AM21
Technical procedure

Slope stability incident response

ILC-AM-TP1-602

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About this document

Document information

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Approvals

	Position	Name	Date
Approved by:	Director, Corridor Infrastructure & Engineering, SER	John Mcleod	22/02/2022
Content owner(s)	Regional & Outer Metropolitan Division		

Revision history

Version	Date	Revision description
1.0	3 April 2020	Document created
1.1	6 April 2020	Table 3.2.1 document number corrected
1.2	22 Feb 2022	Updated reporting and recording requirements

Note: TfNSW regularly reviews and updates documents in the ILC Management System in accordance with the principle of continual improvement.

Therefore, the version you are working with might now have been superseded. The most recent version of this document is available on the TfNSW/RMS intranet in the TechInfo site.

Contents

1 Introduction

1.1 Purpose

The purpose of this procedure is to describe the slope stability incident response including incident risk assessment, clean-up, traffic management and post clean-up activities. These activities shall be done in response to any slope stability incident which damages TfNSW infrastructure or poses a safety threat to road users, staff or contractors who are engaged in clean-up activities post incident. It also outlines responsibilities for:

- advising the necessary parties and authorities in accordance with the identified severity level of the incident;
- assuming control of the site; and
- accountability and decision making for re-opening the road following clean-up after a slope failure.

1.2 Scope

This procedure applies to:

- all locations where a slope failure has occurred on any part of the State Road network maintained and operated by TfNSW or its contractors
- any situations on the State Road network with potential to compromise the safety of persons exposed to the area
- specific incidents involving slope stability issues within the wider context of traffic management procedures referenced within this document.

1.3 Overview

This procedure identifies the actions related to the activities listed below, that must be undertaken following a slope failure affecting any TfNSW road that is in operation:

- risk assessment
- roles and accountabilities in decision making
- incident reporting, recording and communication process.

No activity with regard to clearing the slope failure shall proceed prior to following the process set out in this document in full.

While this procedure provides a step by step process from initial reporting of the slope failure incident to re-opening of the road, including various situational assessments, it does not cover all possibilities. Any clean-up activities shall ‘STOP’ and a risk management process is to be initiated in situations where:

- it is not safe to gain access near the incident site to assess the risks associated with the clean-up activities; or
- clean-up activities indicate a potential risk to the clean-up crew.

Depending upon the severity of the incident, the risk management process may not identify a solution. This would result in a HOLD POINT whereby the clean-up cannot commence as specified in this procedure and may require intervention by the senior management of TfNSW to make appropriate decisions based on the specific circumstances.

A second HOLD POINT may result if, after the clean-up, the slope appears more unstable or presents a greater risk than was likely to have been present prior to the incident. In this case, the road will not be re-opened until the senior management of TfNSW has intervened and made decisions to do so.

Where escalation to senior management is necessary, notification shall be made as soon as practicable and evidence of escalation retained. A guide to notification and escalation is provided in Appendix A of TfNSW Standard *ST-001 Safety Incident Reporting, Recording and Investigation Standard*. Where there is any doubt with regard to reporting requirements, seek assistance from the relevant safety and environment personnel.

TfNSW categorises incidents by potential consequence for the purposes of reporting, notification, investigation and approval of investigation findings. TfNSW has 3 levels of investigation as indicated in the Standard ST-001:

- Level 1 – Report only to Safety Reporting Line – 1300131469
- Level 2 – Minor Incident Investigation form FT-490
- Level 3 – Major Investigation Report FT-178

The level of investigation required is determined as indicated in Section 2.1.2 of this document.

