

The following has been released in relation to a request for information relating to the stability of rocks above the Tasman Highway at Paradise Gorge.

Notes and Actions – State Roads Emergency Response Group



Event: Rock – Paradise – Tasman Hwy

Date: 27 May 2021

Putalina Room, Salamanca Square

Building and MS Teams

Notes prepared by: s 36

CM: D21/122215

Attendees: see Appendix A

Time: 10:00am

Scope: These notes record the agreed actions of the State Roads Emergency Response Group and a summary of discussion points.

Members/attendees keep their own detailed/supporting notes as necessary.

FOR Circulation to all ERG members and Branch managers for circulation to staff

Item No.	Topic
1	<p>1.1 Aim: To understand and manage the risk of rock movement that has been determined may cause an issue on a section of the Tasman Hwy in the vicinity of Paradise Gorge and to minimise the impacts on people and property.</p> <p>1.2 Actions from previous meeting:</p> <p>Maintenance – Action - Advise Stornoway to set up traffic management Friday for a full road closure. Closure to occur at 11:55am. Set up as soon as practical. Commenced and ongoing. s 36 – Action – Alternate routes and timings. No longer required.</p> <p>s 36 – Review TMP when made available, assess Wielangta Road for sign requirements if deemed a viable alternate route. Ongoing</p> <p>s 36 – Action – Identify viable alternate routing and how many VMBs will be required. Ongoing.</p> <p>s 36 – Action – contact aboriginal heritage to see if any sensitive sites are in area. Completed</p> <p>s 36 – Action – Share SCEP. Completed</p> <p>s 36 – Action – Corporate Comms to be contacted. Completed</p> <p>s 36 – Action – Commence communications of event and Road Closure. Completed.</p> <p>All meetings</p> <ul style="list-style-type: none"> • GM SR to update DecSec/Sec/Ministers office as necessary - ongoing • There has been some limited external briefings (State Growth EM Coord/EMSC) - Ongoing • All attendees to brief/updated direct reports/contractors as needed • AEMO to update notes from previous meeting as requested.
2	<p>Situation update – summary of current situation report and forecast from EM partners/BOM:</p> <p>Weather conditions at this location – As of this morning – weather forecast for weekend have indicated Frost Saturday through Monday. This will trigger Road</p>

Notes and Actions – State Roads Emergency Response Group

	<p>Closure. Decision has been made to close road Friday night at 12am.</p> <p>Weather forecasts will continue.</p> <p>P&S</p> <p>Catch up with contractors for site management. Current construction program will commence on Saturday after 10 am, this will ensure that any frost activity has no affected the danger area.</p> <p>Great deal of heavy vehicle activity in area on Saturday.</p> <p>Action – s 36 - Daily updates on social media platforms.</p> <p>Action – Pitt & Sherry - Time-lapse camera will be installed before weekend.</p> <p>Action – Pitt & Sherry Comms Team - Liaise with State Roads Stakeholder Engagement on photographing filming activity.</p> <p>P&S have commenced comms engagement in community.</p> <p>Action – s 36 - External audit to be conducted for WHS on works.</p> <p>Action – Pitt & Sherry - Day by day situation report to be emailed to Roads Tas email box. RoadsTas@stategrowth.tas.gov.au</p> <p>Forecast of projected costs of activity by next week.</p> <p>P&S to discuss with heritage Tas – removal of foreign materials around heritage wall, protection of heritage wall will be barriers and gravel.</p> <p>Concerns about environmental issues due to natural vegetation being removed from buttress. Catchments being installed to catch any loose rocks etc that would normally be contained by existing vegetation.</p> <p>Develop and manage data. Deal with immediate risk to make road safe. Longer term will need to be assessed and reviewed. Road is to be closed for a minimal period of time.</p> <p>Action – s 36 – Arrange a separate meeting for s 36 with s 36 from Pitt & Sherry on Geo tech review.</p> <p>Maintenance Service –</p> <p>Stornoway to increase the inspection of Lake Leake. s 36 to conduct an inspection of northern area detours.</p> <p>Wielangta will have an increased inspection of road by Stornoway to determine if localised issues need rectification.</p> <p>Expected that resheeting and guide posts will be installed by end of today.</p> <p>What other impacts exist for other existing or upcoming projects.</p> <p>Road Assets – Heavy vehicle accessibility on Wielangta Road, determine what vehicles can be permitted on road. Transport Inspectors and police to monitor traffic on a daily basis.</p> <p>Action – s 36 – Arrange a separate meeting with HV Access team and s 36 to discuss access on Wielangta Road.</p> <p>Bridges and Network Access – N/A</p>
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Notes and Actions – State Roads Emergency Response Group

	<p>Projects – N/A</p> <p>Stakeholder Engagement – FAQ to be assessed and published on website. All stakeholders to be provided this list. Other actions P&S on ground with stakeholder people talking to businesses and other community areas. Minister Howlett has deployed to area – all businesses in area gathered from Google.</p> <p>Business Tasmania to send information to Roads Tas. Updating Q&A's daily as required, lots of queries on Social Media being monitored daily. Calls coming in to Admin area, greater engagement expected in the first week. Coverage will be provided all weekend. Posters in shops, mail out has gone out very far and wide but not expected in boxes until next week.</p> <p>Safety - Action s 36 - Complete audits on any TMP's.</p>
3	<p>State Roads Situation Updates/Priorities</p> <p>3.1 Current status of infrastructure and services including any known impacts/damage/closures/concerns as per Appendix B</p>
	<p>3.2 Priorities</p> <ul style="list-style-type: none"> • Maintenance Services • Road Assets/Alternate Routes • Bridges – Investigation of heavy vehicle alternate routes. • Network Management • Projects – N/A • Environment

Notes and Actions – State Roads Emergency Response Group

	<p>3.3 Emerging issues:</p> <p>Weather</p> <p>Availability and procurement of resources</p> <p>Alternate local route</p>
	<p>3.4 Messaging/stakeholder management:</p> <p>Anticipate big comms task for first week, should ease up after this.</p> <p>Local East Coast Newspapers have been missed.</p> <p>Mercury and Examiner to print on Saturday. Ongoing no details as of yet.</p>
	<p>3.5 Safety:</p> <p>N/A</p>
4	<p>Agency Priorities</p> <p>4.1 Requests/issues referred to other areas:</p> <p>Transport</p> <p>Freight issues – Seafood sector has requested advice, not keen to use Wielangta, having conversations with stakeholders on East Coast.</p> <p>Wholesalers and time sensitive freight not seen to be an issue at this point in time.</p> <p>Gathering information on numbers of vehicles and size.</p> <p>Freight companies need to identify the most appropriate route. Message is that the road is not suitable for heavy vehicles.</p> <p>Passenger Transport – assessing and determining alternate routing, maintaining and updating viable alternatives. Commuter services on Fridays and Sundays, identifying if alternate accommodation arrangements for existing customers can be found.</p> <p>Existing service from Buckland to Hobart to remain, another service from Orford via Lake Leake Road, heavy vehicle fatigue issues need to be identified. 60 children Buckland attend school in Triabunna – no viable transport alternative identified for them.</p> <p>Passenger Transport requires access to the State Roads comms platform.</p> <p>Transport Inspectors required on Wielangta, numbers to be determined, Buckland and Wielangta. Monitoring and volume counting at start, from 8 to 4.</p> <p>Expectation is that locals will use Wielangta road, Department will attempt to manage this as best as possible.</p> <p>Business, Events and Tourism</p> <p>Tourism</p> <p>Messaging has gone out to a number of stakeholders, requests for additional VMB's to deployed, for visiting tourists, if readily available, list of suggested locations sent to s 36 – requested a message of event is on screen at airport. Passenger Transport requested can message about buses be put up on screen at airport.</p>

Notes and Actions – State Roads Emergency Response Group

	<p>Messaging was sent out to tourism operators and hire drive companies to extend the message outwards to their customers. Impact is significant on Tourism operators on east coast due to other events coming up with expectations that tourists coming to Hobart will not travel to the East Coast area due to the extended times taken to make the trip</p> <p>Business – messaging has gone out to businesses with messaging.</p> <p>Tourism Tasmania – have requested that they be provided some messaging.</p> <p>Compensation considerations. Clarification around that and wording.</p>
	<p>4.2 Representation at mtgs eg EM Coordination Group:</p> <p>N/A</p>
	<p>4.3 Broader stakeholder communication issues</p> <p>Broader stakeholder engagement has proceeded.</p>
5	<p>External Matters - REMCs/SEMC</p> <p>MRT</p> <p>Glamorgan Spring Bay Council</p> <p>Sorell Council</p> <p>Taswater</p> <p>MAST – when we close road advise MAST through email.</p> <p>Tas Fire Service.</p> <p>Land Owner.</p> <p>Ambulance Tasmania.</p> <p>Health.</p> <p>STT</p> <p>Info to SREMC and NREMC.</p> <p>Comms are extensive and has gone out to all key stakeholders.</p>
6	<p>Task List:</p> <p>Pitt and Sherry – Assign a PM – s 36 - Completed</p> <p>Pitt and Sherry – Develop more detailed plan for an update today – Completed.</p> <p>Pitt and Sherry – Action – Source monitoring equipment. Completed</p> <p>Pitt and Sherry – Action – Develop scope of works. Completed.</p> <p>Pitt and Sherry – Action – Develop plan for event to occur. Ongoing</p> <p>Pitt & Sherry – Action – Allocate stakeholder engagement resource for community consultation. Completed.</p> <p>s 36 – Advise Stornoway of information relating to weather triggers. Completed</p>

Notes and Actions – State Roads Emergency Response Group

	<p>s 36 [REDACTED] – Action – Procure portable weather station. No longer required.</p> <p>s 36 [REDACTED] – Action – TMP – Stornoway. Completed</p> <p>s 36 [REDACTED] – Action – Alternate routes timings and timings from Stornoway Ongoing – Information has been provided by network access. No longer required.</p> <p>s 36 [REDACTED] – Action – Contract requirements, options. Completed</p> <p>s 36 [REDACTED] – Review TMP when made available, assess Wielangta Road for sign requirements if deemed a viable alternate route.</p> <p>s 36 [REDACTED] – Action – Identify viable alternate routing and how many VMBs will be required. Ongoing.</p> <p>s 36 [REDACTED] – Action – Assess Wielangta Road to determine what is required to make trafficable. Completed.</p> <p>s 36 [REDACTED] – Action – contact aboriginal heritage to see if any sensitive sites are in area. Ongoing.</p> <p>s 36 [REDACTED] – Action– Continue progressing SCEP. Completed</p> <p>s 36 [REDACTED] – Action – Contact BoM for short to long term forecast and ongoing weather reports. Completed</p> <p>s 36 [REDACTED] – Action – Contact MRT to get advice. Completed.</p> <p>s 36 [REDACTED] – Action Contact MAST for advice and how to prevent access to waterway in event road is closed. Completed.</p> <p>s 36 [REDACTED] – Action – Contact Passenger Transport. Completed.</p> <p>s 36 [REDACTED] – Action – Inform SREMC of event. Completed.</p> <p>s 36 [REDACTED] – Action – Inform Glamorgan Spring Bay Council and Sorell Councils of situation and access requirements for Wielangta Road. Completed.</p> <p>s 36 [REDACTED] – Action – Liaise with Taswater. Completed</p> <p>s 36 [REDACTED] – Action – Inform Tas Fire, Ambulance and Health of decision to close road. Completed.</p> <p>s 36 [REDACTED] – Action – Share SCEP with relevant stakeholders. Completed.</p> <p>s 36 [REDACTED] – Action – Corporate Comms to be contacted. Completed.</p> <p>s 36 [REDACTED] – Action – Commence communications of event and road closure. Completed.</p> <p>All meetings</p>
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Notes and Actions – State Roads Emergency Response Group

