Excavation Procedure

1. Purpose

The WA Country Health Service (WACHS) is committed to providing and maintaining a safe work environment. Under the *Work Health and Safety Act 2020* (WA), WACHS has a primary duty of care to ensure, so far as is reasonably practicable, the health and safety of workers (while those workers are at work), as well as to ensure that other persons are not put at risk from work carried out as part of WACHS's business or undertaking.

The purpose of this Excavation procedure is to mitigate the risk of personal injury or death and damage to property. Excavation work commonly includes work involving the removal of soil or rock from a site to form an open face, hole or cavity including trenches, shafts and tunnels. Excavation work is generally carried out using tools and machinery.

Work connected with an excavation is a type of 'construction work'. Therefore, when carrying out excavation work, the requirements relating to construction work must also be complied with construction work, including work connected with an excavation carried out in or near:

- a shaft or trench with an excavated depth of greater than 1.5 metres
- a tunnel

Requirements imposed under the *Work Health and Safety Act 2020* (WA) and Work Health and Safety (General) Regulations 2022 (WA) relating to excavation work do not apply to a bore to which a relevant water law applies, or a trench used as a place of interment.

This document outlines the process to be applied to ensure all workers maintain a safe working environment.

2. Procedure

This procedure applies to all sites and workers who are required to perform excavation works. This procedure has been developed in accordance with the WorkSafe Code of Practice: Excavation, WorkSafe Code of Practice: How to manage work health and safety risk and WorkSafe Code of Practice: Managing the risk of falls at workplaces.

2.1 Risk Management

Risk assessments are undertaken by the worker and Nominated Site Delegate of the workplace by completing a Job Hazard Analysis (JHA) Form and/or Safe Work Method Statement (SWMS) and following the Job Hazard Analysis Procedure or Safe Work Method Statement Procedure to ensure all hazards are identified, and procedures are written and followed to control identified hazards.

The risks associated with excavation are to be controlled by hierarchy of control. It is important to constantly monitor and review control measures to ensure they continue to prevent or control exposure to hazardous acts or conditions. Before work commences, all workers new to the task should be briefed on the processes to be followed and the need to observe all safety requirements. If the scope of work changes or the efficiency of an

existing control is reduced, work is to be stopped immediately, a review conducted, and necessary changes made to the JHA/SWMS and associated work practices. The work can recommence once this process has been completed.

All JHA's/SWMS completed for excavation tasks must be held at the job whilst the task is being undertaken. Once the job has been finalised the JHA/SWMS must be filed as per the Corporate Recordkeeping Compliance Policy.

2.2 Documentation

Prior to commencing any excavation all documentation must be obtained and relevant permission approved.

Combined Utilities Drawing/s or Ground Services Plan

The purpose of the Combined Utilities Drawing/s is:

- to provide all workers involved in any excavation with current drawings to ensure they know what services are in the area and where they are located
- ground Services Plan will provide Reduced Level (indicating depth of services below finished ground level).

Emergency Procedure

The purpose of the emergency procedure is:

- to provide all workers with a plan which states evacuation procedures, notifying emergency services, medical treatment and effective communication in the event of an emergency involving excavation work.

Completed Documentation

Underground essential services information must be retained until the work is completed. All completed documentation must be maintained and retained and filed as per the WACHS Corporate Recordkeeping Compliance Policy.

2.3 Selecting Appropriate Equipment

All equipment should be selected based on the hazard assessment and the task being performed. Additionally, workers must wear the appropriate Personal Protective Equipment (PPE) as identified in the JHA or SWMS form.

All equipment and methods used for trench support must comply with applicable Australian and engineering standards. Specifically, trench shoring and lining systems must meet the requirements outlined in AS 4744.1 – Steel Shoring and Trench Lining Equipment. These standards ensure the structural integrity and safety of trench support systems and must be adhered to throughout all phases of work. Relevant standards can be accessed via the WACHS Library.

The person conducting a business or undertaking (PCBU) or contractors that provide equipment must ensure that the equipment is suitable for its intended use, inspected and approved before use to ensure it is in good working condition. It must be calibrated and maintained as per manufacturer specifications. Defective or damaged equipment should be removed immediately and repaired or replaced.

2.4 Training Competency and Records

Nominated Site Delegate

Persons in Control who are managing works are required to have the below training.

- Excavation Toolbox Training accessible in the WACHS MyLearning .

Underground Service Locator

Workers intending to undertake this position must have the below nationally recognised units of competency.

Mandatory units:

- RIICCM202E - Identify, locate and protect underground services or similar.