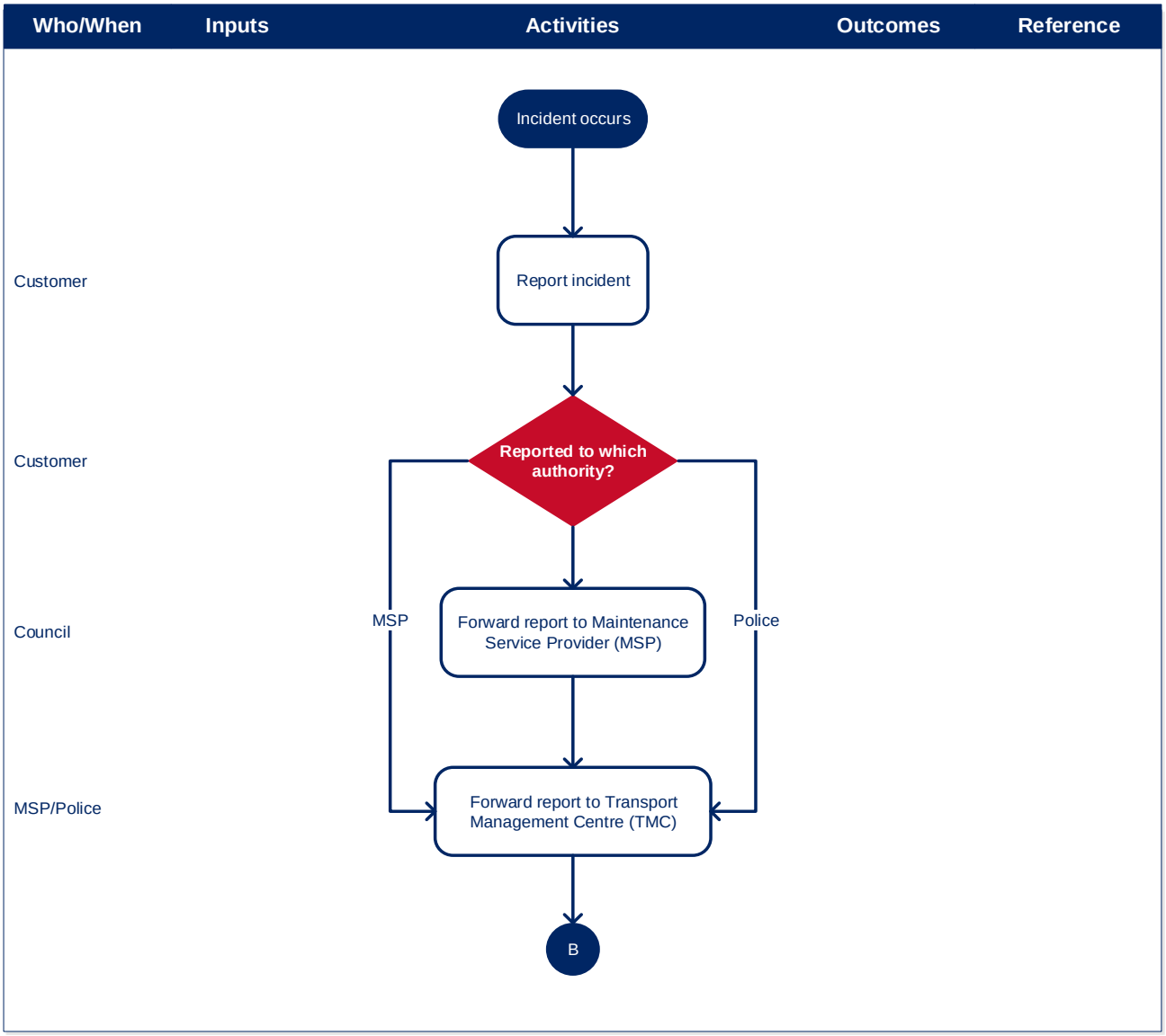
Record all readily available information about the incidence in accordance with Section 5.2.2 of QA Specification M3 – Routine Services. In addition, the geotechnical details of the incident should be recorded on the Slope Incident Record Form (see Appendix A). All recorded information