	<ul style="list-style-type: none"> • GM SR to update DecSec/Sec/Ministers office as necessary – ongoing. • Some Limited external briefings have occurred (State Growth EM Coord/EMSC) – ongoing. • All attendees to brief/updated direct reports/contractors as needed – ongoing.
6	<p>Decisions:</p> <p>Tasman Highway to have intermittent closures of up to 8 minutes at a time on Thursday 27 and Friday 28 May to allow preparatory works to commence and will be managed by Stornoway/Spidertech to manage risk of minor rockfall while climbers are accessing the site</p> <p>Tasman Highway to be completely closed from Friday night 28 May at 12am.</p> <p>Internal/key stakeholder communications regarding the works and road closure will commence as soon as signed off today.</p> <p>External/public communications will commence after internal/key stakeholder communications have been conducted.</p> <p>Commencement of initial work to install digital monitoring equipment on the rockface will not commence until Saturday 29 May.</p> <p>Minister conducted a press conference on Wednesday 26 May to broadcast the event and why a road closure is necessary.</p>
7	Other Business:
8	8.1 Lead personnel for next period: N/A

Notes and Actions – State Roads Emergency Response Group

Appendix A

Attendees:

This list shows Emergency Response Group (ERG) members who attended this meeting.

Attendance may change based on the nature of the event. The role of Chair may be delegated.

s 36		S 36
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Doc 2

From: s 36
Sent: Wednesday, 26 May 2021 3:01 PM
To: s 36
Subject: RE: Frost this weekend [SEC=OFFICIAL]

Follow Up Flag: Follow up
Flag Status: Completed

That would be appreciated

Cheers

s 36

From: s 36
Sent: Wednesday, 26 May 2021 3:00 PM
To: s 36
Cc: s 36; State Roads Emergency Management
<SRemergency.management@stategrowth.tas.gov.au>
Subject: RE: Frost this weekend [SEC=OFFICIAL]

Hi s 36,

Sounds like a plan, happy to help!

I'll send through an assessment of frosts occurring in the next week/week+ when we have a new run of the longer term weather models. For the moment though it would be a safe assumption to expect some frost over the weekend and even Monday at this stage.

Thanks for the update,

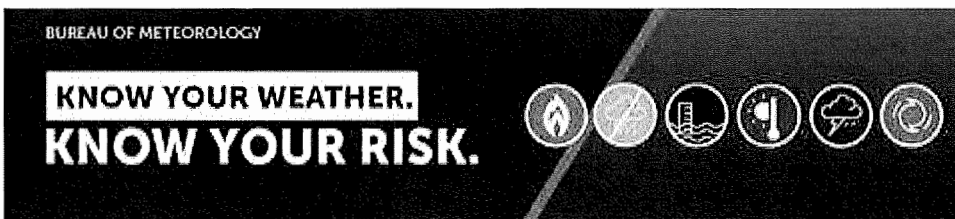
s 36



Australian Government
Bureau of Meteorology

Decision Support Services | Hazard Preparedness & Response – South (Hobart)

www.bom.gov.au



From: s 36
Sent: Wednesday, 26 May 2021 2:49 PM
To: s 36
Cc: s 36; State Roads Emergency Management
<SRemergency.management@stategrowth.tas.gov.au>
Subject: RE: Frost this weekend [SEC=OFFICIAL]

Thanks for all your help s 36

Given the risks, we now have consultants and contractors ready to start works, so will close the road this weekend and commence asap.

It could still be useful to get this information over the next week or so at least, so that we can continue to monitor

Cheers

s 36

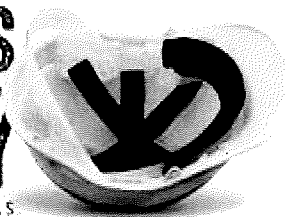
Salamanca Building, Parliament Square
4 Salamanca Place, Hobart, TAS 7000 | GPO Box 536, Hobart TAS 7001

s 36

www.stategrowth.tas.gov.au

**YOUR SPEED IS
OUR SAFETY**

SLOW DOWN FOR ROAD WORKERS



My current work pattern is as follows:

s 36

From: s 36

Sent: Tuesday, 25 May 2021 2:14 PM

To: s 36

Subject: Frost this weekend [SEC=OFFICIAL]

Hi s 36

Frost is still likely near Orford on Saturday, but is becoming increasingly likely on Sunday and Monday now too. The forecast issue at 4pm should include this risk, and be visible on MetEye: <http://www.bom.gov.au/australia/meteye/>. You can display the forecast area of Frost (screenshot attached) – but you likely know that already 😊

I've asked the other Mets to note frost as a high priority on the forecast in the area out to the full 7 days of the forecast.

Please note that it should be considered a possibility of frost when there is some frost nearby in MetEye (as MetEye aims to show the most likely weather, it doesn't always cover all possibilities/potential scenarios).

Kind regards,

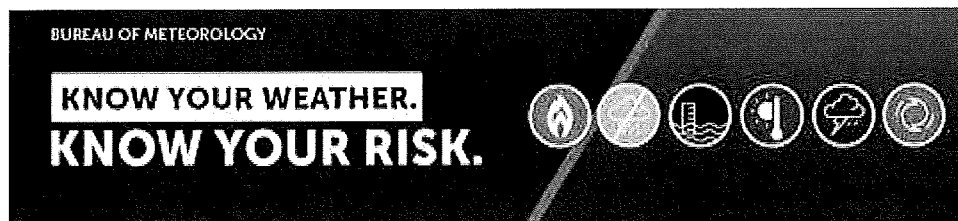
s 36



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Released under RPA

Notes and Actions – State Roads Emergency Response Group

Event: Rock – Paradise – Tasman Hwy

Date: 26 May 2021

Putalina Room, Salamanca Square

Building and MS Teams

Notes prepared by: s 36

CM: D21/I20791

Attendees: see Appendix A

Time: 8:45am

Scope: These notes record the agreed actions of the State Roads Emergency Response Group and a summary of discussion points.

Members/attendees keep their own detailed/supporting notes as necessary.

FOR Circulation to all ERG members and Branch managers for circulation to staff

Item No.	Topic
I	<p>1.1 Aim: To understand and manage the risk of rock movement that has been determined may cause an issue on a section of the Tasman Hwy in the vicinity of Paradise Gorge and to minimise the impacts on people and property.</p>
	<p>1.2 Actions from previous meeting:</p> <p>Pitt and Sherry – Develop a plan for an update today. Completed.</p> <p>Discussion about consideration of monitoring as opposed to closure – Pitt and Sherry – Action - To confirm and provide plan around this. Completed as decision was made to close road.</p> <p>s 36 – Action – Procure portable weather station. Ongoing</p> <p>s 36 – Action – TMP – Stornoway. Share with relevant stakeholders. Ongoing.</p> <p>s 36 – Action – Alternate routes and timings. Ongoing.</p> <p>s 36 – Review TMP when made available, assess Wielangta Road for sign requirements if deemed a viable alternate route. Ongoing</p> <p>s 36 – Action – Identify viable alternate routing and how many VMBs will be required. Ongoing.</p> <p>s 36 – Action – contact aboriginal heritage to see if any sensitive sites are in area. Ongoing.</p> <p>s 36 – Action – Contact Passenger Transport. Completed.</p> <p>s 36 – Action – Inform SREMC of event. Completed.</p> <p>s 36 – Action – Inform Glamorgan Spring Bay Council and Sorell Councils of situation and access requirements for Wielangta Road. Completed.</p> <p>s 36 – Action – Liaise with Taswater. Completed</p> <p>s 36 – Continue progressing SCEP. Ongoing.</p>

Notes and Actions – State Roads Emergency Response Group

	<p>All meetings</p> <ul style="list-style-type: none"> • GM SR to update DecSec/Sec/Ministers office as necessary • There has been some limited external briefings (State Growth EM Coord/EMSC) • All attendees to brief/updated direct reports/contractors as needed • AEMO to update notes from previous meeting as requested.
2	<p>Situation update – summary of current situation report and forecast from EM partners/BOM:</p> <p>Weather conditions at this location – As of this morning – weather forecast for weekend have indicated Frost Saturday through Monday. This will trigger Road Closure. Decision has been made to close road Friday night at 12am.</p> <p>Maintenance – Visual inspections have been ongoing and no events have triggered closure. No portable weather stations available, still attempting to procure one. This will no longer be required.</p> <p>Pitt and Sherry will put digital monitoring and prisms in place with information uploaded on website constantly – will need to modify access on buttress – on main rock column issue and other areas of concern. Veris conducting laser scans and drone scans today to capture full slope. Time lapse cameras and other equipment to be set up on site on other side of river.</p> <p>First activity will be to make accessibility safe and to install monitoring eqpt.</p> <p>Site scoping works being conducted in the next two days.</p> <p>Vegetation clearance can be conducted whilst Stornoway underneath.</p> <p>Impacts of local community due to short notice. Communication to community will be difficult in the event we close road due to a risk and then reopen once risk has passed.</p> <p>In event of frost occurring during night risk increases of rock fall, during evening traffic decreases which slightly minimises the risk of the rock falling and impacting traffic.</p> <p>Schedule of works – nil road closures today. Intermittent road closures on Thursday/Friday. Onsite activity to commence tomorrow – intermittent closures will be reduced to a minimum. Personnel on site today with boat and drone.</p> <p>Comms to be released today.</p> <p>Stornoway will advise P&S on resources and materials required.</p> <p>Sufficient supply of airbags expected.</p> <p>Full digital scanning equipment will be expected by mid-next week.</p> <p>Detailed map required showing detours. s 36 – Action – Corporate Comms to be contacted.</p> <p>Spider excavators would not be an efficient method to remove rocks, only efficient method is to use airbags to remove rocks.</p>

Notes and Actions – State Roads Emergency Response Group

	<p>Long term plan drop all rocks, catch fence installed. Come back in summer to pin rocks to face. Remove high risk elements and then put in more permanent long risk mitigation.</p> <p>Maintenance – Action - Advise Stornoway to set up traffic management Friday for a full road closure. Closure to occur at 12am. Set up as soon as practical.</p> <p>Road Assets –</p> <p>Bridges and Network Access – N/A</p> <p>Projects – N/A</p> <p>Stakeholder Engagement – Continuing with progression of SCEP.</p>
3	<p>State Roads Situation Updates/Priorities</p> <p>3.1 Current status of infrastructure and services including any known impacts/damage/closures/concerns as per Appendix B</p>
	<p>3.2 Priorities</p> <ul style="list-style-type: none"> • Maintenance Services <p>s 36 – Action – advise Stornoway traffic management setup for road closure midnight Friday 28 May.</p> <ul style="list-style-type: none"> • Road Assets/Alternate Routes • Bridges – Investigation of heavy vehicle alternate routes. • Network Management • Projects – N/A • Environment <p>s 36 – Action – contact aboriginal heritage to see if any sensitive sites are in area.</p>

