

EXCAVATION / PENETRATION PROCEDURE

Table of Contents

1	Purpose	2
2	Scope	2
3	Roles and Responsibilities	2
4	General Requirements	4
4.1	What is Excavation / Penetration?	4
4.2	General Hazards Associated with Excavation / Penetration	4
4.3	Documents Used to Manage Excavation / Penetration	5
4.4	Risk Assessment	5
5	Definitions	9
6	Associated Documents	10
7	References	10
8	Monitoring, Evaluation and Review	10
9	Administration	11
	Attachment A – Permit Process Diagram	12

1 Purpose

The purpose of this Procedure is to outline the minimum requirements and provide guidance to ensure that excavations and penetrations are carried out in a manner that is safe, environmentally friendly and protects services and assets.

2 Scope

This Procedure applies to the following.

- Any work assignment on any Mid West Ports Authority (**MWPA**) site, operational area or leased site involving excavation and ground penetration activities with a depth more than 150mm from surface. Note that this Procedure is designed to prevent services and assets within leased areas from being damaged by excavation and/or ground penetration activities. The operational control of the activity still resides with the leaseholder.
- All penetrations of floors, walls, roofs, and ceilings regardless of depth, of any building or structure under the operational control of MWPA. Lease or licence holders that have operational control of the building or structure are responsible for the management of the activity.

Note – For excavation planning purposes – All MWPA sites may have legacy contamination (metal concentrates, PFAS, asbestos, hydrocarbons) and all soil should be considered as potentially contaminated.

3 Roles and Responsibilities

Role	Responsibility
Permit Owner	<p>Person who is undertaking the excavation / penetration task and completes the initial permit request.</p> <p>The Permit Owner ensures work is conducted according to the requirements of this Procedure.</p>
Permit Authoriser	<p>MWPA person(s) or their delegates who have relevant qualifications and/or experience to review the activities described in the permit prior to approval.</p> <ul style="list-style-type: none"> • Maintenance Superintendent • Maintenance Supervisor • Maintenance Leading Hand • Project Manager • Electrical Engineer • Engineer • Electrical Superintendent <p>Note – Where the work is identified as being in a confined space, the Excavation Coordinator / Permit Owner <u>shall</u> be deemed a competent person for confined space activities, and where the work is specifically electrical, it <u>shall</u> be a Maintenance Electrician, the Electrical Superintendent, or an Electrical Engineer.</p>

Role	Responsibility
Permit Coordinator	MWPA person who approves the excavation / penetration activities permit once all the permit criteria are met.
Maintenance Electrician	MWPA person with relevant qualification or experience to review the Electrical / Communication services drawings for the area prescribed in the permit prior to approval.
Electrical Superintendent	MWPA person responsible to review the Electrical / Communication services drawings for the area prescribed in the permit prior to approval.
Maintenance Plumber	MWPA person with relevant qualification / experience to review the water and sewer services drawings for the area prescribed in the permit prior to approval.
Maintenance Supervisor / Leading Hand	MWPA person with relevant qualification / experience to review services drawings for the area prescribed in the permit and approve the activity.
MWPA Engineering	MWPA person who provides approval for excavation / penetration that is undertaken in an area with structural implications (Wharf deck, Breakwater, Roadway, Building structural components, shiploader structure).
Environmental Advisor	Reviews all excavation permits and provides environmental guidance. Where the Advisor or the risk assessment specifically identifies that material may be contaminated / required to be moved from its present location, they <u>shall</u> review and approve the permit application. Refer to Section 4.4 for further detail.
Commercial Officer	Provides approval for excavation / penetration activities to be undertaken on a MWPA leased site, by the leaseholder or by any Contractors employed by the Leaseholder.
Work Health and Safety Advisors	MWPA workers who conduct health and safety inspection and audit services of excavation / penetration activities.
Manager Maintenance Services	MWPA Person with delegated authority to approve relocation of excavated soil on MWPA sites.