shall be submitted to the Regional Asset Director for data entry of the record into the Road Slope Management System (RSMS). Response time for the initial response shall be in accordance with Section 6.11 of M3 document.

2 Procedure

2.1 Flowcharts

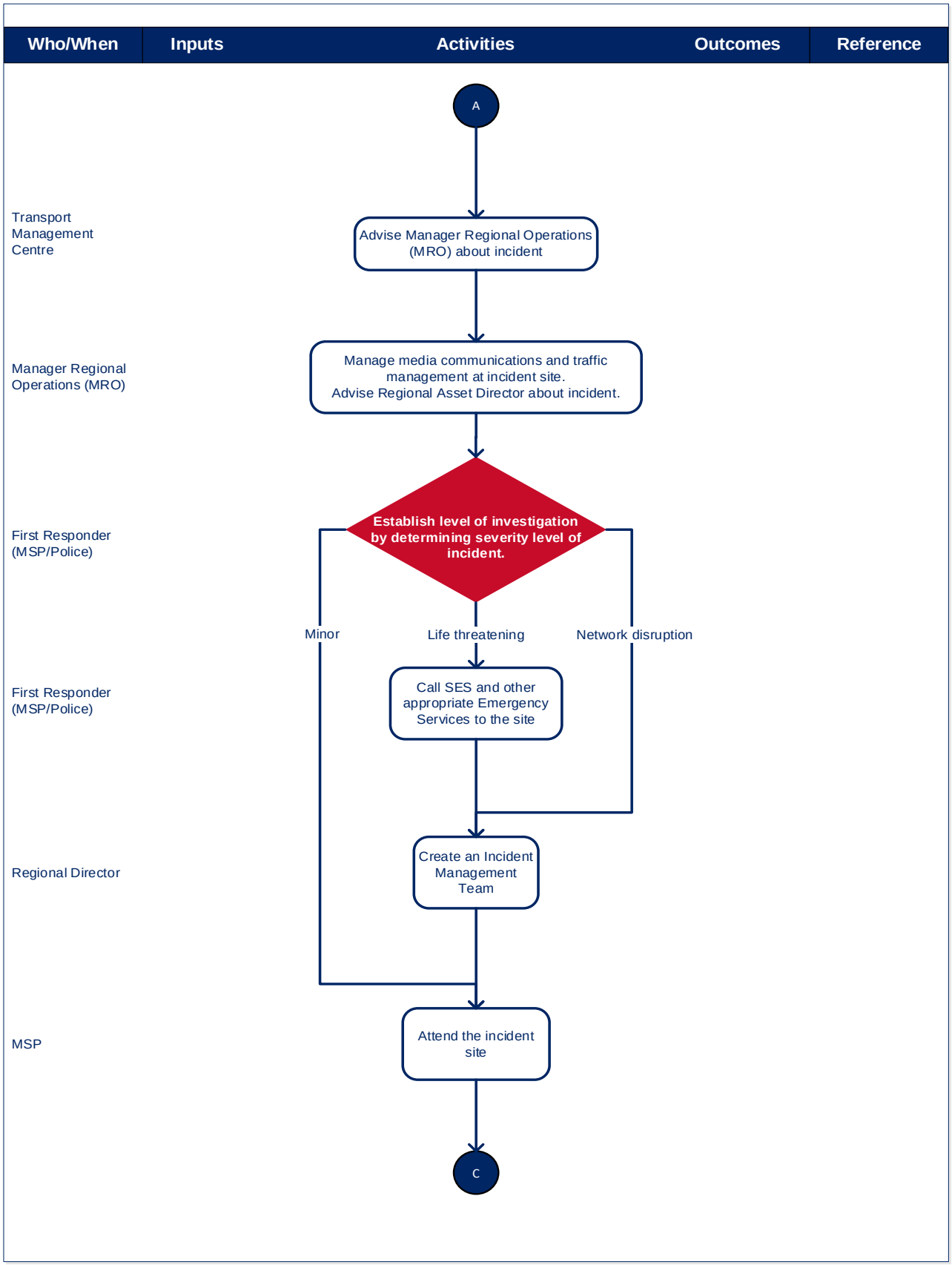
2.1.1 Incident notification (A)

