffolding in New Zealand (WorkSafe – latest version)

Lifting

Trenches

Confined Space

	13. SCIRT resources	 A. Design Guideline 05 "Utilities coordination & subsurface utilities information". B. NOR 23 "Utilities coordination & sub surface utilities information" C. Utility marking standards requirement 	 A. SCIRT minimum requirements for plant B. Plant Risk Assessment Matrix 	A. Confined Space Identification Worksheet (in progress)
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14. Acronyms and definitions

Term	Acronym	Definition	Source
Approved Code Of	ACOP	Approved Codes of Practice are documents that offer an approved method of achieving compliance with regulatory	Department of Labour, NZ.
Practice		requirements. A code of practice will tell you how to meet the regulation requirements and controls in a way that is legally	http://www.dol.govt.nz/wo
		defensible. They are not mandatory and other ways of meeting the requirements can be adopted instead.	Environmental Protection A
			http://www.epa.govt.nz/pu
			resources/publications/cod
Authorised		Employee trained and given the means and delegated authority to assume accountability for a task.	SCIRT internal
Accountable person			
Christchurch Traffic	СТОС	CTOC is the Road Controlling Authority (RCA) in charge of administering Temporary Traffic Management for the Christchurch	SCIRT internal
Operations Centre		City and Banks Peninsula area.	
Close approach		A Consent issued by the Electricity Asset Owner which will set out the minimum safe approach distances and any other safety	Orion. http://www.oriongro
consent		measures for working near overhead lines.	network/safety/close-appro
Code of Practice for	CoPTTM	The NZ Transport Agency (NZTA) Traffic control devices manual Part 8 Code of practice for temporary traffic management	NZTA <u>http://www.nzta.gov</u>
Temporary Traffic		describes best practice for the safe and efficient management and operation of temporary traffic management (TTM) on all	devices-manual/definitions
Management		roads in New Zealand.	
Competent person		Means a person who has acquired, through a combination of training and qualification or experience, the knowledge and	WorkSafe NZ
		skills to perform the task required	
Construction crew		Crew of employees working for a contractor to construct SCIRT work	SCIRT internal
Confined space		An enclosed or partially enclosed space that is not intended or designed primarily for human occupancy, within which there	AS 2865-2009 (Australian S
		is a risk of one or more of the following:	
		(a) An oxygen concentration outside the safe oxygen range.	
		(b) A concentration of airborne contaminant that may cause impairment, loss of consciousness or asphyxiation.	
		(c) A concentration of flammable airborne contaminant that may cause injury from fire or explosion.	
		(d) Engulfment in a stored free-flowing solid or a rising level of liquid that may cause suffocation or drowning.	
Critical Risk (Safety)		Circumstances under our control that may be Immediately Dangerous to Life or Health (IDLH) for our staff, contractors or the	SCIRT internal
		public. If not managed, these circumstances could cause traumatic injuries or death. The term immediately dangerous	
		excludes circumstances from critical risk that are chronic or cumulatively harmful in nature. These non-critical risks are not	
		immediately Dangerous to Life or Health and therefore managed through our normal risk management and mitigation	
		processes.	
Delivery Team ECI		Generally a Project Engineer, Project Manager or ECI coordinator knowledgeable in the subject matter and involved in the ECI	SCIRT internal
representative		process on behalf of his/ her delivery team	
Design Team		SCIRT Team in charge of producing the design for projects	SCIRT internal
Dogman		Trained according to Unite standard for lifting	SCIRT internal

Α.	SCIRT NOR Public Safety fencing and Edge protection

(Australian Standard Confined Space)