4 General Requirements

4.1 WHAT IS EXCAVATION / PENETRATION?

Excavation / penetration is defined by MWPA as any activity exceeding 150mm below ground surface that involves:

- surface excavations;
- penetration by star pickets;
- drilling by mechanical device;
- within a structure – any activity involving the penetration of any floors, walls, roofs, and ceilings is to take place, regardless of depth;
- trenching by mechanical device (for example, a backhoe, ditch witch or excavator); and
- tunnelling and/or shaft building.

Notes

- Excavation that includes tunnelling or a shaft or trench with an excavated depth greater than 1.5 metres is further defined as High Risk Construction Work.
- Minor excavation by hand / shovel or non-intrusive digger (Vacuum Excavator) may not require an excavation / penetration permit. Refer to Permit Coordinator for assessment on a case-by-case basis.

4.2 GENERAL HAZARDS ASSOCIATED WITH EXCAVATION / PENETRATION

General hazards associated with excavation / penetration activities include the potential for the following.

- **Injury to Workers**
 - From the disruption to concealed services
 - Mobile plant / portable equipment
 - Exposure to contaminated soil / water
 - Ground movement / trench collapse
- **Damage** to existing buried or concealed services such as electrical, telecom, water and natural gas.
- **Future damage** to new services that are installed without accurate recording of their type and physical location.

4.3 DOCUMENTS USED TO MANAGE EXCAVATION / PENETRATION

Please note that the *Work Health and Safety (General) Regulations 2022*, have specific definitions and management requirements related to excavation work.

Mandatory documents that are required to manage excavation / penetration activities include the following.

Requirement	Document
General Excavation / Penetration Work	<p>The <u>mandatory</u> documents used to manage excavation / penetration include:</p> <ul style="list-style-type: none"> • Job Safety and Environmental Analysis (JSEA). Note that ALL <u>excavation work</u> is defined as construction work. • Permit to Work Procedure • Authority to Work • Application to Excavate / Penetrate Permit
Excavation – High Risk Construction Work	<p>The <u>mandatory</u> documents used to manage specific high risk excavation include:</p> <ul style="list-style-type: none"> • Safe Work Method Statement (SWMS); • Permit to Work Procedure (additional permits may be required); • Authority to Work; • Application to Excavate / Penetrate Permit; and • Safe Work Procedure(s) <p>Refer to Definitions for High Risk Construction Work – (i) Excavation – a shaft or trench with an excavated depth greater than 1.5 metres; or (ii) a tunnel.</p>

4.4 RISK ASSESSMENT

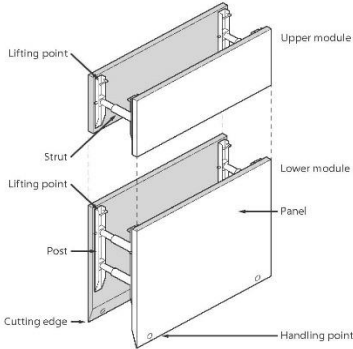
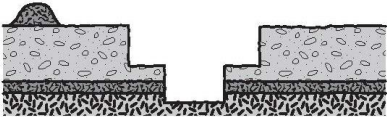

A JSEA and/or SWMS must be completed prior to conducting excavation / penetration and reviewed on location prior to the commencement of work.

Requirement	Topic
Minimum Written Requirements	<p>The minimum written requirements recorded must include the following.</p> <ul style="list-style-type: none"> • Essential Services Information – The location and depth of any services underground, within walls, ceilings, roofs, and flooring that may be affected by the excavation / penetration, as far as practicable, <u>must</u> be identified and where practicable to do so, be marked and isolated. • A current buried services drawing shall accompany the JSEA / SWMS for underground excavations / penetrations. • Within buildings or structures a current services drawing, where possible, shall be provided and accompany the JSEA / SWMS.