Slope Incident Response Flowchart
Incident Notification (A)



2.1.2 Incidence response (B)

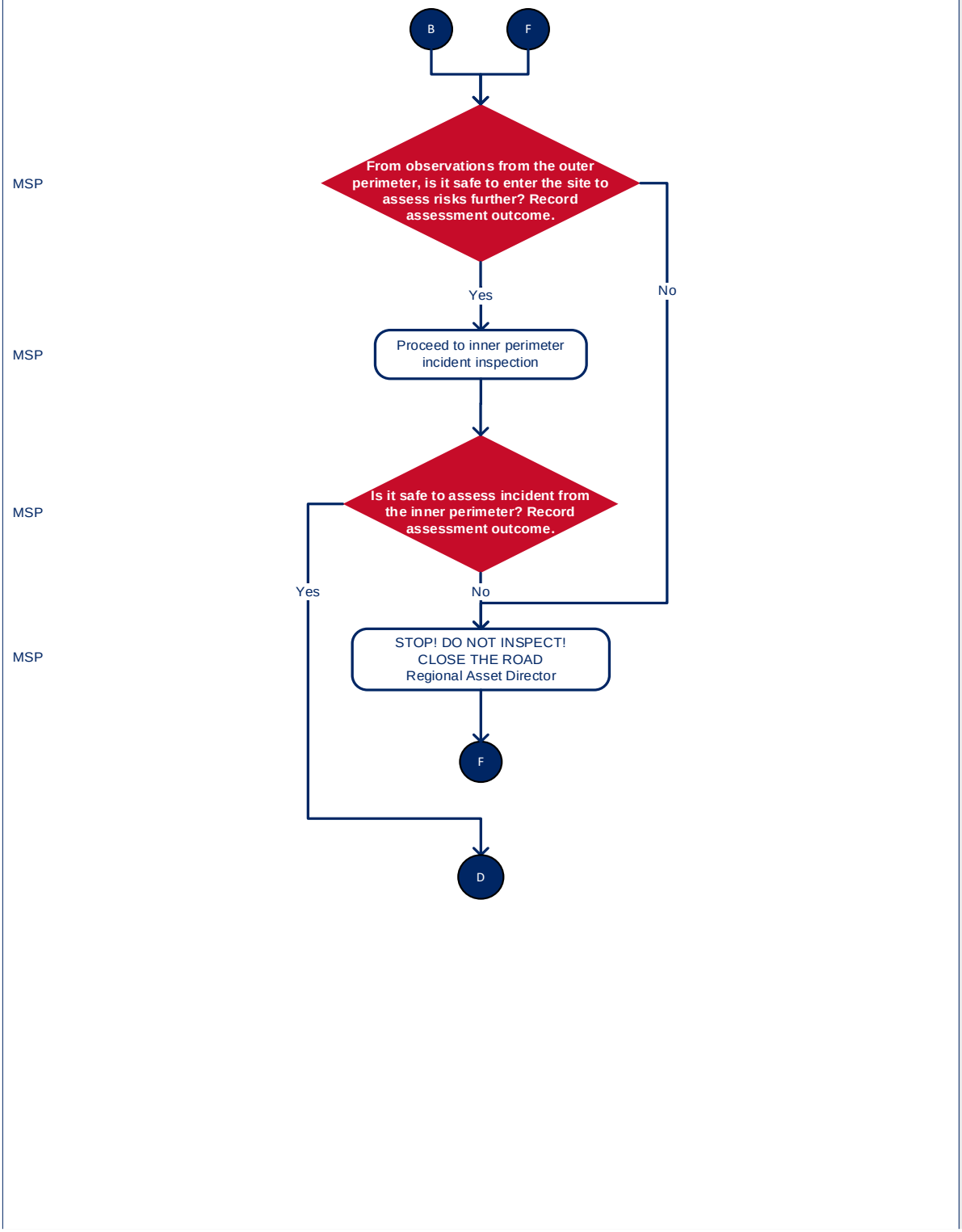
Slope Incident Response Flowchart



2.1.3 Incident assessment (C)

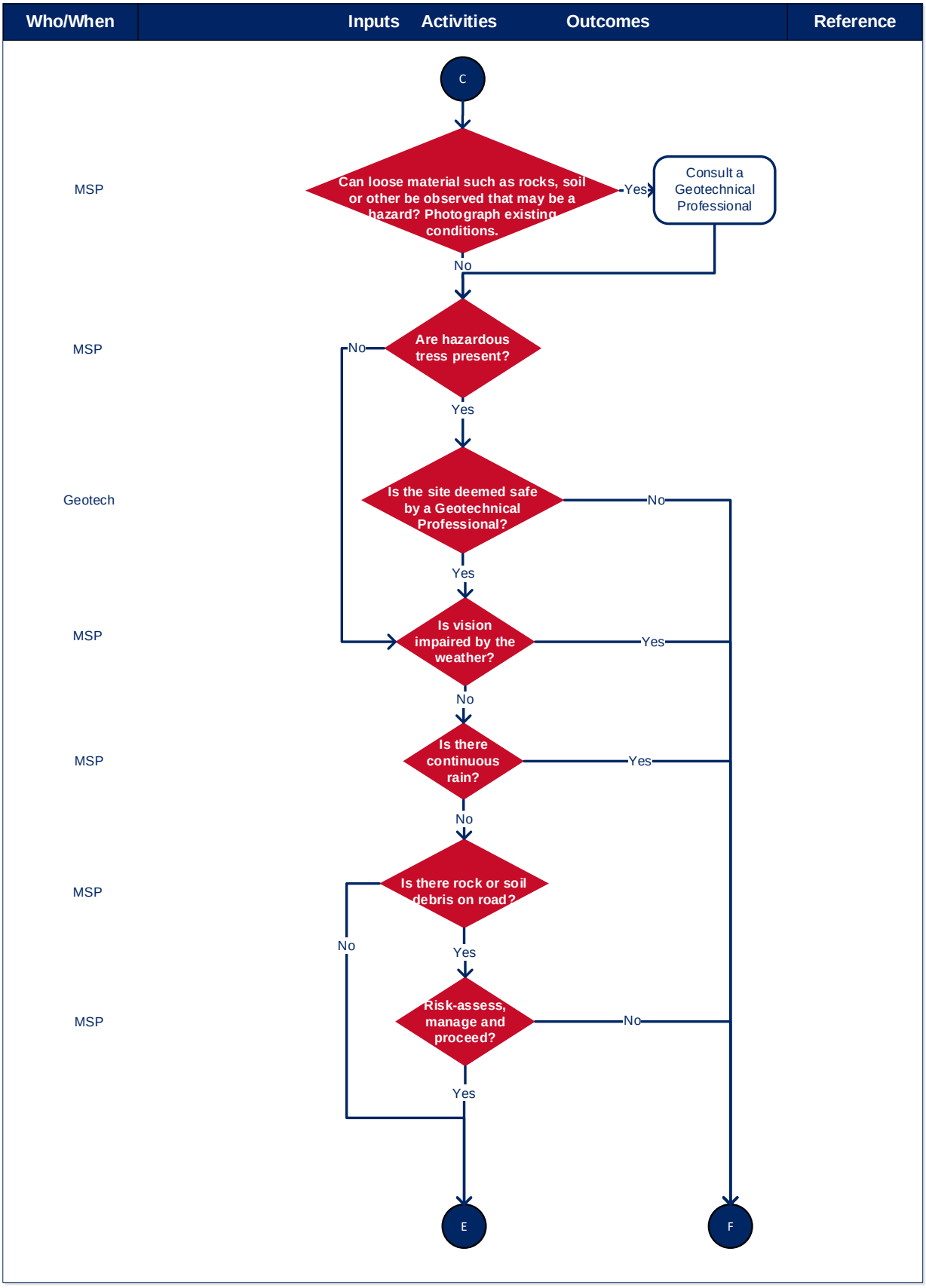
Slope Incident Response Flowchart
Incident Assessment (C)