Training specific to the excavation work and to the site must also be provided to workers by a competent person. Workers operating certain types of plant at the workplace must possess a valid licence to operate that plant.

Workers in a supervisory role, for example a leading hand or foreman, should be experienced and trained in excavation work to ensure the work is carried out in accordance with a SWMS.

All workers intending to undertake work need to be suitably trained and possess qualifications and licenses relevant to the scope of work being conducted.

Contractors are required to upload their qualification onto the WACHS Online Contractor Induction System during induction and WACHS workers are required to keep a record of their qualification on the WACHS Learning Management System by contacting the regional Learning and Development team.

2.5 Isolations

Before any work can commence, any electrical and mechanical isolations are required to be placed and verified as per WACHS Lockout and Tagout Works Procedure.

If there is any potential for an in-rush of water or other liquid which does not have an isolation point e.g. dam, pond, sump or similar, adequate control measures must be taken to ensure an in-rush does not occur. Alternatively, workers must not enter the trench or excavation area.

Refer to the WACHS Lockout and Tagout Works Procedure for any lockout and tagout non-compliances.

2.6 Excavation

Multiple stakeholders are required for the efficient, and successful management of excavation work. It is important to establish who these stakeholders are early and ensure clear and concise communication throughout the process. In turn, this creates a proactive work environment and aids in foreseeing any potential risks or delays.

Preparation

As soon as excavation work is scheduled, preparation of the following is required prior to the scheduled date and time.

Documentation

Prior to commencing excavation work, all documentation must be obtained and relevant permission approved.

- SWMS/JHA – Scope of Work
- Combined Utilities Drawing/s
- Emergency procedure for excavation

Signage

Signage must be erected to advise other workers and unauthorised people of the work in progress and the hazards in the area.

Barricading

Barricading must be used to ensure no unauthorised access is gained to the designated area or there is a fall from height risk. An agreement between all involved stakeholders must be met about who will secure and maintain security of the site/work area.

Services

All services must be located and clearly marked prior to work commencing. To locate in ground services, "Dial before you dig" and As Constructed Drawings must be obtained.

Underground essential services can also be located using underground locators. Workers operating such equipment must have undergone the relevant training and are competent in their use.

The available information about existing essential services may not be accurate. Therefore, it is important that excavation methods include an initial examination of the area. Where there is uncertainty about the location of underground services, a spotter must be present and excavation must be performed manually. The use of mechanical equipment is strictly prohibited until all services have been clearly identified. Similarly, for wall or ceiling penetrations, power tools must not be used.

Preventing Ground Collapse

Benching, battering or shoring (trench support) the sides of the excavation will minimise the risk of a person being trapped and prevent the excavation from collapsing. Ensure benching, battering and trench support specifications are documented in the SWMS/JHA

and if required trench support is available prior to commencement of trenching and excavating.

Preventing Fall from Height

When materials have been removed, exposing a fall from height risk or risk of materials falling from height, the WACHS Working at Height Procedure must be followed.

Ventilation

The risk of atmospheric contamination through a build-up of gases and fumes must be controlled. Gases and fumes heavier than air can collect in excavations or small spaces, for example: gases, sulphur dioxide, engine fumes, carbon monoxide and carbon dioxide, and leakage from gas bottles, fuel tanks, sewers, drains, gas pipes and LPG tanks.

Plant using a combustion engine, for example air compressors and electrical generators, should never be used in a small space, for example a trench, if workers are in the trench. The build-up of exhaust gases in the excavation, particularly carbon monoxide, can cause death.

Ventilation must be maintained to the acceptable limit for Volatile Organic Compounds (VOCs) is <300ppm for a workplace containing known sources of fuel. This represents 5% of the Lower Explosive Limit (LEL).

O2	LEL	H2S	CO	VOCs
>19.5 up to <23.5%	<5% LEL	<10 ppm	<30 ppm	

Should readings exceed the above limits, the work area should be allowed to ventilate before a re-test to be conducted.

Air monitoring must be undertaken to determine the airborne concentration of a substance or mixture at the workplace if:

- it is not certain if the airborne concentration of a substance or mixture exceeds the relevant exposure standards, or
- monitoring is necessary to determine whether there is a risk to health.

Other methods of controlling the risks associated with atmospheric contamination include:

- pre-start checks of atmospheric conditions
- using gas monitors including workers wearing personal monitors near their airways
- ensuring there is ventilation, either natural or mechanical
- working in pairs, with one person as a safety observer at the surface to monitor conditions
- ensuring familiarity with rescue procedures, and
- using PPE.

For further guidance on how to manage risk refer to WorkSafe Code of Practice: How to manage work health and safety risk.