Lifting

Trenches

Confined Space

Drop Zone		Restricted access area directly underneath the load	SCIRT internal
Drug and Alcohol	D&A		
Employees		Personnel conducting work on or for SCIRT projects, as opposed to the general public. Includes Delivery Team and subcontractor staff.	SCIRT internal
Early Contractor Involvement	ECI	SCIRT process by which Delivery Teams get involved and contribute to the design and constructability of a Project.	SCIRT internal
Exclusion Zone		An Exclusion Zone is a restricted access area around mobile plant and vehicular traffic (or may even be defined as the entire Worksite). Persons on foot can only enter an exclusion zone if authorised to do so and if the necessary safety controls are in place. Exclusion zones around operating mobile plant must have a minimum separation distance (eg. three meters) which would be increased in accordance with the speed and size of the mobile plant/vehicles and any attachments used or loads carried	SCIRT internal
Job Safety and Environmental Analysis	JSEA	Job Safety Analysis (JSA) simply means looking at the work task and considering what is the safest way to complete it. It is a way of becoming aware of the hazards involved in doing the job and taking action to prevent an injury. The JSA process is suitable for different trades do different tasks, and need not require enormous amounts of time or use endless pieces of paper.	Work Safe Victo prevention/heal
Local Operating Procedures	LOP	Outlines the Christchurch Traffic Operations Centre (CTOC)'s view on Temporary Traffic Management (TTM) applications within the area administered by CTOC (Christchurch City and Banks Peninsula). The NZTA Code of Practice for Temporary Traffic Management (CoPTTM) is the primary reference standard, and LOP document explain variations to CoPTTM that CCC and NZTA consider to be acceptable in our area.	CTOC. More info local-operating-
Logbook (Operator's)		A record kept by an operator of the hours worked on each type of plant (model, make, etc.) operated by him/ her.	SCIRT internal
Minimum Approach Distance	MAD	Means the minimum distances when approaching live conductors that shall apply to any person who is not a competent live line line-worker, and include conductive material carried by them, vehicles, and mobile plant.	New Zealand Ele line work <u>http://www.me</u> <u>policy/electricity</u> <u>of-practice/</u>
Mobile Plant		Self-propelled mobile plant and equipment that is used for transport, operation and maintenance.	SCIRT internal
No Go Zone	NGZ	The No Go Zone (NGZ) is a defined prohibited area. There is no authorisation attainable to enter a No Go Zone. All mobile plant / equipment and vehicles must STOP / cease operation immediately if a person on foot enters a NGZ.	SCIRT internal
Original Equipment Manufacturer	OEM	Makes equipment or components that are then marketed by its client, another manufacturer or a reseller, usually under that reseller's own name.	SCIRT internal
Open excavations		Open excavations are wider than trenches and include foundations, building sites and the like	ACOP (code of p Foundations
Operator		Employee whose role is to operate mobile plant, machinery, vehicles, powered plant.	SCIRT internal
Permit to Work	PTW	 Where proposed work is identified as having a high risk, strict controls are required. The permit-to-work is a documented procedure that authorises certain people to carry out specific work within a specified time frame. It sets out the precautions required to complete the work safely, based on a risk assessment. It describes what work will be done and how it will be done; the latter can be detailed in a 'method statement'. Note: The Christchurch City Council has introduced the Permit to Work (PtW) system for works on the water supply and wastewater networks. See more information : http://www.ccc.govt.nz/business/constructiondevelopment/permittowork.aspx 	HSE UK <u>http://w</u>
Plant Movement Plan	PMP	Document produced at the planning stage of a Project. It is used to organise the Work Site and includes: the movement of Mobile Plant in relation to employees, loading and unloading zones, sites access and egress, site offices, storage and stockpile areas, etc.	SCIRT internal
Project Engineer		Employee whose role is Project Engineer. Generally in SCIR, this involves the planning and management of a Project from ECI to construction	SCIRT internal
Reportable Service Near Miss		I didn't make contact, but under slightly different circumstances I could easily have done so.	SCIRT internal
Reportable Service Incident		I made contact with the service sheath but on inspection I had not penetrated the sheath or compromised the service.	SCIRT internal
Recordable Service Strike		The service sheath was penetrated and/ or compromised	SCIRT internal

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a.govt.nz/energysafety/documents/legislation-
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ractice) for Safety in Excavations and Shafts for
<pre>vww.hse.gov.uk/coshh/basics/permits.htm</pre>