Notes and Actions – State Roads Emergency Response Group

	<p>3.3 Emerging issues:</p> <p>Weather</p> <p>Availability and procurement of resources</p> <p>Alternate local route</p>
	<p>3.4 Messaging/stakeholder management:</p> <p>s 36 – Action – Share SCEP.</p> <p>s 36 – Action – Corporate Comms to be contacted.</p> <p>s 36 – Action – Commence communications of event and Road Closure.</p> <p>Minister should communicate. Recommend Press Conference.</p> <p>Website update, social media posts, radio advertising.</p> <p>Pitt and Sherry - two stakeholder community teams to be in place on Thursday.</p> <p>Business Tasmania – s 36</p> <p>s 36 will communicate with heavy vehicle industry.</p> <p>s 36 – tourism.</p> <p>Transport Inspectors.</p> <p>Tas Alert monitoring.</p> <p>PIU can be used.</p> <p>Anticipate big comms task for first week, should ease up after this.</p>
	<p>3.5 Safety:</p> <p>N/A</p>
4	<p>Agency Priorities</p> <p>4.1 Requests/issues referred to other areas:</p> <p>MRT are aware of issue.</p> <p>Minister's Office aware – s 36 have been informed.</p>
	<p>4.2 Representation at mtgs eg EM Coordination Group:</p> <p>N/A</p>
	<p>4.3 Broader stakeholder communication issues</p> <p>Broader stakeholder engagement has proceeded.</p>
5	<p>External Matters - REMCs/SEMC</p> <p>MRT</p> <p>Glamorgan Spring Bay Council</p> <p>Sorell Council</p>

Notes and Actions – State Roads Emergency Response Group

	<p>Taswater</p> <p>MAST – when we close road advise MAST through email.</p> <p>Tas Fire Service.</p> <p>Land Owner.</p> <p>Ambulance Tasmania.</p> <p>Health.</p>
6	<p>Task List:</p> <p>Pitt and Sherry – Assign a PM – s 36 - Completed</p> <p>Pitt and Sherry – Develop more detailed plan for an update today – Completed.</p> <p>Pitt and Sherry – Action – Source monitoring equipment. Completed</p> <p>Pitt and Sherry – Action – Develop scope of works. Completed.</p> <p>Pitt and Sherry – Action – Develop plan for event to occur. Ongoing</p> <p>Pitt & Sherry – Action – Allocate stakeholder engagement resource for community consultation. Completed.</p> <p>s 36 – Advise Stornoway of information relating to weather triggers. Completed</p> <p>s 36 – Action – Procure portable weather station. Ongoing.</p> <p>s 36 – Action – TMP – Stornoway. Completed</p> <p>s 36 – Action – Alternate routes timings and timings from Stornoway Ongoing – Information has been provided by network access.</p> <p>s 36 – Action – Contract requirements, options. Completed</p> <p>s 36 – Review TMP when made available, assess Wielangta Road for sign requirements if deemed a viable alternate route.</p> <p>s 36 – Action – Assess Wielangta Road to determine what is required to make trafficable. Completed.</p> <p>s 36 – Action – contact aboriginal heritage to see if any sensitive sites are in area. Ongoing.</p> <p>s 36 – Action– Continue progressing SCEP. Ongoing.</p> <p>s 36 – Action – Contact BoM for short to long term forecast and ongoing weather reports. Completed</p> <p>s 36 – Action – Contact MRT to get advice. Completed.</p> <p>s 36 – Action Contact MAST for advice and how to prevent access to waterway in event road is closed. Completed.</p> <p>s 36 – Action – Contact Passenger Transport. Completed.</p> <p>s 36 – Action – Inform SREMC of event. Completed.</p>

Notes and Actions – State Roads Emergency Response Group

	<p>s 36 [REDACTED] – Action – Inform Glamorgan Spring Bay Council and Sorell Councils of situation and access requirements for Wielangta Road. Completed.</p> <p>s 36 [REDACTED] – Action – Liaise with Taswater. Completed</p> <p>s 36 [REDACTED] – Action – Inform Tas Fire, Ambulance and Health of decision to close road.</p> <p>s 36 [REDACTED] – Action – Share SCEP with relevant stakeholders.</p> <p>s 36 [REDACTED] – Action – Corporate Comms to be contacted.</p> <p>s 36 [REDACTED] – Action – Commence communications of event and road closure.</p> <p>All meetings</p> <ul style="list-style-type: none"> • GM SR to update DecSec/Sec/Ministers office as necessary – ongoing. • Some Limited external briefings have occurred (State Growth EM Coord/EMSC) – ongoing. • All attendees to brief/updated direct reports/contractors as needed – ongoing.
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7	Other Business:
8	8.1 Lead personnel for next period: N/A

Notes and Actions – State Roads Emergency Response Group

Appendix A

Attendees:

This list shows Emergency Response Group (ERG) members who attended this meeting. Attendance may change based on the nature of the event. The role of Chair may be delegated.

<div>S 36</div>		

Rele

Tasman Highway – Paradise Gorge – Boulder Removal Works

Project Execution Plan

Version: 00 , Date: 25 May 2021

Copy: Uncontrolled

RM No: <RM Reference>

Document Acceptance and Release Notice

This document is Version No. 00 Date 25 May 2021: of the Tasman Highway – Paradise Gorge – Boulder Removal Works Project Execution Plan.

The Project Execution Plan is a managed document. For identification of amendments each page contains a release number and a page number. Changes will only be issued as complete replacement. Recipients should remove superseded versions from circulation. This document is authorised for release once all signatures have been obtained.

PREPARED: _____ Date: <Date>
(for acceptance)

s 36

ENDORSED: _____ Date: <Date>
(for release) <Project Management Team Leader Name>
Project Management Team Leader

ENDORSED: _____ Date: <Date>
(for release) <Project Client Name>
Project Client

APPROVED: _____ Date: <Date>
(for release) <Manager Project Services Name>
Manager Project Services

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Released under RTI

I Integration

I.1 Project Details

Paradise Gorge is located west of the township of Orford on the east coast of Tasmania. The Tasman Highway runs parallel to the Prosser River at the bottom of the gorge. The 2019 Traffic Survey at the nearest station in Buckland reports an AADT of 2184 with 16.9% heavy vehicles.

A large dolerite buttress is present above the Tasman Highway at Paradise Gorge at approximately 570088E, 5287569N. In 2002 works were undertaken to remove some boulders from the buttress and stabilise others using cable bolts and steel plates.

In January 2021 a site inspection of the boulder support system was undertaken by pitt&sherry, and the report provided to the Department in February. The inspection found that the buttress condition was worse than expected. Laser scans and drone surveys were subsequently undertaken in May 2021 and highlighted that there is significant crushing and degradation along with defects further down the buttress below the 2002 stabilised boulders. It was observed that some of the crushed material has fallen away from the base of the boulders forming the buttress, resulting in an unstable situation.

pitt&sherry undertook an empirical assessment of the buttress and determined that failure is likely to occur within the next ten years, but could occur at any time. pitt&sherry went on to state that failure would most likely be triggered either by heavy rain or frost. Given the level of damage a peer review conducted by a pitt&sherry Senior Principal Geotechnical Engineer concluded that the likelihood of failure is now in the "Probable" to "Likely" range and may be approaching "Almost Certain". A high level assessment to the RMS Slope Risk Assessment methodology resulted in an ARLI level. An ARLI rating is the highest risk level to the RMS Slope Risk Assessment methodology.

Given the high-risk level monitoring of the slope is recommended, until such time as Works can commence to remove the high-risk boulders.

The Bureau of Meteorology (BoM) provided a briefing on 24 May 2021 that indicated that the current forecast is for wet weather followed by frost over the period of 25 to 31 May 2021.

I.2 Governance

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I.3 Project Objectives

The aim of the Project is to reduce the risk levels associated with the rock buttress within Paradise George and provide a permanent solution that provides an appropriate risk level with appropriate maintenance.

1.4 Benefits Realisation Plan (Outputs/Outcomes)

The following outcomes are desired from the Works:

1. Reduced risk of rock boulders separating from the buttress based on the RMS Slope Risk Assessment methodology and/or other risk assessment frameworks
2. Long term treatment, that provides an acceptable risk level with acceptable ongoing maintenance costs

2 Scope

2.1 In Scope

The Scope of Works is proposed to be executed in three (3) stages, based on the desire to reduce the 'Almost Certain' / ARLI risk level as soon as practicable.

2.1.1 Stage 0 – Monitoring

The implementation of a monitoring program to aid management of the rock buttress, until such time as Stage 1 works can occur is recommended. The monitoring is aimed at detecting signs of movement and/or undesirable environmental conditions. Monitoring to be considered includes:

- Weather station to provide accurate onsite information as to critical weather events, such as high rainfall or frost
- Road level surveys of any small rocks that may have naturally broken away from the rock face
- Displacement monitoring of the rock face. This could include the provision of:
 - o Tilt meters to measure displacement and rotation
 - o Automatic and/or manual theodolite survey of fixed datum point, to measure displacement

2.1.2 Stage 1 – Risk Reduction Works

The Stage 1 Risk Reduction Works will involve the progressive removal of the boulders within the buttress, starting with the higher-level material and working down to the lower boulders. The boulders will be dislodged and allowed to fall down the slope, onto the existing roadway below. Due to the energy involved it is expected some boulders will bounce and end up within the Prosser River.

Energy absorbing gravels and other protection measures will be placed on the road to minimise any potential damage to infrastructure due to falling boulders.

Once all boulders are on the road, and the risk of boulders falling is reduced to within acceptable levels, the Contractor will fracture any oversized boulders, and arrange for transport and disposal of materials offsite.

A full road closure would be required for the duration of the Stage 1 works, due to the risks and unknowns associated with the dislodging of the boulders.

Monitoring will be implemented and a Trigger Response Plan (TRP) developed as part of the site close out works for Stage 1.

2.1.3 Stage 2 – Gorge Risk Management Plan

The deterioration of the dolerite buttress is associated with a combination of unfavourable rock defect angles which slope towards the road, and deterioration of the joint material. Overtime, as the horizontal joint material breakdowns, the dolerite boulder above will begin to rotate. Once rotation begins, this will accelerate the

breakdown of the material within the joint due to uneven loading to the point where the boulder will become unstable and fall down the slope.

Following the completion of the Stage 1 works a further assessment of the slopes will be undertaken to allow establishment of a Risk Management Plan. It is expected that as part of the risk management plan additional long-term ground support treatment to the buttress will be implemented. This treatment could likely include a combination of; catch fences, netting, rock bolting and other works to slow the deterioration of the buttress, and reduce the likelihood of rocks reaching the road. This work should be able to be executed with only a lane closure.

2.2 Out of Scope

Stage 2 Works. The Risk Assessment and long-term buttress stabilisation measures cannot be assessed until the high risk and loose boulders are removed, and an acceptable buttress face established.

The Stage 1 Works are expected to provide significant insight into the rock mechanics of the Buttress.