Note: If the space is deemed to be a confined space, refer to the WACHS Confined Space Procedure.

Completing Excavation

A spotter must be present at all times if:
- there is a high risk of equipment contacting personnel, property, essential services or similar
- if mobile equipment is within close proximity to the excavation with risk of falling in.

Powered mobile plant should not operate or travel near the edge of an excavation unless the ground support system installed has been designed by a competent person to carry such loads.

All workers performing excavation must understand and acquire current Combined Utilities Drawings for the work site. The worker must always have access to them whilst work is being conducted.

Workers must monitor:
- instability of the excavation due to persons or plant working adjacent to the excavation
- conditions for possible in-rush risk e.g., excess rain, compromises liquid storage, burst piping
- air quality in the excavation or small space
- instability of adjoining or nearby structures or buildings
- condition of the wall, ceiling, or floor/ground
- trench support if being used manual digging when near services.

Ensure all services are clearly identified and appropriately marked, with markings maintained and visible throughout the duration of the work. Ensure appropriate placement of materials, plant, or other loads to eliminate possibility of them falling though an opening into an excavation.

Ensure barricading is maintained as per SWMS/JHA to avoid falls from one level to another. Further information on the selection and use of fall prevention devices can be found in the Safe Work Code of Practice: Managing the risk of falls at workplaces.

Communication must be maintained when the work affects other stakeholders, including parties not involved in the works e.g., nearby businesses, other departments.

If asbestos or asbestos containing material is encountered, refer to the WACHS Asbestos Works Procedure.

If silica or silica containing material is encountered, refer to the WACHS Working With Silica Procedure.

If gas monitors are being used and the monitor alarms, all work must cease until the work area atmosphere is deemed safe.

When excavating, ensure material is placed on the lower side of the excavation to reduce the effective height of the excavation (see below diagram) and reduce the risk of material falling or being washed into the excavation.

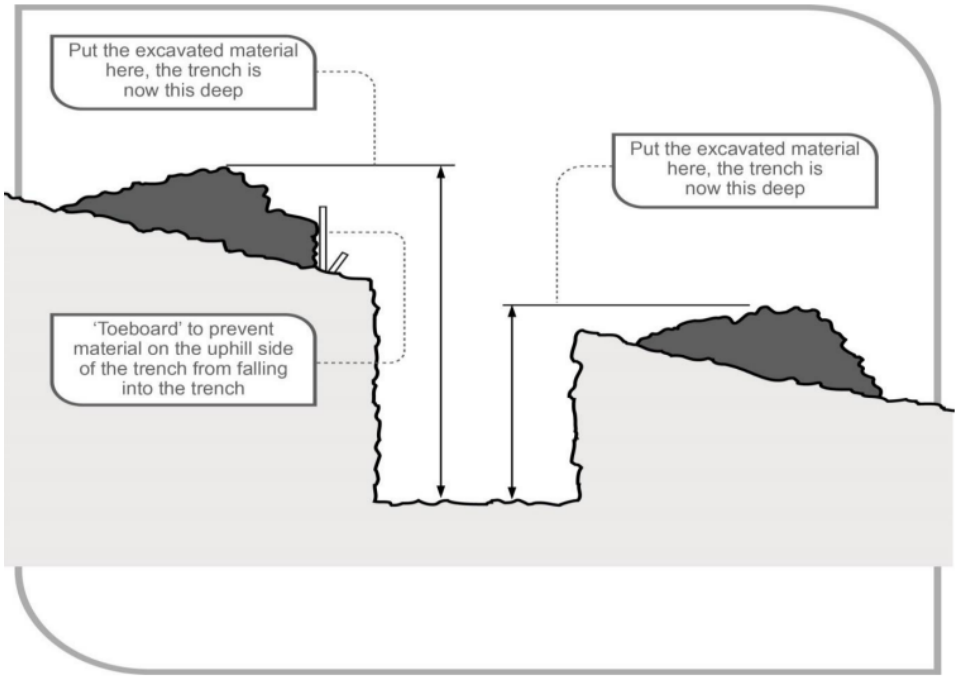

Figure 1: (Safe Work Australia - Model Code of Practice: Excavation work)

Completing of Work

On completion of work the area must be reinstated to ensure the area is safe and returned to its original state.

Signage and Barricading

All signage and barricading must be removed from the work area. Any temporary signage or tape must be disposed of.

Hand Back

Upon the Nominated Site Delegate receiving confirmation that all Scope of Work has been completed the Nominated Site Delegate is to initiate the hand back process.