Confined Space

Road Controlling Authority	RCA	In relation to a road: means the authority, body or person having control of the road; and includes a person acting under and within the terms of a delegation or authorisation given by the controlling authority. The RCA for the Christchurch City and Darks Darisoula area is CTOC	NZTA <u>http://ww</u> <u>devices-manual</u>
Safety Leadership	SLG	Internal SCIRT operational group comprising IST and Delivery Teams H&S Advisors.	SCIRT internal
Safety in Design		Safety in Design is a process that integrates hazard identification and risk assessment methods early in the design process, to eliminate, isolate or minimise the risks of injury to those who will construct, operate, maintain, decommission and demolish the asset.	"SCIRT Safety in
Safe Work Method Statement	SWMS	 A Safe Work Method Statement (SWMS) is a document that: (a) lists the types of high risk construction work being done (b) states the health and safety hazards and risks arising from that work (c) describes how the risks will be controlled, and (d) Describes how the risk control measures will be put in place. 	Work Safe Victo prevention/heal statements/wha
Service		Any non-redundant pipe, duct, cable, used to convey a utility or commodity needed or required by the public (such as water, waste water, storm water, electricity, gas, telecom, etc).	SCIRT internal
Site Traffic Management Supervisor	STMS	An NZTA qualified person who has specific responsibility for documentation and management of temporary traffic management (TTM).	NZTA <u>http://ww</u> <u>devices-manual</u> ,
Spotter		(also loosely termed "Observer", "Dogman", "Banks man") Employee given the task to assist the operator of Mobile Plant in the safe operation of machinery. For example: reversing, working near overheads, digging near underground services, etc.	SCIRT internal
Tactical Leadership Group	TLG	Internal SCIRT operational group comprising IST Delivery Managers and Delivery Team Leaders.	SCIRT internal
Traffic		All means of transport within the road corridor (vehicles, cyclists, pedestrians, etc.)	SCIRT internal
Traffic management Device	TMD	A device used on a road for the purpose of traffic control; and includes a: 1.sign, signal or notice; or 2. traffic calming device; or 3.marking or road surface treatment.	NZTA <u>http://ww</u> devices-manual
Temporary Traffic Management	TTM	The process of managing road users through or past a work site, in a safe manner, with minimal delay and inconvenience.	NZTA <u>http://ww</u> devices-manual
Traffic Staging Schedule	TSS	Internal SCIRT ECI deliverable which links the works programme into stages and assigns a traffic impact at each stage	SCIRT internal
Traffic Controller	TC	An NZTA qualified person who has specific responsibility to manage a worksite on a level 1 road.	NZTA <u>http://ww</u> devices-manual
Traffic Management Plan	ТМР	A document describing the design, implementation, maintenance and removal of TTM while the associated activity is being carried out within the road reserve or adjacent to and affecting the road reserve.	NZTA <u>http://ww</u> devices-manual
Total Outturn Cost	тос	The budget allocated to a SCIRT Project at the end of the ECI phase	SCIRT internal
Trench excavations		Trench excavations are those where the horizontal width at ground level is less than the vertical depth of the deeper side	ACOP for Safety
Unmarked service		"Failure" to mark (GPR + C&G). Not notated on the ground.	SCIRT internal
Unknown service		Not on service drawings, as built, or construction drawings.	SCIRT internal
Unidentified service		Failed to be identified although on a drawing or above ground indication.	SCIRT internal
Utilities Design Approval	UDA	SCIRT internal document used to record discussions between Design Teams and Utility(s) companies regarding agreement on the design requirements and construction methodology required to protect or relocate the affected utility.	SCIRT internal
Work site manager		Employee trained and given the means and responsibility to manage a work site. The Work Site Manager is responsible for managing the safe activities within the inside of the worksite. (i.e., behind the 1.8 metre fencing), as opposed to the Traffic Management Contractor who is responsible for managing the safe and efficient movement of road users adjacent to the worksite in addition to managing the movement of site related mobile plant on and off site.	SCIRT internal

w.nzta.govt.nz/resources/traffic-control-		
definitions.html#r		

Design Strategy" document. (Project Centre)

oria <u>http://www.worksafe.vic.gov.au/safety-and-</u> <u>lth-and-safety-topics/safe-work-method-</u> at-is-a-safe-work-method-statement

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