Who/When	Inputs	Activities	Outcomes	Reference

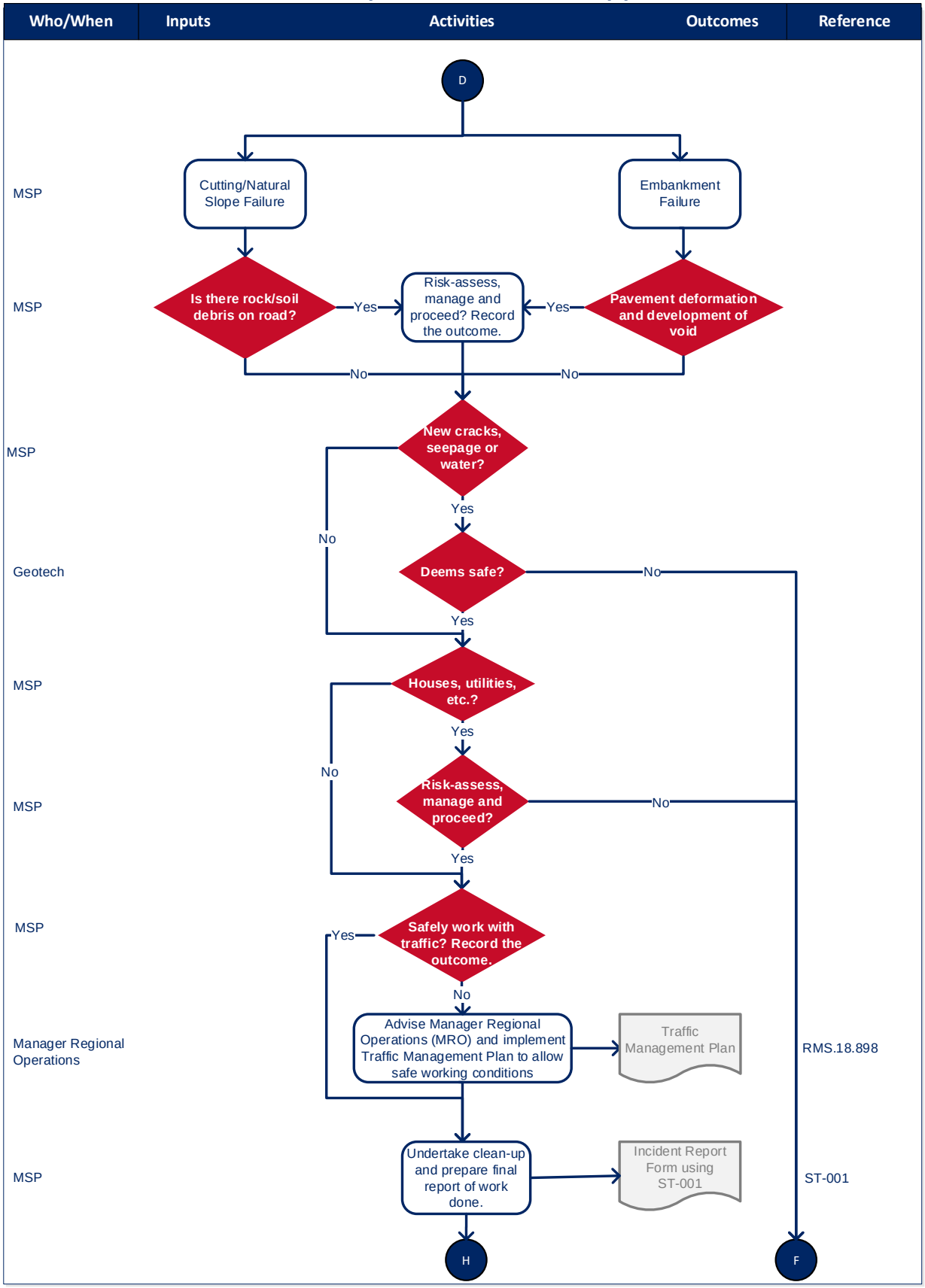


2.1.4 Clean-up risk assessment (D/E)

Slope Incident Response Flowchart
Clean-up Risk Assessment Pt.1 (D)

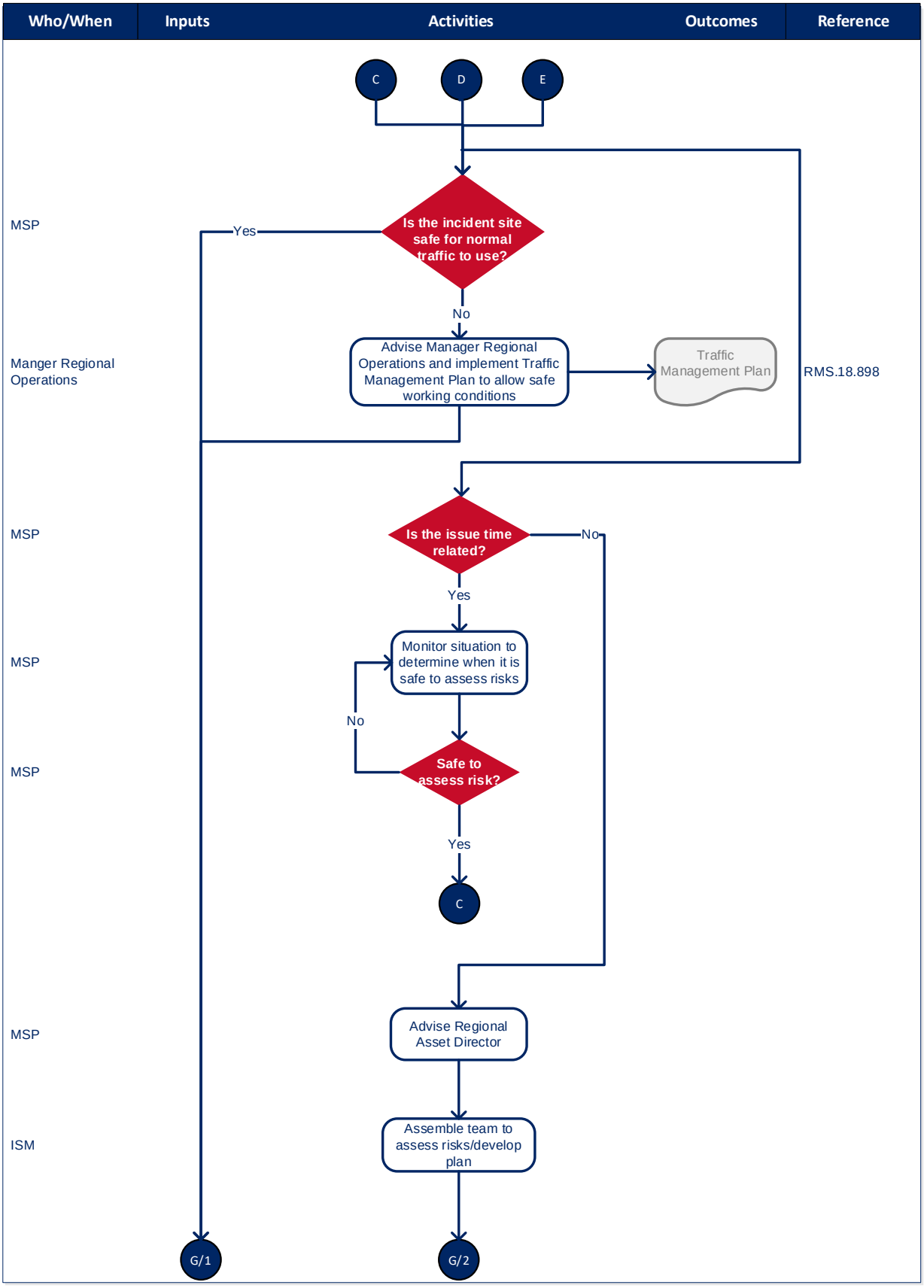


Slope Incident Response Flowchart
Clean-up Risk Assessment Pt.2 (E)