Hand Back Process

The below process is to be followed:

1. Scope of work has been completed as per work order.
2. Nominated Site Delegate completes a final inspection (if required).
3. Nominated Site Delegate accepts completed work.
4. Workplace is reinstated back to its original state.
5. Work area is handed back to Nominated Site Delegate
6. All penetration and excavation documentation is to be maintained and retained as per the WACHS Corporate Recordkeeping Compliance Policy.

2.7 Failure or Breach of Excavation procedure

If there is an Excavation procedure breach:

- the Nominated site Delegate will investigate the alleged breach and possible reasons for the breach
- determine appropriate action to be taken.

If there is a safety risk related to the failure or breach:
- complete a WACHS Safety Risk Report Form (SRRF)

Hazards and incidents must be reported in line with the Hazard and Incident Management Procedure. If there is a notifiable incident relating to the excavation work, underground essential services information must be retained for two years after the incident occurs.

3. Roles and Responsibilities

Person Conducting a Business or Undertaking (PCBU) is responsible for:
- ensuring workers complete required inductions
- ensuring training, supervision information and information is provided.
- ensuring workers have been trained or deemed competent
- ensuring that equipment used meets standards and is regularly inspected and maintained
- establishing and maintaining safe work practices
- providing PPE and usage guidelines.

The **Regional Manager** Infrastructure and Support Services (RMISS) is responsible for:
- establishing and maintaining safe work practices
- selecting the Nominated Site Delegate; supervisor or manager or nominated delegate
- authorisation of works to begin when risks are high or intolerable
- managing and overseeing this procedure
- operational processes being undertaken and oversight of compliance
- develop and review emergency procedure for excavation activities.

The **Nominated Site Delegate,** as nominated by RMISS, is responsible for:
- ensuring workers complete required inductions
- providing information, training, and supervision
- verifying workers have necessary licences and training (copies must be obtained and retained)
- if used, ensure gas monitors are calibrated as per OEM manual (copies must be obtained and retained)
- providing emergency procedure for excavation activities and ensuring they are known
- ensuring risk assessments have been conducted before the start of any excavation work
- ensuring that equipment specific instructions (Safe Work Method Statements) are developed and inspected periodically (at least annually)
- Report hazards and incidents in line with the Hazard and Incident Management Procedure.

The **Regional Work Health Safety and Security Manager** is responsible for providing:
- advice to managers and supervisors on excavation requirements in the workplace as it relates to monitoring and compliance
- advice and consulting with managers and staff on how to manage hazards and risks that have been identified and raised via SRRF reporting

The **Spotter** is responsible for:
- observing the work area and identifying any hazards

- safely positioning themself near the equipment or vehicle and provide the worker (operator) with information, including directions and details they cannot see or hear on their own
- safely direct personnel near or around the equipment/work area
- halting the work and informing the worker of any changes in conditions or incompatible activities that may negatively impact the work area or surrounding areas
- activating the emergency alarm as necessary.

Workers are responsible for:
- performing risk assessment
- using excavation procedure to control hazards
- taking reasonable care of their own and others' safety and health
- following reasonable instructions to ensure work is completed safely
- undertaking the relevant training
- cooperating with PCBU in carrying out safety and health requirements.

All staff are required to comply with the directions in WACHS policies and procedures as per their roles and responsibilities. Guidelines are the recommended course of action for WACHS and staff are expected to use this information to guide practice. If staff are unsure which policies procedures and guidelines apply to their role or scope of practice, and/or are unsure of the application of directions they should consult their manager in the first instance.

4. Monitoring and Evaluation

Monitoring for this document is conducted by the People Capability and Culture and Infrastructure and Environment Directorates to ensure compliance across all WACHS sites. This involves periodic reviews of the following:
- comparison of risk assessments with work orders raised in Agility
- periodic assessment of site-specific registers, including monitoring inspection and maintenance frequency
- regular assessment of the Online Contractor Induction System to ensure that contractors have been inducted according to WACHS expectations for safe working practices.

Evaluation of this document will be undertaken collaboratively by the People Capability and Culture and Infrastructure and Environment Directorates utilising the outcomes of periodic review and auditing data as well as stakeholder feedback.

5. References

Standards Australia. AS 4744.1-2000: Steel Shoring and Trench Lining—Part 1: Design. Sydney: Standards Australia, 2000. Accessed August 12, 2025. https://store.standards.org.au/explore-standards/construction?page=67.

WorkSafe Western Australia. Code of Practice: How to Manage Work Health and Safety Risks. Perth: Government of Western Australia, 2024. Accessed August 12, 2025. https://www.worksafe.wa.gov.au/publications/code-practice-how-manage-work-health-and-safety-risks

WorkSafe Western Australia. Code of Practice: Excavation. Perth: Government of Western Australia, 2024. Accessed August 12, 2025. https://www.worksafe.wa.gov.au/publications/code-practice-excavation.