3 Works Methodology

3.1 Proposed Methodology – Discrete Boulder Removal

The methodology proposed for delivery of the Stage 1 Works is based on removal of a single boulder at a time, before reassessing and moving onto the next boulder. This methodology allows for the systematic exposure of the dolerite rock mass and allows the onsite geotechnical team to better understand the rock mechanics and integrity of the overall buttress.

3.1.1 Preparatory Investigations

Prior to the works occurring the following preparation works should occur:

- Drone footage and laser scan of a 200m long section of the slope encapsulating the full extents of the buttress and associated slopes. The scan would extend from the edge of the river, up the historic wall, capture the road, and then the lower slope up to the buttress, the buttress and nominally 100m behind the buttress. Current data collection has been limited to the area immediately adjacent to the 2002 works.
- Upgrading of Wielangta Road, including pavement re-sheeting and signage improvements, as required

3.1.1.1 Rock Risk Classification

It is recognised that the buttress consists of dozens of individual rock each which have unique risk attributes to the road users below, based on;

- Probability that material will detach
- Probability that material will travel to the carriageway
- Probability that there will be an interaction between an element at risk (vehicle) and the fallen material
- Probability that the interaction will lead to a fatality.

To provide guidance to the site teams during the rock removal process a desktop assessment of each rock needs to be completed, to identify which rocks are:

- Likely unstable – treatment (red)
- Potentially unstable – investigate further/monitor (orange)

- Short term stable – monitor (green or yellow)

The use of the Roads and Maritime Safety (NSW) Slope Risk Analysis Version 4 theory will be used to aid this process in conjunction with empirical judgement of rock condition, site assessments and visual observations of initial rock removal works.

The outcomes of this review will be documented in a Rock Removal Plan.

3.1.1.2 *Peer Review*

Golder Associates will be engaged to peer review the assessment works undertaken by pitt&sherry

3.1.2 Site Establishment

3.1.2.1 *Traffic Management*

In association with the closure of the Tasman Highway appropriate signage shall be installed advising of alternate routes. The two alternate routes have been identified to be via.:

- Wielangta Road and Arthur Highway
- Lake Leake and Midland Highway

3.1.2.2 *Site Security*

Given the high-risk worksite, appropriate site security shall be established, which shall as a minimum include:

- Closure of Tasman Highway between Buckland and Orford
- Closure of Convict Trail on northern shoreline of Prosser River
- Closure of Prosser River to marine traffic

3.1.2.3 *Site Monitoring*

It is expected that the Stage 0 site monitoring systems will be in place and be able to be used by the Contractor for managing the movement of personnel within the work area.

3.1.2.4 *High Ropes Access*

Establishment of a safe means of access to the top of the buttress and safe anchorage points needs to occur prior to any rock removal works.

3.1.2.5 *Infrastructure protection*

Protection of the road pavement and heritage dry-stone rock wall needs to be undertaken to minimise the need for post boulder removal remediation works. The protection works shall include:

- Placement of concrete barrier or rock filled tyres adjacent to and over the heritage wall to minimise potential for direct boulder impact
- Placement of 'pea gravel' or similar energy absorbing material over the road pavement to minimise potential for the boulders to bounce, and limit pavement damage

3.1.3 Boulder Removal

All the boulder removal works will be undertaken from the top of the buttress with no workers allowed on the road. The works will involve positioning and operation of the jacks to dislodge the boulders and allow them to fall onto the road.

3.1.3.1 *Rock Risk Classification*

The rock risk classifications shall be reviewed and updated based on site assessments and visual observations of initial rock removal works.

The Rock Removal Plan should be updated to reflect the site observations, and work plans.

3.1.4 Clean-up

Once all boulders are brought down to the road, and the risk of boulders falling is reduced to within acceptable levels the removal of the dislodged material can commence. The removal will likely include the need to drill and blast and/or 'chem-crack' large boulders to allow them to be loaded into trucks for transport and disposal.

Once all boulder debris is cleaned-up, the infrastructure protection materials shall also be removed.

3.1.5 Site Remediation

Site remediation shall consist of repairs to any damaged road pavement or retaining wall infrastructure, prior to the road re-opening.

3.2 Alternate Methodologies

3.2.1 Option A – Concurrent Boulder Removal

An alternate methodology that was considered was for removal of multiple boulders concurrently using explosive charges. The use of this method was assessed by SpiderTech, the proposed Contractor and they advised:

3.2.1.1 Benefits

- Likely to provide a marginal time-saving per boulder. The longest activity is establishing access and placement of equipment, not the rock relocation works.

3.2.1.2 Risks

- Using explosives would reduce the ability to control the direction of fall of the boulders, increasing the risk of damage to infrastructure below

3.2.2 Option B – Drill and Blast

A second alternate method considered would be to drill pilot holes 10-15m back from the existing face, charge the holes with explosive and detonate one or two blasts across the entire buttress. This large scale explosive works might bring the following benefits and risks to the project:

3.2.2.1 Benefits

- Removal of the slow, working at heights requirement
- Could reduce the time of a full road closure as the more site establishment activities could be safely carried out without impacting traffic.

3.2.2.2 Risks

- Site establishment would be significant, as construction of an access track for the drill rig to access the top of buttress would need to be constructed
- Using explosives would reduce the ability to accurately control the direction of the fractured rockmass
- The final rock profile may not be stable, given the defect orientation of the dolerite. Additional rock bolting/further blasting might be required prior to road opening

3.2.3 Option C – Long Term Monitoring

Monitoring of the buttress to try and detect early movement of boulders is a common method for managing the risk of rockfalls and landslips. In developing a monitoring plan, a comprehensive data set is desirable to enable the installation of appropriate sensors, that will provide meaningful information, both in triggering and alert, but also actioning any outcomes.

The use of detailed (sub-millimetre) automatic monitoring on the key boulders within the buttress is seen as a valid risk management approach. If one of the following trigger events occurred, then closure of the road is recommended:

- Rainfall
- Frost
- Movement

If after the event, no movement is detected then re-opening of the road can be considered. The trigger levels would be reviewed and refined after each event, as more knowledge of the buttress behaviour and integrity is understood.

3.2.3.1 Benefits

- Between trigger events, the road would return to normal operation. Reducing the speed of vehicles is generally undesirable, as it increases the duration of time a vehicle is within the danger area below the buttress
- Enables time for procurement of specialist materials, which would aid protection of infrastructure

3.2.3.2 Risks

- Stakeholder disruption. Road closures would be possible at any time, and initially could be for longer than desirable durations as knowledge of the buttress behaviour and integrity during events is developed.
- Unexpected boulder/rock fall events could occur with no warning, and impact road users.
- Traffic travelling towards the road closure might not be able to be warned sufficiently early to avoid the need for reverse and U turn manoeuvres to leave the end of the road closure.

4 Schedule

The following schedule for the works is proposed

1. Stage 0 – Monitoring

a. Roadside rock fall observations	Ongoing
b. Installation of tilt meters (automatic digital monitoring)	27/05 to 28/05/2021
c. Establishment of theodolite datum points	27/05 to 28/05
d. Daily theodolite manual measurement	28/05/2021
e. Automatic theodolite	TBC

2. Stage I - Risk Reduction Works

a. Preparatory Investigations		26/05 to 28/05/2021
b. Site Establishment	5-8 days	29/05 to 07/06
c. Boulder Removal	14-21 days	08/06 to 27/06
d. Clean-up	7-10 days	28/06 to 07/07
e. Site Remediation	7days	08/07 to 14/07

Assumptions

- The exact duration of the boulder removal works is unknown, as the number of boulders to be removed from the buttress is not currently able to be assessed.
- Site remediation assumes it is acceptable to re-establish a minimum of one lane of traffic and operate the Tasman Highway under shuttle flow arrangements

5 Cost

Works will be delivered under a Schedule of Rates, as per the Roads Maintenance Contract.

Due to the unknowns associated with the Works, routine meetings with the full site team will occur to review:

- Works completed
- Works planned
- Site safety
- Proposed alterations to work methodology
- Program

The meetings are scheduled to occur every, Monday, Wednesday and Friday.

6 Quality

6.1 Document Management

The following documents form the basis of the works. Due to the unknowns and uncertainties with the project scope, routine updates to the documents are expected to be required. Management and approval of updates will be undertaken as per Section 6.2.

- Project Execution Plan
- Contractor Works Scope of Works and Methodology
- Safety in Design Risk Assessment

6.2 Change Control / Variations to Scope

Changes in scope shall be approved by the Superintendent, who will consult with the Project Manager as required.

The Project Manager, shall maintain a register of scope changes, and forecast project program.

7 Communications

7.1 Meeting Schedule

Due to the priority nature of the Stage 1 works the State Roads Emergency Response Group was convened. Routine briefings are proposed, until site establishment is commenced.

Once works have commenced a Project Team will be established and weekly meetings undertaken or more frequently depending on the level of activity and change occurring.

7.2 Communications protocol

To be confirmed

8 Risk Management

8.1 Key Risks

- Uncontrolled/unplanned fall of rock
- Program. Unknown scope of works associated with number of boulders that will need to be removed
- Weather. Delays in work associated with wet weather
- Stakeholder management
- Emergency management
- Traffic management. The safety of alternate traffic routes, for increased traffic volumes needs to be considered in parallel to the risk of a rockfall event
- Damage to heritage wall along roadside, requiring significant reconstruction
- Damage to road pavement, requiring significant reconstruction
- Construction/maintenance risks (refer Safety in Design assessment)

8.2 Key Issues

- Landowner approvals. A section of the buttress is within Private land
- Environmental management
 - o Vegetation clearing approvals
 - o Disturbance of silt loss of road gravels into river. Recommend use of silt curtain
 - o Waterway restrictions. Are we required to remove rocks, once they fall in the river
- Heritage management
 - o Reconstruction processes/requirements for retaining wall
- Flood management, are we required to remove rocks, once they fall in the river
- Material delivery
 - o Helicopter transport of equipment to and from the top of the buttress will likely be required
 - o With gravel energy absorption layer in place, construction deliveries will need to be managed from either end of project site

8.3 Assumptions and Constraints

- Unknown scope of works associated with number of boulders that will need to be removed
- Access

9 Procurement Strategy

Procurement of Consultants and associated Technical Support will be undertaken under Contract 3100.

Execution of the Works will be undertaken and overseen by the Road Maintenance Contractor – Stornoway.

Specialist high ropes and rock removal subcontractor SpiderTech will be nominated to execute to boulder relocation works, based on having successfully completed the 2002 and other works.

10 Stakeholder Management

10.1 General

Stakeholder engagement is a critical project issue, given the disruption the works will cause to people accessing the lower East Coast from Hobart and surrounds.

A Stakeholder & Community Engagement Plan is being developed by the Department.

10.2 Legislature Liaison, Compliance and Approvals

All works are proposed to be delivered under the emergency provisions within respective Legislation.

Released under RTI

From: s 36
Sent: Tuesday, 25 May 2021 7:22 PM
To: s 36
Subject: FW: Frost this weekend [SEC=OFFICIAL]
Attachments: frost.PNG

Good Evening all,

Short term weather report from BoM for this weekend.