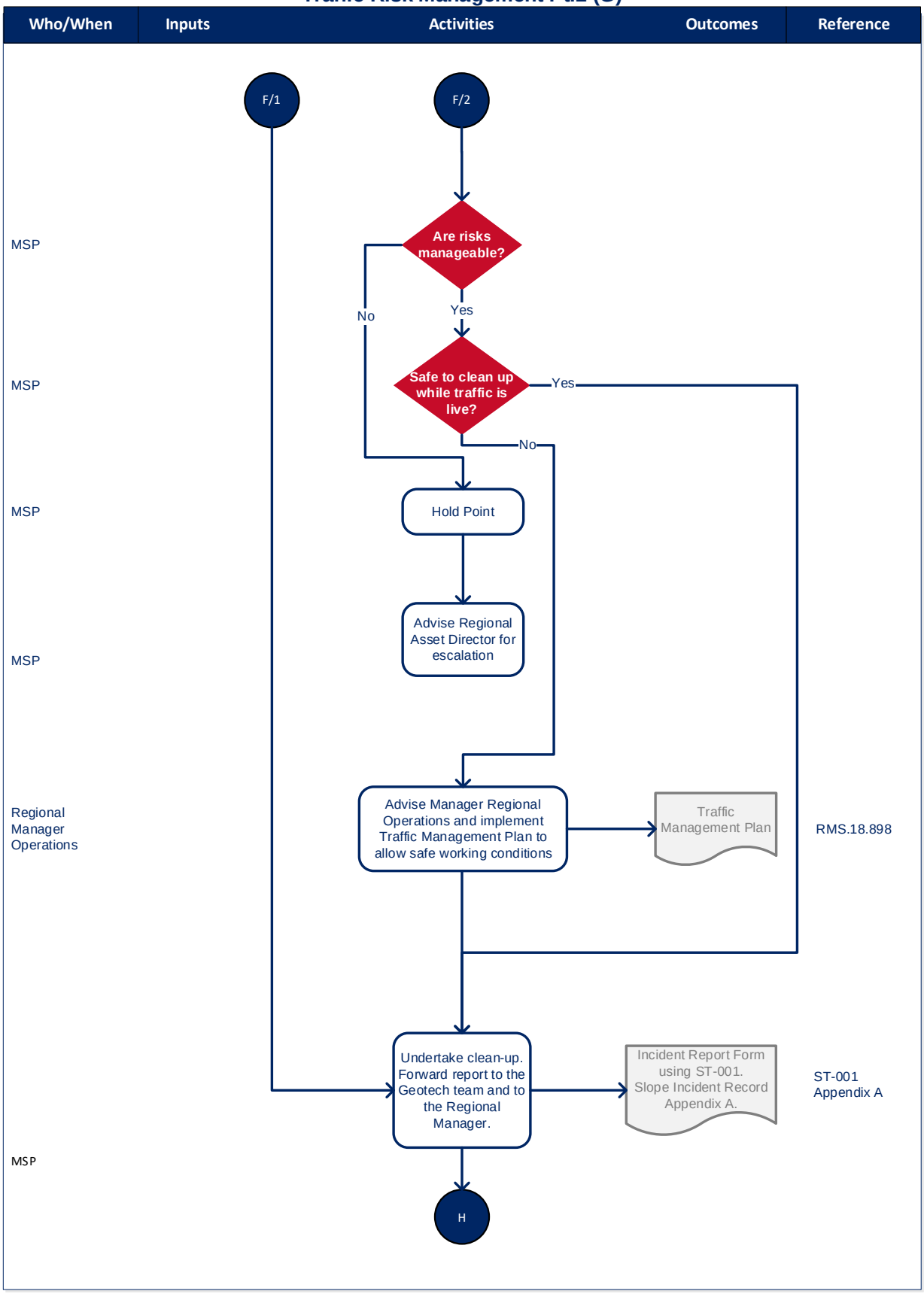


2.1.5 Traffic risk management (F/G)

Slope Incident Response Flowchart
Traffic Risk Management Pt.1 (F)