Requirement	Topic
	<ul style="list-style-type: none"> • External parties with services in the area shall be consulted (examples include but are not limited to power / water / communications). • Any buried or concealed services that are discovered during the excavation / penetration activity shall be immediately reported to the Responsible Person and/or Permit Coordinator and works suspended immediately. The Permit Coordinator shall assess the situation with the relevant persons (Safety, Electrical, Plumbing, Engineering or Environment) and shall determine if the works can continue / are discontinued indefinitely / or the current permit cancelled and a new permit raised which details the change in conditions. • Ground Stability – An assessment of the surface upon which the excavation / penetration shall be performed, and suitable controls listed. Consideration shall be given to work methods. • Occupational Hygiene – As identified in Section 2, all soil must be considered as potentially contaminated. JSEAs must consider potentially contaminated soil / groundwater as an occupational hazard and ensure: <ul style="list-style-type: none"> • airborne contaminants (dust) is controlled and/or respiratory protection is provided; and • workers follow good personal hygiene practices (handwashing) to limit exposure to potentially contaminated soil. • Environmental – As identified in Section 2, all soil must be considered as potentially contaminated, therefore there is a requirement to manage surplus excavated soil. <ul style="list-style-type: none"> • If a quantity of soil greater than 100kg (1 x wheelbarrow) will be moved or has the potential to be moved from the excavation site, MWPA Environmental workers must be notified prior to the excavation starting (as part of the Excavation/Penetration Permit approval process) or, if an unplanned activity, then before the soil is moved. • Refer to MWPA specific management requirements set out in the Contaminated Soil and Operational Waste Management Procedure.

Requirement	Topic
	<ul style="list-style-type: none"> • Soil Management <ul style="list-style-type: none"> • No soil is to leave the Port without first being tested, results reviewed and written approval from the MWPA Environment Team is obtained. This is to ensure potentially contaminated soil is disposed of in accordance with the requirements of the WA Landfill Waste Classification and Waste Definitions 1999. • Approval is to be obtained from the Manager Maintenance Services for an alternative location before excavated soil that must be relocated from the excavation site to another location within MWPA's site for testing, disposal or reuse purposes is moved. <ul style="list-style-type: none"> • Information required before approval. <ul style="list-style-type: none"> • Volume of material • Particle size (General description, that is, gravel) • Likelihood of contamination • If reuse: purpose of reuse • If temporary: Length of time to be stored and location for stockpiling • Access – For excavations – signage is <u>mandatory</u>. <ul style="list-style-type: none"> • For all excavations / penetrations identify what barricading / exclusion methods are required to inform and restrict access to the hazardous area surrounding the work. • If the site is attended or work is underway soft barricading, information tape / tags are generally used. • If at shift or days end and the excavation is to be left unattended, the Permit Owner / Excavation Coordinator must ensure as far as practicable, that the work area is secured from unauthorised access (including inadvertent entry). Barricading to be marked with Danger tape and information tags. Information tag is to contain the following information – Name of Permit Owner / Excavation Coordinator, Date, Contact details of the Owner or Coordinator. • The Permit Owner / Excavation Coordinator who proposes to excavate deeper than 1.5m must ensure, as far as practicable, that the work area is secured from unauthorised access (including inadvertent entry). • For all works that may impact on the management of traffic / vehicles refer to the Traffic Management Procedure.