Regards,

s 36

**YOUR SPEED IS
OUR SAFETY**
SLOW DOWN FOR ROAD WORKERS.



From: s 36
Sent: Tuesday, 25 May 2021 2:14 PM
To: s 36
Subject: Frost this weekend [SEC=OFFICIAL]

Hi s 36

Frost is still likely near Orford on Saturday, but is becoming increasingly likely on Sunday and Monday now too. The forecast issue at 4pm should include this risk, and be visible on MetEye: <http://www.bom.gov.au/australia/meteve/>. You can display the forecast area of Frost (screenshot attached) – but you likely know that already 😊

I've asked the other Mets to note frost as a high priority on the forecast in the area out to the full 7 days of the forecast.

Please note that it should be considered a possibility of frost when there is some frost nearby in MetEye (as MetEye aims to show the most likely weather, it doesn't always cover all possibilities/potential scenarios).

Kind regards,

s 36



Australian Government
Bureau of Meteorology



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Australian Government
Bureau of Meteorology

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FAQ | MetEye Disclaimer | Metadata

Start typing, then select from list (town, city, postcode or lat/lon)

Locate Find me

Time zone AEST

☒ All significant weather
☐ Thunderstorms
☐ Snow
☐ Rain
☐ Fog
☒ Frost

Updated 25 May 2021, 10:34 AM AEST

☐ Latest rain radar
☐ Mean Sea Level Pressure (hPa)

☒ Place names
☐ Forecast districts
☐ Search marker
☐ Marine zones
☐ Saved locations
☐ Roads & railways
☒ Rivers & lakes
☐ Catchments
☐ Forecast locations

LATEST WEATHER
 Current Temp, Rain, Wind ...
FORECASTS
 Rainfall Forecasts
 Wind Forecasts
 Waves Forecasts
 Temperature Forecasts
 Storms, Snow, Fog, Frost ...
 Humidity Forecasts
 UV Index Forecasts

Tue Wed Thu Fri Sat Sun
 1:00 4:00 7:00 10:00 13:00 16:00 19:00 22:00
 Saturday, 29 May 2021

LEGEND
Frost
 Heavy Frost
 Frost
 No Frost
 no data

Doc 6

From: s 36
Sent: Tuesday, 25 May 2021 1:45 PM
To: s 36
Cc: s 36
Subject: FW: Paradise Gorge Rock Buttre - Notification of High Risk

Hi s 36

As per discussions, here is the first of the information from Pitt and Sherry

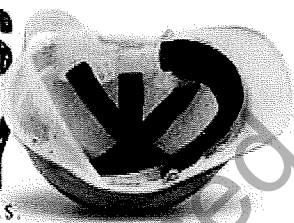
More to follow

Cheers

s 36

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My current work pattern is as follows:

s 36

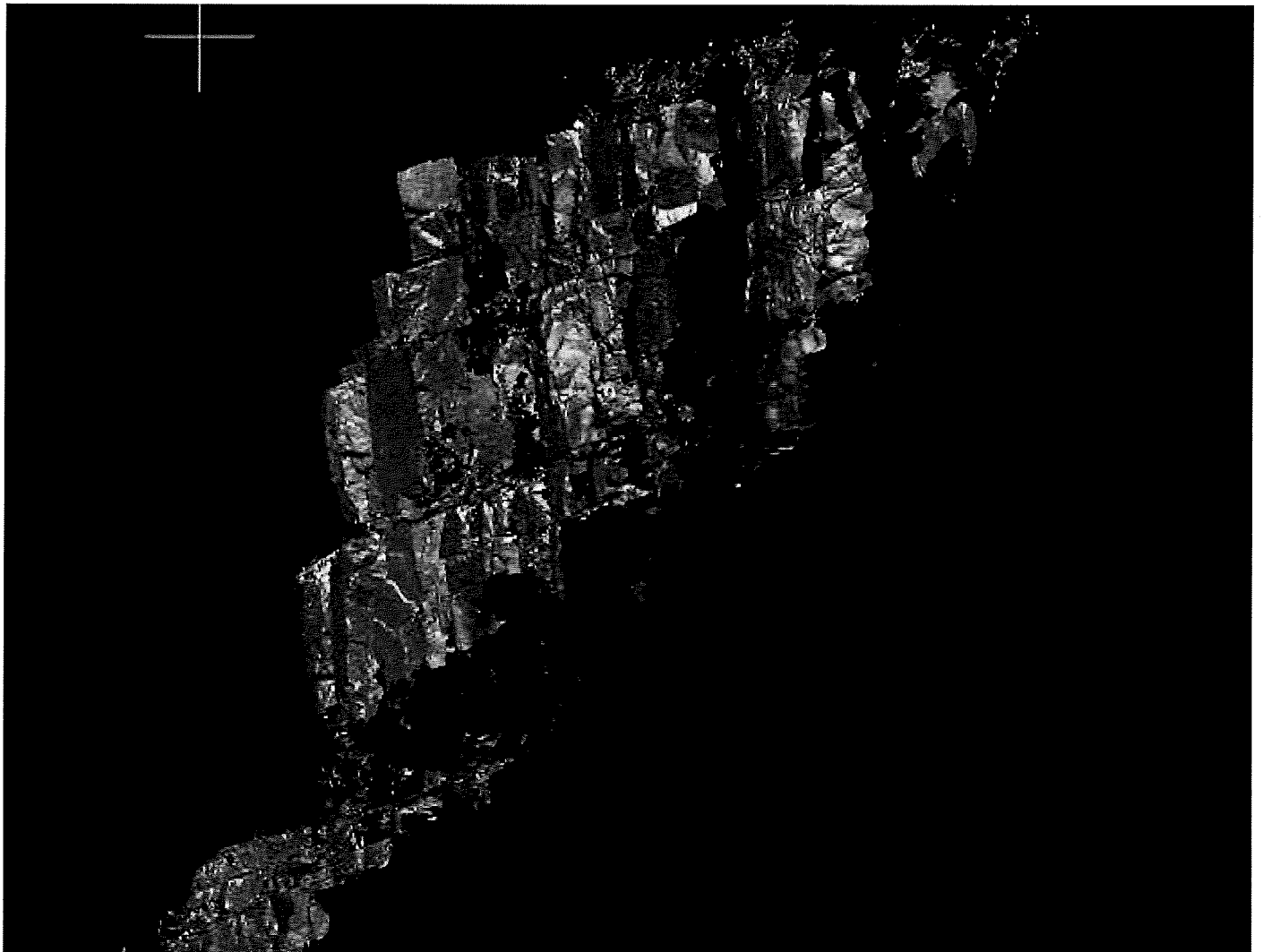
From: s 36
Sent: Wednesday, 19 May 2021 10:35 AM
To: s 36
Cc: s 36
Subject: Paradise Gorge Rock Buttre - Notification of High Risk

s 36

Following receipt of the first pass model from Veris late yesterday a quick high level risk assessment suggests that the rock buttre on Paradise Gorge presents a high risk to road users.

A view along the buttress is shown below:

The crushing joints are sloping towards the road at approximately 15°-20° and the faces of the columns are angled towards the road at about 10-15°. This increases the pressure on the crushing rock in the basal joints and increases the likelihood of further rock displacement and subsequent column toppling.



The crushing on the low angle joints at the base of the columns is apparent in this image.

Given the level of damage here the assessment by our Senior Principal Geotechnical Engineer is that the likelihood of failure here is in the "Probable" to "Likely" range, and may be approaching "Almost Certain". A rough run through the RMS Slope Risk Assessment methodology therefore results in an ARL1; the highest risk level in the methodology.

The failure here is likely to happen within the next ten years; that is not to say in ten years' time, it could be any time within that period. It will most likely be triggered either by heavy rain or frost.

We are advising you as a matter of urgency and would like to meet soon to discuss the site.

A more comprehensive memo will follow once it has been prepared.

Cheers, **s 36**

s 36

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**Celebrating pitt&sherry's first Reflect
Reconciliation Action Plan.**

[Click to learn more.](#)

pitt&sherry acknowledge the Aboriginal and Torres Strait Islander people as the Traditional Custodians of country on which we live and work. We pay our respects to the Traditional Custodians and Elders past, present and emerging, and recognize their continuing connection to land, water and community.

Released under RTI

Doc 7

From: s 36
Sent: Tuesday, 25 May 2021 6:27 PM
To: s 36
Cc: s 36
Subject: Re: Tasman Highway Paradise Gorge scope of works

Follow Up Flag: Follow up
Flag Status: Completed

NOTE: This email chain appears to contain email from outside Golder

Thanks s 36

An important aspect of assessing the proposed short term mitigation measures is to know the inputs and basis of the original risk assessment which concluded ARL 1. Arriving at an ARL level requires 4 key inputs:

- the likelihood of failure,
- the probability that the boulder travels to the road after it is detached.
- the time that people are exposed to the hazard which is related to traffic count.
- how vulnerable people are - i.e. will from a boulder impact cause a fatality.

P&S should have done two assessments:

- the risk of direct impact of a boulder to a vehicle.
- the risk of a vehicle impacting a boulder already on the road before the vehicle gets there.

The latter is relatively easy to manage by reducing the speed limit such that there is adequate stopping distance if a car were to come across a boulder on the road. The former is harder to manage, but has a lower probability of occurring (and there is a catch 22 in that slowing vehicles to reduce the risk from one hazard increases the risk from another). In principle, mitigation involves reducing one or more of the key inputs listed above. We need to consider how the proposed measures, for example monitoring reduce these inputs and whether they reduce the risk to a level that can be tolerated without closing the road.

Once we have the risk assessment from P and S, in particular the risk of direct impact and basis for the assessment we can critically assess whether the assessed risk level is appropriate and then look at how the temporary mitigation measures proposed reduce the risk.

For the long term measures I can have some of our rock mechanics engineers take a look at the practicality and suitability of the scaling works proposed.

Please send through the risk assessment once you have it. In the meantime I will look to put a proposal together.

Regards,

s 36



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s 36 golder.com

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From: s 36
Sent: Tuesday, 25 May 2021 6:06 PM
To: s 36
Cc: s 36
Subject: RE: Tasman Highway Paradise Gorge scope of works

EXTERNAL EMAIL

I've asked Pitt and Sherry to provide this

Cheers

s 36

From: s 36
Sent: Tuesday, 25 May 2021 2:07 PM
To: s 36
Cc: s 36
Subject: Re: Tasman Highway Paradise Gorge scope of works

Hi s 36

Thanks for sending this through - we will go ahead and prepare a proposal - I should be able to issue by tomorrow. I have scanned the documents you sent though and could not see the P&S risk assessment. Do you have their risk assessment/risk calculations which has lead to the assessment of ARL1? It would be good to know the inputs used for the assessment.

Regards,

s 36

From: s 36
Sent: Tuesday, 25 May 2021 1:50 PM
To: s 36
Cc: s 36
Subject: Tasman Highway Paradise Gorge scope of works

Hi s 36

Thanks for the discussion earlier today.

As discussed, we'd like to engage Golder (WSP) to do a peer review of the findings and proposed methodology prepared by Pitt and Sherry.

Given the significance of the issue, the risk of doing nothing, and the proposed actions and the associated lengthy road closures and inconvenience to the community, we'd like additional assurance that the actions are appropriate.

I have provided their preliminary report and will provide the project plan and scope of works later today once I have received this from Pitt and Sherry.

Happy to provide any additional documentation or contact you require.

Pitt and Sherry are aware that you will be performing this work (as are MRT, who provided your contact details).

If you could respond in terms of fees/terms and acceptance of the work, that would be appreciated.