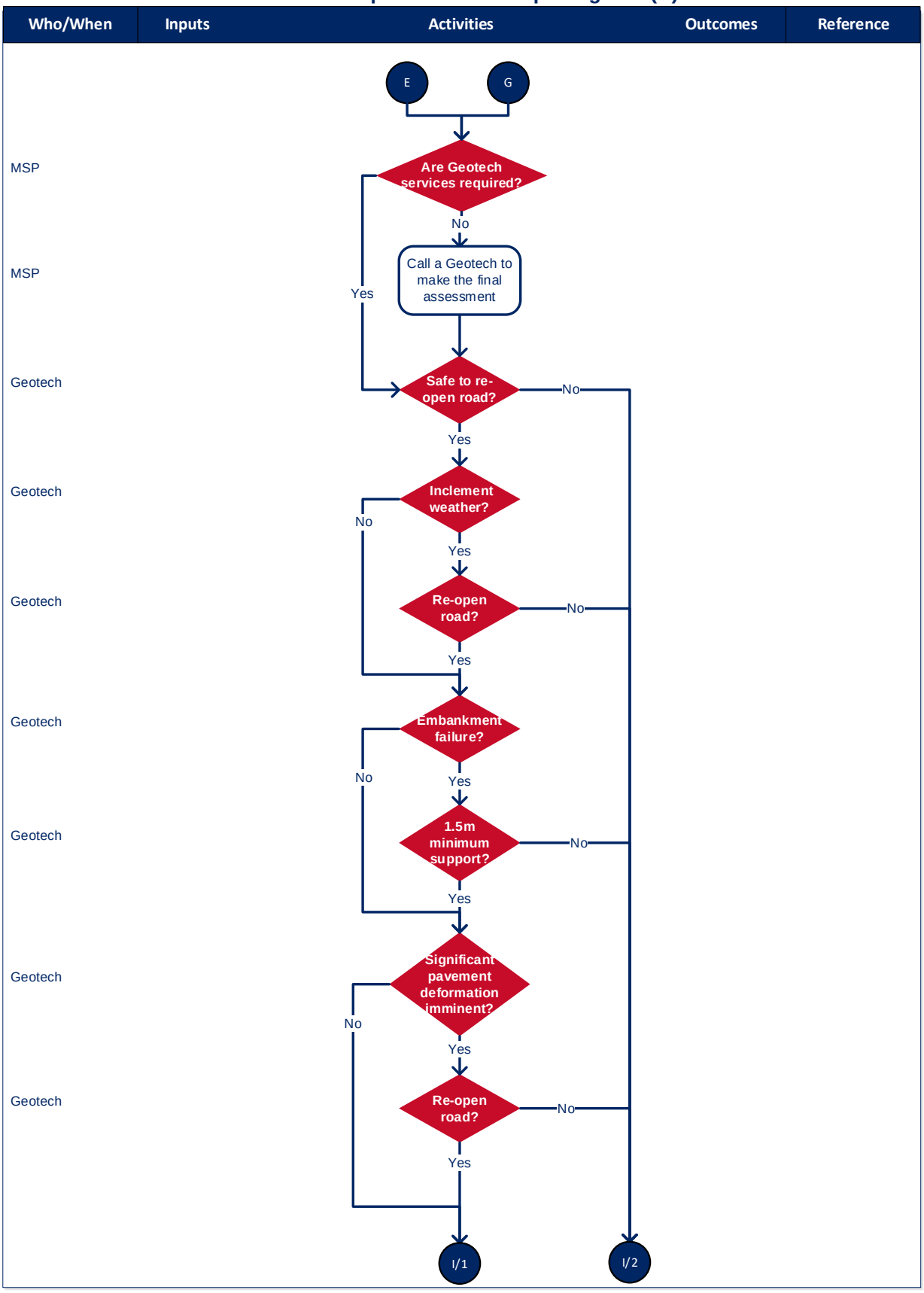


Slope Incident Response Flowchart
Traffic Risk Management Pt.2 (G)