Requirement	Topic
	<ul style="list-style-type: none"> • Proximity – The proximity of nearby hazards such as structures and other works being undertaken must be listed. • Other Work / Activities – If other work is being undertaken in the area (nearby / above / below), which could impact on the operation they must be noted. This may include the need for traffic management – refer to Permit to Work Procedure for more detail.
	<ul style="list-style-type: none"> • Mobile Plant and Equipment – What specific equipment is required for the task? <ul style="list-style-type: none"> • As a minimum, the operation of mobile plant and equipment and the specific hazards associated with that equipment shall be listed. • The schedule for inspection of equipment prior to use shall be identified. • The following examples should also be considered. <ul style="list-style-type: none"> • Task specific PPE. Where excavation occurs – specific hygiene measures may be required for contaminated soil exposure. • Emergency Procedures – Emergency procedures must be identified in the JSEA or separate document and need to ensure they have adequately identified. <ul style="list-style-type: none"> • Local / job site emergency response, ensuring personnel are aware of immediate response requirements. • Emergency contacts for notification and escalation. • Emergency equipment that is suitable for the nature and scale of the work (for example, rescue equipment, first aid equipment). • Workers and Training – The minimum number of workers required to safely complete the task shall be noted. Additionally: <ul style="list-style-type: none"> • workers must be provided with information about the underground services; and • workers need to be informed that all excavation work is construction work, therefore mandatory ‘general construction induction training’ (colloquially called a White card) and competence requirements must be met.
Confined Spaces	<p>Refer to the Confined Space Entry Procedure for specific control measures that apply to excavations that are also confined spaces.</p> <p>A Confined Space Entry Permit will be required for access to an excavation that is deemed a confined space.</p>

Requirement	Topic
<p>Specific Considerations – Shoring / Benching / Battering</p>	<p>A worker who proposes to excavate a trench at least 1.5m deep, must minimise the risk to any person arising from the collapse of the trench or excavation by ensuring all sides of the trench / excavation are adequately supported by one or more of the following.</p> <ul style="list-style-type: none"> <p>Shoring, by shielding or other comparable means (for example, boxing).</p>  <p>Benching</p>  <p>Battering</p>  <p>Note – All excavations, trenches, or pits that remain open at the end of shift, <u>shall</u> either be constructed with egress for fauna, or covered, such that animals cannot become trapped.</p>

5 Definitions

JSEA	Job Safety and Environmental Analysis
Construction Work	Construction work includes any work connected with an excavation. {r.289, <i>Work Health and Safety (General) Regulations 2022</i> }
Excavation – High Risk Construction Work	High risk construction work means construction work that: <ul style="list-style-type: none"> (g) is carried out in, or near; (i) a shaft or trench with an excavated depth greater than 1.5 metres; or (ii) a tunnel. {i.291, <i>Work Health and Safety (General) Regulations 2022</i> }

6 Associated Documents

Document Title
Application to Excavate/Penetrate Permit
Contaminated Soil and Operational Waste Management Procedure
Job Safety and Environment Analysis (JSEA)
JSEA Guide to Common Hazards
MWPA Risk Assessment Matrix
Risk Assessment Template
Risk Management Procedure
Waste Management Procedure

Location – Mid West Ports Intranet – [Document Centre](#)

7 References

Standard	Title
Australian Standard	AS3798-2007 Commercial and Residential Earthworks
	Commission for Occupational Safety and Health, Excavation: Code of practice, Department of Mines, Industry Regulation and Safety 89pp

Location – SAI Global – <https://www.saiglobal.com/online/>

Act or Regulation
<i>Work Health and Safety Act 2020</i>
<i>Work Health and Safety (General) Regulations 2022</i>

Location - Western Australian - <https://www.legislation.wa.gov.au> | Australian - <https://www.legislation.gov.au>

8 Monitoring, Evaluation and Review

This document is required to be reviewed every two years from the last scheduled review date.