As you understand, we are after a very quick initial assessment, as the matter is urgent

Many thanks

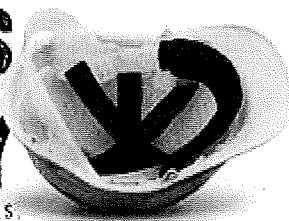
s 36

Salamanca Building, Parliament Square
4 Salamanca Place, Hobart, TAS 7000 | GPO Box 536, Hobart TAS 7001

s 36

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My current work pattern is as follows:

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Doc 8

From: s 36
Sent: Tuesday, 25 May 2021 5:16 PM
To: s 36
Cc: s 36
Subject: FW: Proposed Paradise George Monitoring System
Attachments: 25052021161516-0001.pdf

FYI

From: s 36
Sent: Tuesday, 25 May 2021 5:07 PM
To: s 36
Cc: s 36
Subject: FW: Proposed Paradise George Monitoring System

Hi s 36, further to our discussion today, attached is the proposed Paradise George Monitoring System that will be installed this week.

The pink tilt meters, provide automatic data reporting back to a website
The purple prisms will require manual survey, until the automatic theodolite is installed

Please feel free to give me a call if you would like to discuss

Regards

s 36

pitt&sherry

s 36

pittsh.com.au

-----Original Message-----

From: s 36
Sent: Tuesday, 25 May 2021 4:20 PM
To: s 36
Cc: s 36
Subject: Wishlist for tilt sensor and prism locations

Hi all,

s 36 has gone through the model and provided a wishlist for locations for the tilt sensors and the prisms.

I expect that the most sensible way to approach it is to just get there on Thursday and install whatever we can safely, with the priority being the tilt sensors on the block we don't like much.

Note that **s 36** has asked for one tilt sensor on top of the block and another on the back.

Cheers, **s 36**

s 36

Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | Phone +61 3 6210 1400
pittsh.com.au

pitt&sherry acknowledge the Aboriginal and Torres Strait Islander people as the Traditional Custodians of country on which we live and work. We pay our respects to the Traditional Custodians and Elders past, present and emerging, and recognize their continuing connection to land, water and community.

-----Original Message-----

From: ApeosPort-V C6676 <gfloor.6676@pittsh.com.au>

Sent: Tuesday, 25 May 2021 4:15 PM

To: **s 36**

Subject: Scan from Fuji Xerox MFD #32466

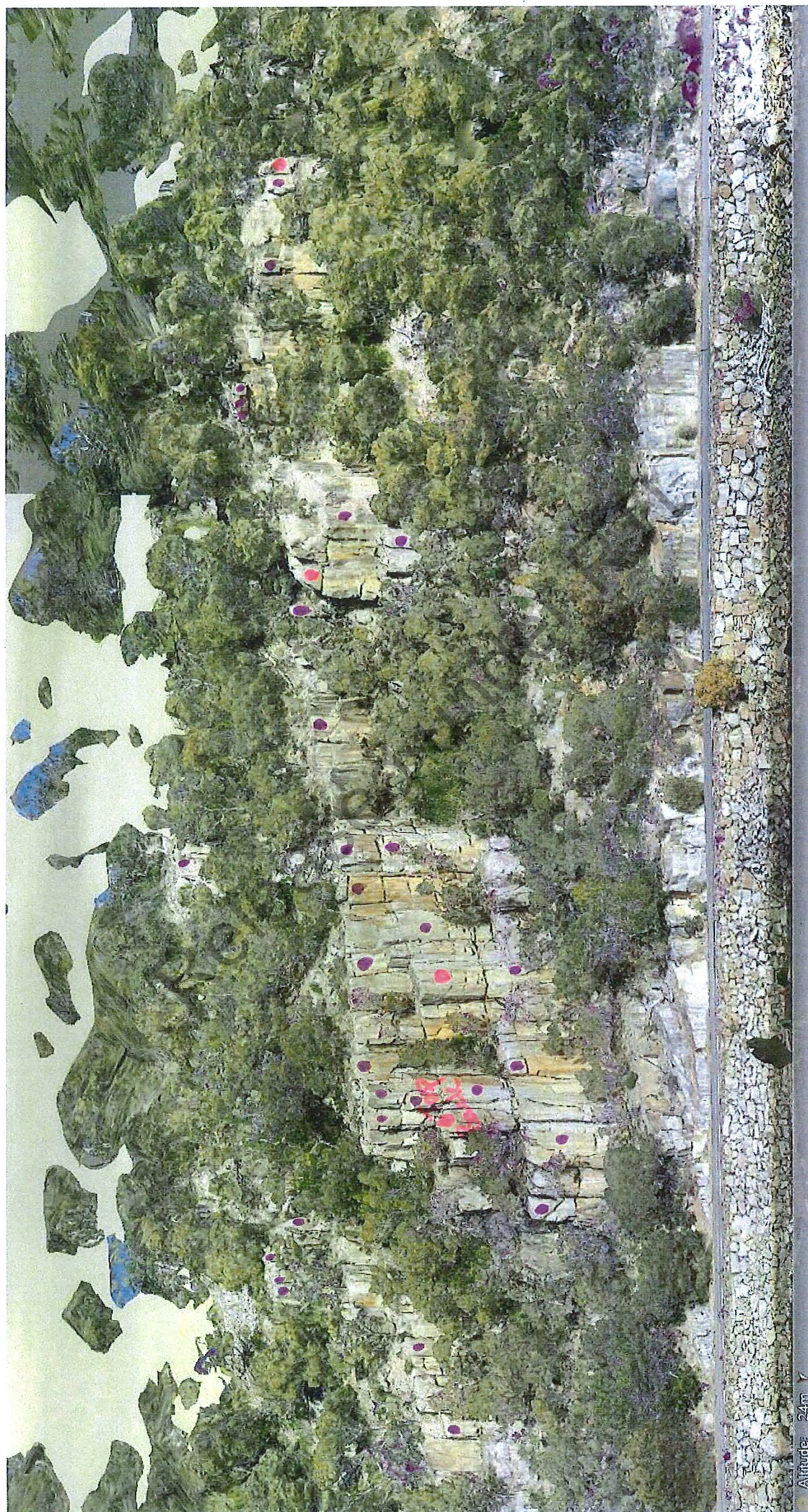
CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Number of Images: 1

Attachment File Type: PDF

Device Name: ApeosPort-V C6676

Device Location: Pitt & Sherry #32466 GF



Tilt Prism

Doc 9

From: s 36
Sent: Tuesday, 25 May 2021 5:01 PM
To: s 36
Cc: s 36
Subject: RE: Paradise Gorge - Contractor Briefing

Hi All, thanks for your time today below are the contact details for all parties.

Contract Arrangements:

- Stornoway to be Head Contractor and to execute works under existing Road Maintenance Contract
- SpiderTech to be engaged and managed by Stornoway
- pitt&sherry to execute works under Panel Contract 3100
- Veris to be engaged and managed by pitt&sherry
- Veris to provide raw data. Data interpretation to be undertaken by pitt&sherry

Contact Details

Veris

- s 36

SpiderTech

- s 36

Stornoway

- s 36

pitt&sherry

- s 36

Program of Works

As discussed I have provided the Project Team with a draft Program which is as follows:

The following schedule for the works is proposed

1. *Stage 0 – Monitoring*
 - a. *Roadside rock fall observations Ongoing*
 - b. *Installation of tilt meters (automatic digital monitoring) 26/05 to 28/05/2021*
 - c. *Establishment of theodolite datum points 26/05 to 28/05*
 - d. *Daily theodolite manual measurement 28/05/2021*
 - e. *Automatic theodolite TBC*
2. *Stage 1 - Risk Reduction Works*
 - a. *Preparatory Investigations 26/05 to 28/05/2021*
 - b. *Site Establishment 5-8 days 29/05 to 07/06*
 - c. *Boulder Removal 14-21 days 08/06 to 27/06*

- d. Clean-up 7-10 days 28/06 to 07/07
- e. Site Remediation 7 days 08/07 to 14/07

Assumptions

- The exact duration of the boulder removal works is unknown, as the number of boulders to be removed from the buttress is not currently able to be assessed.
- Site remediation assumes it is acceptable to re-establish a minimum of one lane of traffic and operate the Tasman Highway under shuttle flow arrangements

Actions:

1. **Action** s 36 Wed 26/05 - Veris will be onsite flying a drone and undertaking additional laser scanning and aerial photography of the buttress and adjacent slopes. Stornoway will be onsite to assess locations for construction of a footing to support data collection equipment
2. **Action** s 36 Wed 26/05 - SpiderTech and Stornoway to meet up and review SWMS and Safety Plans for works
3. **Action** s 36 Thurs 27/05 and possibly Frid 28/05 - Veris, pitt&sherry SpiderTech and Stornoway will be onsite and undertaking abseiling works over the rock face to install instrumentation. To undertake the works they will be closing the road for short periods as permitted within the Road Maintenance Contract. Works to also include investigations to confirm preferred route for accessing top of the buttress

Notes:

- The location of a safe access track to top of the buttress needs to be reviewed based on latest 3D model observations
- SpiderTech advised that Helicopter delivery of equipment to the top of the buttress will like be required
- SpiderTech advised that they would like space to be made available onsite for storage of a shipping container
- Timing for delivery of automatic theodolite still to be confirmed due to National shortage of equipment
- Veris to provide 5 tilt meters that are to be fixed to critical rocks as identified by pitt&sherry. Two more on way. The tilt meters report data via. 3G/4G and can be read from remote webpage
- Theodolite targets/prisms to be installed over various rocks, across buttress

Regards

s 36

pitt&sherry

s 36

-----Original Appointment-----

From: s 36

Sent: Tuesday, 25 May 2021 9:12 AM

To: s 36

Cc: s 36

Subject: Paradise Gorge - Contractor Briefing

When: Tuesday, 25 May 2021 12:00 PM-1:00 PM (UTC+10:00) Hobart.

Where: DSG Salamanca Bldg - 4 Salamanca Place

Doc 10

From: s 36
Sent: Tuesday, 25 May 2021 6:06 PM
To: s 36
Cc: s 36
Subject: RE: Tasman Highway Paradise Gorge scope of works

Follow Up Flag: Follow up
Flag Status: Completed

I've asked Pitt and Sherry to provide this

Cheers

s 36

From: s 36
Sent: Tuesday, 25 May 2021 2:07 PM
To: s 36
Cc: s 36
Subject: Re: Tasman Highway Paradise Gorge scope of works

Hi s 36

Thanks for sending this through - we will go ahead and prepare a proposal - I should be able to issue by tomorrow. I have scanned the documents you sent though and could not see the P&S risk assessment. Do you have their risk assessment/risk calculations which has lead to the assessment of ARL1? It would be good to know the inputs used for the assessment.

Regards,

s 36

From: s 36
Sent: Tuesday, 25 May 2021 1:50 PM
To: s 36
Cc: s 36
Subject: Tasman Highway Paradise Gorge scope of works

Hi s 36

Thanks for the discussion earlier today.

As discussed, we'd like to engage Golder (WSP) to do a peer review of the findings and proposed methodology prepared by Pitt and Sherry.

Given the significance of the issue, the risk of doing nothing, and the proposed actions and the associated lengthy road closures and inconvenience to the community, we'd like additional assurance that the actions are appropriate.