WorkSafe Western Australia. Code of Practice: Managing the Risk of Falls at Workplaces. Perth: Government of Western Australia, 2024. Accessed August 12, 2025.https://www.worksafe.wa.gov.au/publications/managing-risk-falls-workplaces-code practice.

6. Definitions

Term	Definition
Combined Utilities Drawing/s	Combined Utilities Drawing/s are any document which clearly and concisely specifies where services are.
Excavation	Excavation is the process of removing earth, rock, or other materials to create an open space such as a trench, hole, or cavity
Hazard	A hazard is a situation or item that has the potential to harm people, property, or the environment
Hierarchy of Controls	Hierarchy of controls is a process used to keep employees safe from injury and illness in the workplace. The five steps in the hierarchy of controls, from most effective to least effective, are elimination, substitution, engineering controls, administrative controls, and personal protective equipment.
Job Hazard Analysis form	The Job Hazard Analysis form (JHA) is a document that outlines work activities to be carried out at a workplace into logical job steps, identification of hazards associated with each step and the controls for those hazards.
Penetration	Penetration is any activity that involves cutting, drilling, or boring into existing structures such as walls, floors, ceilings, or slabs.
Personal Protective Equipment	Personal Protective Equipment (PPE) is equipment and clothing that is used or worn by an individual person to protect themselves against, or minimise their exposure to, workplace risks. It includes items such as face masks and respirators, coveralls, goggles, helmets, gloves, and footwear.
Person Conducting Business or Undertaking	Person Conducting Business or Undertaking (PCBU) conducts a business or undertaking alone or with others. WACHS is considered a PCBU.
Risk	Risk is the likelihood and consequence of injury or harm occurring.
Risk Assessment	Risk assessment is a systematic process of evaluating the potential risks that may be involved in a task or piece of equipment and the likelihood of a hazard causing harm to a person.
Spotter/Observer	A spotter/observer is an individual who monitors the work area for any potential hazards and directs

	equipment operators and workers around the equipment.
Trench Support	Trench support is any system or device used to support the ground to ensure the trench or excavation does not collapse.
Work	Work is any activity, physical or mental, carried out during a business, industry, commerce, an occupation, or a profession.
Worker	A worker is any person who carries out work for a person conducting a business or undertaking, including work as an employee, contractor, or subcontractor (or their employee), self-employed person, outworker, apprentice or trainee, work experience student, employee of a labour hire company placed with a 'host employer' or a volunteer.

7. Document Summary

Coverage	WACHS-wide
Audience	All workers
Records Management	Non Clinical: Corporate Recordkeeping Compliance Policy
Related Legislation	*Health Services Act 2016* (WA) Work Health and Safety (General) Regulations 2022 (WA) *Work Health and Safety Act 2020* (WA)
Related Mandatory Policies / Frameworks	• MP 0006/16 Risk Management Policy • Integrity Policy Framework • Risk, Compliance and Audit Framework • Work Health and Safety Framework
Related WACHS Policy Documents	• Asbestos Work Procedure • Hazard and Incident Management Procedure • Job Hazard Analysis Procedure • Lockout and Tagout Works Procedure • Safe Work Method Statements Procedure • Work Health and Safety Policy • Working With Silica Procedure
Other Related Documents	• WorkSafe Code of Practice: Excavation • WorkSafe Code of Practice: How to manage work health and safety risk • WorkSafe Code of Practice: Managing the risk of falls at workplaces
Related Forms	• Job Hazard Analysis Form • Safety Risk Report Form • Safe Work Method Statement
Related Training Packages	Available from MyLearning: • Excavation Toolbox Training
Aboriginal Health Impact Statement Declaration (ISD)	ISD Record ID: 4450
National Safety and Quality Health Service (NSQHS) Standards	1.07, 1.08, 1.09, 1.10, 1.20, 1.21, 1.22, 1.25, 1.29, 131
Aged Care Quality Standards	Nil
Chief Psychiatrist's Standards for Clinical Care	Nil
Other Standards	AS4744.1 Steel Shoring and trench lining equipment (accessed via the WACHS Library)

8. Document Control

Version	Published date	Current from	Summary of changes
1.00	13 August 2025	13 August 2025	New procedure

9. Approval

Policy Owner	Executive Director Infrastructure and Environment
Co-approver	Executive Director People Capability and Culture
Contact	Director Infrastructure
Business Unit	WACHS Infrastructure and Environment
EDRMS #	ED-WA-25-362056

This document can be made available in alternative formats on request.