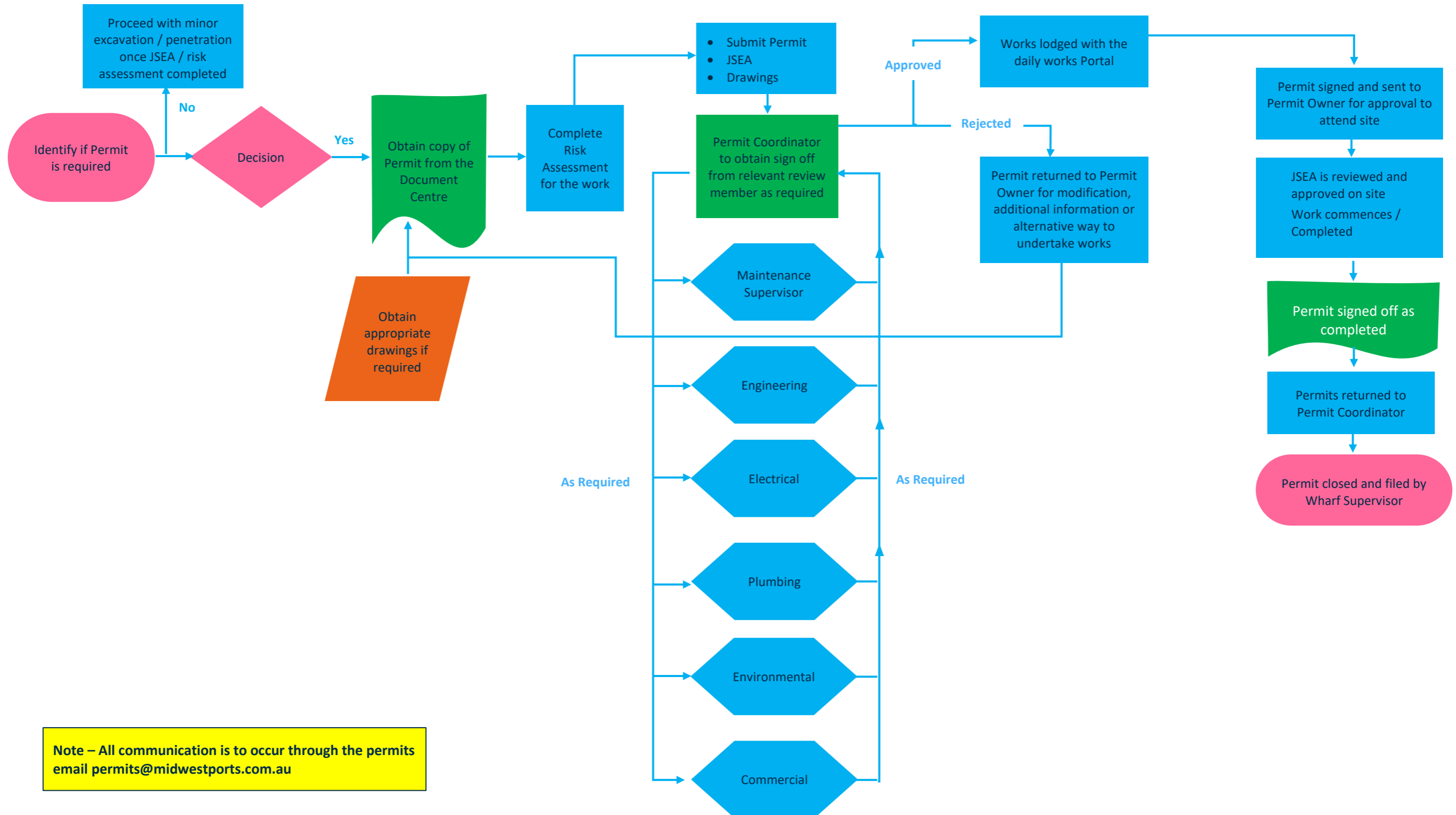
Minor updates made within this two year period, will not be taken as a *full review*.

The Document Custodian is responsible for conducting the review in accordance with **Controlled Documents Review and Approval Process Work Instruction**.

9 Administration

Document Custodian: Maintenance Services Manager
Document Approver: Chief Operating Officer
Approval Date: 13 August 2024
Document Review Period: 2 yrs

Attachment A – Permit Process Diagram



Note – All communication is to occur through the permits email permits@midwestports.com.au