I have provided their preliminary report and will provide the project plan and scope of works later today once I have received this from Pitt and Sherry.

Happy to provide any additional documentation or contact you require.

Pitt and Sherry are aware that you will be performing this work (as are MRT, who provided your contact details).

If you could respond in terms of fees/terms and acceptance of the work, that would be appreciated.

As you understand, we are after a very quick initial assessment, as the matter is urgent

Many thanks

s 36

Salamanca Building, Parliament Square

4 Salamanca Place, Hobart, TAS 7000 | GPO Box 536, Hobart TAS 7001

s 36

www.stategrowth.tas.gov.au

**YOUR SPEED IS
OUR SAFETY**
SLOW DOWN FOR ROAD WORKERS



My current work pattern is as follows:

s 36

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Doc 11

From: s 36
Sent: Tuesday, 25 May 2021 6:01 PM
To: s 36
Cc: s 36
Subject: Re: P.20.1839.003 Paradise Gorge - Project Plan

Hi s 36

You are correct. Apologies for any confusion

Regards

s 36

s 36

pitt&sherry

s 36

From: s 36
Sent: Tuesday, May 25, 2021 5:56:16 PM
To: s 36
Cc: s 36

s 36

s 36

Subject: RE: P.20.1839.003 Paradise Gorge - Project Plan

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

s 36

Just clarifying that as per our discussion just now, no road closure is required to conduct works tomorrow.

Partial intermittent road closures would be required on Thursday and Friday, with full road closure starting from Saturday.

Cheers

s 36

From: s 36
Sent: Tuesday, 25 May 2021 4:24 PM
To: s 36
Cc: s 36

s 36

Subject: RE: P.20.1839.003 Paradise Gorge - Project Plan

Hi s 36 please find a draft Project Execution Plan for your review and comment.

We are working through finalising the Contractor Scope and Methodology statements, following today's meeting and the Safety in Design Risk assessment

The program has been refined following today's Contractor meeting

Please let me know if you would like to catch-up and discuss

Regards

s 36

pitt&sherry

s 36

Connect on LinkedIn

From: s 36

Sent: Monday, 24 May 2021 6:09 PM

To: s 36

Cc: s 36

s 36

Subject: RE: P.20.1839.003 Paradise Gorge - Project Plan

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi s 36

I prefer the State Growth project plan please

To clarify, we want to engage Pitt and Sherry to manage this project (not just the parts that will be delivered by Pitt and Sherry)

Other preliminary comments below

Cheers

s 36

From: s 36

Sent: Monday, 24 May 2021 3:59 PM

To: s 36

Subject: P.20.1839.003 Paradise Gorge - Project Plan

Hi s 36 do you have a preference of Project Plan structure?

s 36 has provide me with both of the attached documents.

I have prepared a Variation and will have it through to you for review in the morning. I have stated our current scope is as follows. Please let me know if my notes are incorrect

- Project Management Support, including;
 - Preparation of a Project Plan
 - Program of Works

- Scope of Works and Methodology for Delivery including quantifying bedding materials required (ie pea gravel etc)

Regular monitoring of project timeframes, costs and deliverables

Management of works conducted by other contractors (Stornoway, Spidertech etc)

- Geotechnical and Geological Engineering Support, including;
 - Ongoing assessment on incoming data
 - Support to Mineral Resources Tasmania (MRT) whom will undertake a peer review
- Stakeholder Engagement Support
 - Support the Department in development of Public Communication background material associated with background and proposed works methodology

Actions identified under the Stakeholder and Community Engagement Plan including conducting stakeholder mtgs

- Data Acquisition - VERIS
 - Engage surveyors, to undertake the following works:
 - Laser scan and drone footage for the full extents of the rock buttress, including a minimum 200m of road and associated dry-stone rock wall
 - Provide a high-quality aerial photo of the works area
 - Provide tilt meters, to be installed on to back of any high-risk rocks
 - Provide a theodolite, or similar automatic survey monitoring system to monitor data points, established on the rock face from nominally 200-300m away
 - Provide ongoing support during the works
- Site Services
 - Provide geotechnical specialist to oversee rock removal from existing buttress face
 - Assessment regarding long term durability and safety of the remaining buttress face
 - Concept design of long-term ground support recommendations for the remaining buttress face

Thanks

Regards

s 36

pitt&sherry

s 36

[Connect on LinkedIn](#)

pittsh.com.au

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Released under RTI

Notes and Actions – State Roads Emergency Response Group

Event: Rock – Paradise – Tasman Hwy
Date: 25 May 2021
6.06 Meeting Room, Salamanca Square
Building and MS Teams
Notes prepared by: s 36
CM: D21/I20059
Attendees: see Appendix A

Time: 10.00am

Scope: These notes record the agreed actions of the State Roads Emergency Response Group and a summary of discussion points.
 Members/attendees keep their own detailed/supporting notes as necessary.

FOR Circulation to all ERG members and Branch managers for circulation to staff

Item No.	Topic
1	<p>1.1 Aim: To understand and manage the risk of rock movement that has been determined may cause an issue on a section of the Tasman Hwy in the vicinity of Paradise Gorge and to minimise the impacts on people and property.</p> <p>1.2 Actions from previous meeting:</p> <p>Pitt and Sherry – Develop a plan for an update today.</p> <p>s 36 – Advise Stornoway of information relating to weather triggers. Completed.</p> <p>s 36 – Procure Portable Weather Station. Ongoing</p> <p>s 36 – Follow up on contract requirements – Completed.</p> <p>s 36 – Review TMP when made available, assess Wielangta Road for sign requirements if deemed a viable alternate route. Ongoing</p> <p>s 36 – Assess Wielangta Road to determine what is required to make trafficable. Completed.</p> <p>s 36 – Continue progressing SCEP.</p> <p>All meetings</p> <ul style="list-style-type: none"> • GM SR to update DecSec/Sec/Ministers office as necessary • No external briefings at this stage (State Growth EM Coord/EMSC) • All attendees to brief/updated direct reports/contractors as needed • AEMO to update notes from previous meeting as requested
2	<p>Situation update – summary of current situation report and forecast from EM partners/BOM:</p> <p>Weather conditions at this location – As of this morning – weather forecast was indicating it would be around 4 degrees.</p> <p>Maintenance – Visual inspections have been ongoing and no events have triggered closure. No portable weather stations available, still attempting to procure one.</p> <p>Discussion about consideration of monitoring as opposed to closure – Pitt and Sherry – Action - To confirm and provide plan around this.</p>

Notes and Actions – State Roads Emergency Response Group

	<p>Road Assets – s 36 – Wielangta Road reasonably well maintained road Glamorgan Spring Bay end, lot of greasy surface (wet), near to the border of the two councils. How do we go about conducting work on their road to improve stability? Some ongoing issues forecast with Winter approaching .</p> <p>Stornoway to converse with local governments on road maintenance on Wielangta Road.</p> <p>Bridges and Network Access – N/A</p> <p>Projects – N/A</p> <p>Stakeholder Engagement – Continuing with progression of SCEP.</p>
3	<p>State Roads Situation Updates/Priorities</p> <p>3.1 Current status of infrastructure and services including any known impacts/damage/closures/concerns as per Appendix B</p>
	<p>3.2 Priorities</p> <ul style="list-style-type: none"> • Maintenance Services <ul style="list-style-type: none"> s 36 – Action – Procure portable weather station. Ongoing s 36 – Action – TMP – Stornoway. Share with relevant stakeholders. s 36 – Action – Alternate routes and timings. Ongoing • Road Assets/Alternate Routes • Bridges – Investigation of heavy vehicle alternate routes. • Network Management <ul style="list-style-type: none"> s 36 – Action – Review TMP when made available. Assess Wielangta Road for sign requirements if deemed a viable alternate route. s 36 – Action – Identify viable alternate routing and how many VMBs will be required. <p>Static signs being procured.</p> <ul style="list-style-type: none"> • Projects – N/A • Environment <ul style="list-style-type: none"> s 36 – Action – contact aboriginal heritage to see if any sensitive sites are in area. <p>Unlikely to find artefacts, community may have an attachment to. Convict wall heritage listed, eagle nest possibly in line of site. Biodiversity code is exempt due to emergency event. At this point no issues identified.</p>

Notes and Actions – State Roads Emergency Response Group

	<p>3.3 Emerging issues:</p> <p>Weather</p> <p>Availability and procurement of resources</p> <p>Alternate local route</p>
	<p>3.4 Messaging/stakeholder management:</p> <p>s 36 – Action – Continue progression of SCEP.</p> <p>Stakeholder Engagement - Lot of stuff in terms of resourcing – early tomorrow afternoon is the deadline for stakeholder engagement to react to a possible road closure for this weekend.</p>
	<p>3.5 Safety:</p> <p>N/A</p>
4	<p>Agency Priorities</p> <p>4.1 Requests/issues referred to other areas:</p> <p>MRT are aware of issue.</p> <p>Minister's Office aware – s 36 have been informed.</p>
	<p>4.2 Representation at mtgs eg EM Coordination Group:</p> <p>N/A</p>
	<p>4.3 Broader stakeholder communication issues</p> <p>No comms until plan is confirmed.</p>
5	<p>External Matters - REMCs/SEMC</p> <p>MRT</p> <p>Glamorgan Spring Bay Council</p> <p>Sorell Council</p> <p>Taswater</p> <p>MAST – when we close road advise MAST through email.</p>
6	<p>Task List:</p> <p>Pitt and Sherry – Assign a PM – s 36 - Completed</p> <p>Pitt and Sherry – Develop more detailed plan for an update today – Completed.</p> <p>Pitt and Sherry – Action – Source monitoring equipment. Completed</p> <p>Pitt and Sherry – Action – Develop scope of works. Completed.</p> <p>Pitt and Sherry – Action – Develop plan for event to occur. Ongoing</p> <p>Pitt & Sherry – Action – Allocate stakeholder engagement resource for</p>

Notes and Actions – State Roads Emergency Response Group

	<p>community consultation. Completed.</p> <p>s 36 – Advise Stornoway of information relating to weather triggers. Completed</p> <p>s 36 – Action – Procure portable weather station. Ongoing.</p> <p>s 36 – Action – TMP – Stornoway. Completed</p> <p>s 36 – Action – Alternate routes timings and timings from Stornoway Ongoing – Information has been provided by network access.</p> <p>s 36 – Action – Contract requirements, options. Completed</p> <p>s 36 – Review TMP when made available, assess Wielangta Road for sign requirements if deemed a viable alternate route.</p> <p>s 36 – Action – Assess Wielangta Road to determine what is required to make trafficable. Completed.</p> <p>s 36 – Action – contact aboriginal heritage to see if any sensitive sites are in area. Ongoing.</p> <p>s 36 – Action – Continue progressing SCEP. Ongoing.</p> <p>s 36 – Action – Contact BoM for short to long term forecast and ongoing weather reports. Completed</p> <p>s 36 – Action – Contact MRT to get advice. Completed.</p> <p>s 36 – Action Contact MAST for advice and how to prevent access to waterway in event road is closed. Completed.</p> <p>s 36 – Action – Contact Passenger Transport. Completed.</p> <p>s 36 – Action – Inform SREMC of event. Completed.</p> <p>s 36 – Action – Inform Glamorgan Spring Bay Council and Sorell Councils of situation and access requirements for Wielangta Road. Completed.</p> <p>s 36 – Action – Arrange a tentative meeting Paradise Gorge for Wednesday with relevant stakeholders. Ongoing.</p> <p>s 36 – Action – Liaise with Taswater. Completed</p> <p>All meetings</p> <ul style="list-style-type: none"> • GM SR to update DecSec/Sec/Ministers office as necessary – ongoing. • Some Limited external briefings have occurred (State Growth EM Coord/EMSC) – ongoing. • All attendees to brief/updated direct reports/contractors as needed – ongoing.
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Notes and Actions – State Roads Emergency Response Group

7	Other Business:
8	7.1 Lead personnel for next period: N/A

Released under RTI

Notes and Actions – State Roads Emergency Response Group

Appendix A

Attendees:

This list shows Emergency Response Group (ERG) members who attended this meeting.