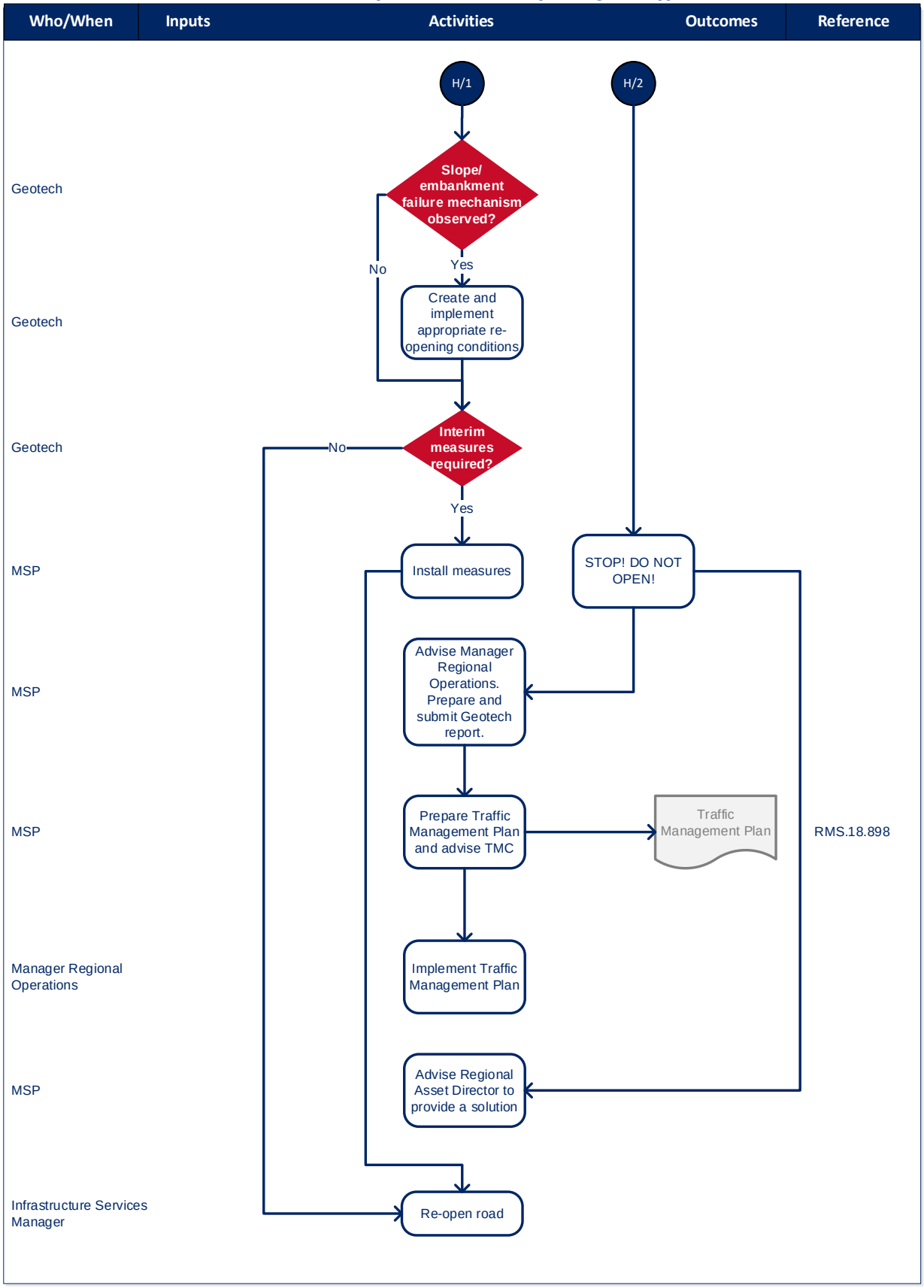


2.1.6 Post clean-up and road re-opening (H/I)

Slope Incident Response Flowchart
Post Clean-up and Road Re-opening Pt.1 (H)



Slope Incident Response Flowchart
Post Clean-up and Road Re-opening Pt.2 (I)



2.2 Roles and responsibilities

Roles	Responsibilities
Regional Director, Community & Place (North, South & West)	• Oversee the road re-opening process • Mobilise an Incident Response Team (if required)
Regional Asset Director (North, South & West) – Network and Assets	• Liaise with internal stakeholders • Release hold points regarding site safety and approve the re-opening of the road • Manage the Incident Response Team (if established) • Submit Slope Incident Record to Technical Services for recording in the Road Slope Management System (RSMS)
Network Interface Coordinator, Customer Coordination & Service Delivery	• Liaise with the Transport Management Centre • Coordinate internal stakeholders regarding traffic issues • Create and help implement traffic management plans to facilitate works on the site
Transport Management Centre	• Alert all appropriate parties to the occurrence of an incident • Update the information about the incident for notification to the public
Maintenance Service Provider	• Alert the Transport Management Centre to the occurrence of an incident • Undertake preliminary assessment of incident site safety • Execute works leading to the re-opening of the road
Geotechnical Professional	• Provide specialist technical advice • Determine if site is safe to enter or work on • Determine if road is safe to open

Note: The responsible person identified in this document (detailed in either the roles and responsibilities section or in the Flowchart section) may choose to delegate tasks (but not approvals) to other TfNSW personnel as required.

2.3 Approvals and delegations

Approvals for specific activities during all phases of the project life cycle are defined in the Delegations Manual.

3 Further information

3.1 Acronyms, abbreviations and definitions

Term	Meaning
Geotech	Geotechnical Professional (Geotechnical Engineer or Geotechnical Scientist)
MSP	Maintenance Service Provider (RMCC or TfNSW District Office)
RMCC	Road Maintenance Council Contractor
SES	State Emergency Services
TMC	Transport Management Centre
TMP	Traffic Management Plan

3.2 References and related documents

3.2.1 Attachments for this procedure

Document number	Document title

3.2.2 Samples for this procedure

Document number	Document title

3.2.3 Related procedures

Document number	Document title
ILC-AM-TP1-601	Technical procedure for slope asset management
ILC-AM-TP1-602-G01	Guideline for slope stability incident response
IC-QA-M3	Routine Services Specification
RTOC-SOP-011	Regional stakeholder incident notification procedure
TMC	Incident Management flowchart
RMS.18.898	Traffic control at work sites

Document number	Document title
ST-001	Safety Incident Reporting, Recording and Investigation Standard https://home.transport.nsw.gov.au/documents/sppreview/3ed146c2-5d48-4177-ac96-be2185f85c99
FT-179	Minor Incident Investigation form https://home.transport.nsw.gov.au/documents/sppreview/5a6ab205-df25-4dc6-a02c-f7974a8b4a94
FT-490	Major Incident Report https://home.transport.nsw.gov.au/documents/sppreview/6b5d8a4d-3be2-4d07-9d7e-fa91993344ad

3.2.4 Other references

Document number	Document title
PN 292	Slope asset management
C-G-001	Guide to slope risk analysis
C-G-002	Technical guide to the selection of treatments for slopes and retaining structures
C-G-003	Technical guide to geotechnical instrumentation and monitoring

Appendix A Slope Incident Record

Slope Incident Record								
Slope Identification No.								
Inspection Date				**Completed By**				
Slope Data	Slope Class	Slope above	Material	Soil	Structure Type	Tied back (anchored)wall	Slope Treatments	Shotcrete
	ARL	5	SRMP	Yes				
Location								
Purpose of Observation	Event							
Observation Details	Has an Event Occurred?	**No: Go to Actions**						
Event	Event Type	Crack	Debris Position	Elsewhere in the corridor	Volume Description	<20m3	Network Impact	Unaffected
	Weather	Dry	Block Size	Individual Blocks of about 0.1m min dimension				
Actions	**Geotechnical Assessment Required**				Is a Risk Re-Rating Required?			Yes
Comments:								

Sketches and Photographs	
File Name	**Caption**