Attendance may change based on the nature of the event. The role of Chair may be delegated.



From: system@luciditysoftware.com.au
Sent: Monday, 24 May 2021 10:24 AM
Subject: Tasman Highway Paradise Rock Buttress Inspection
Attachments: Tasman Highway Paradise Rock B.pdf

A Tasman Highway Paradise Rock Buttress Inspection Form has been completed

A copy is attached for your information.

Please login to Stornoway

ID [270]

Released under RTI

Doc 13:1

Tasman Highway Paradise Rock Buttress Inspection

Details

Form id	52666
Created at	24/05/2021 by s 36
Completed at	24/05/2021
Last modified	24/05/2021 10:24:09 by s 36
Status	Complete
Respondent	s 36
Division	Roads
Business unit	Roads South Minor Works
Location	Brighton
Department	
Company	00 Stornoway
Location	



(-42.559270499311, 147.85041389824)

Time Onsite 10:22 AM

Photo Instructions

Photos are to be taken of all inspection points, road closure signage and any rock falls.

Comments no rock debris in drain

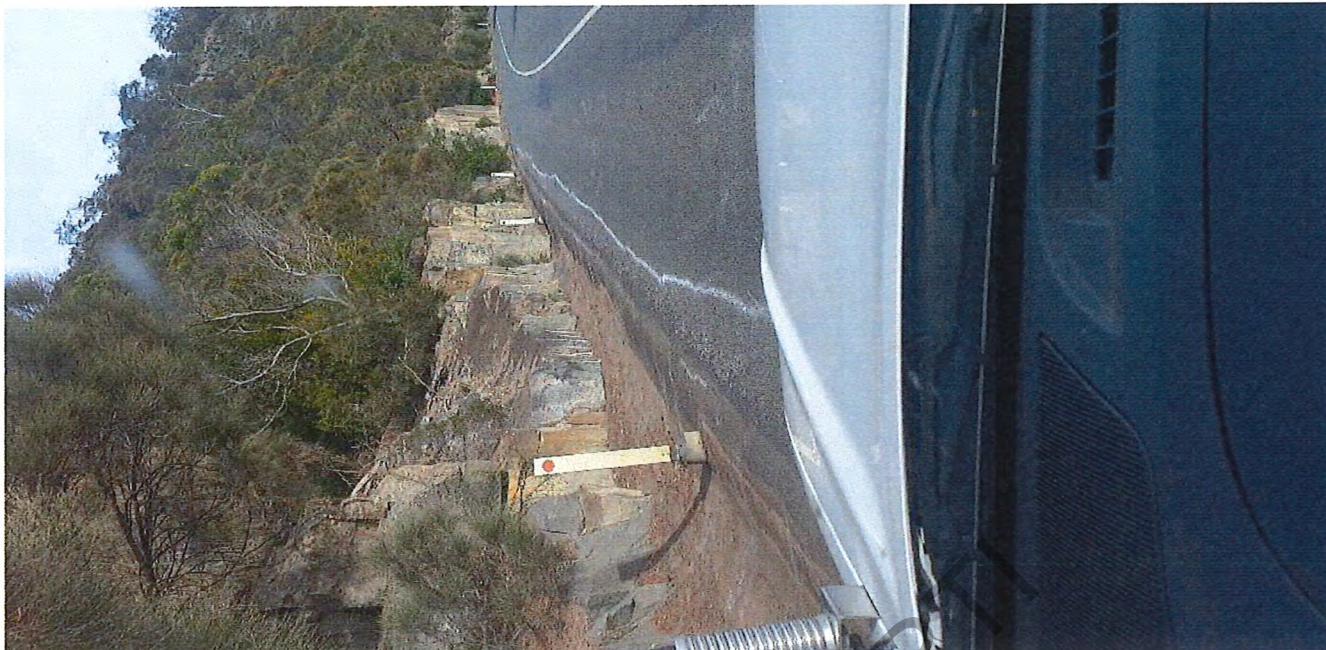
Inspection Completed by:

s 36

Additional

Photos





Attachments

- No file attachments

Actions

ID	First name	Last name	Due date	Date closed	Action description	Status	Last Comment
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Released under R

Doc 14

From: s 36
Sent: Monday, 24 May 2021 11:49 AM
To: s 36
Subject: RE: Content Manager DOCUMENT : D21/117457 : State Roads Emergency Response Group Agenda 24 May 2021 [SEC=OFFICIAL]
Attachments: East Coast Tas State Growth.pptx
Categories: For Noting

Hi all,

Please see attached the slides from the presentation. Within it there are some useful links - but because the ACCESS S charts are experimental they aren't available to the public (one day).

Please feel free to reach out for more info!

Kind regards,

s 36

-----Original Message-----

From: s 36
Sent: Monday, 24 May 2021 10:49 AM
To: s 36

s 36

Subject: Content Manager DOCUMENT : D21/117457 : State Roads Emergency Response Group Agenda 24 May 2021

Please see Agenda attached, for those attending we have Room 2.23 pencilled in, once we are in the room and current occupants have left I will update the meeting request to enable teams hookup .

-----< Content Manager Record Information >-----

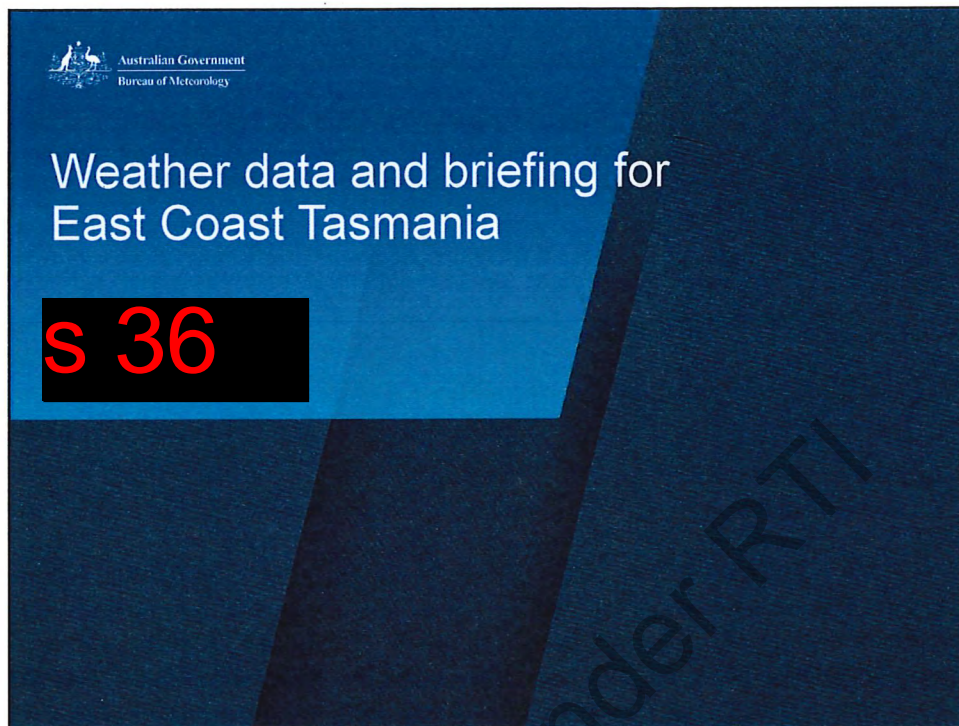
Record Number: D21/117457

Title: State Roads Emergency Response Group Agenda 24 May 2021

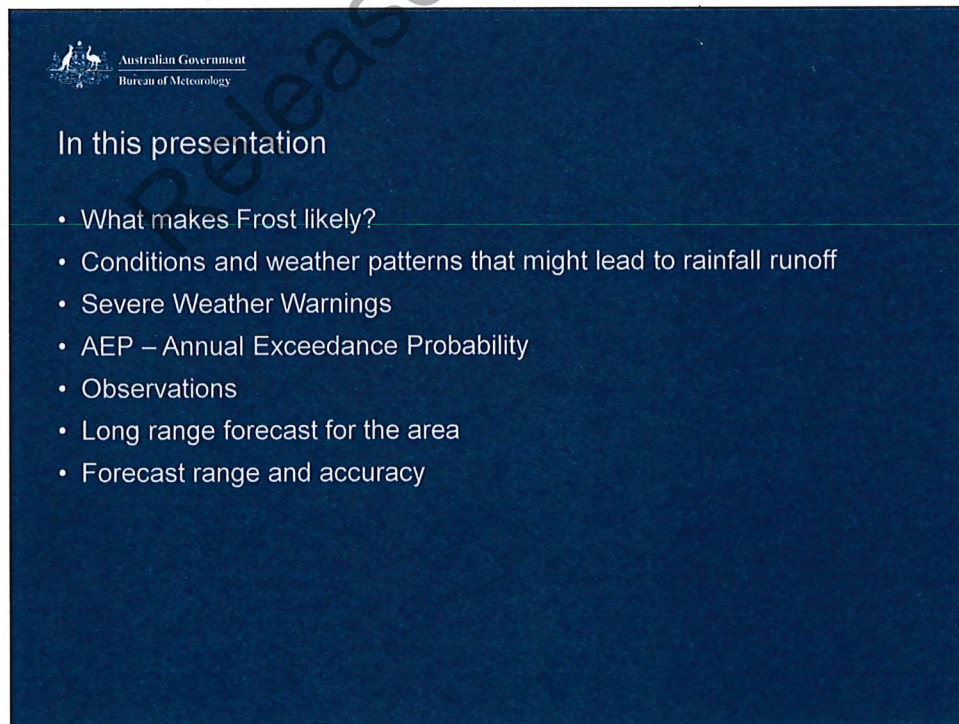
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1



2

Australian Government
Bureau of Meteorology

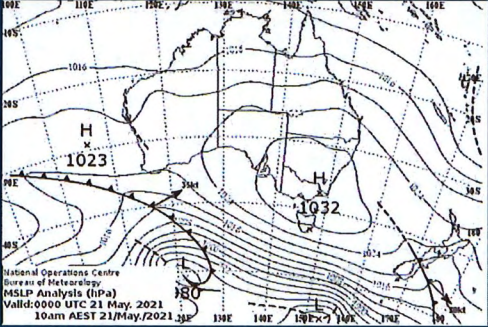
- https://www.google.com.au/maps/@-42.5609907,147.8537816,3a,75y,160.92h,122.96t/data=!3m6!1e1!3m4!1shSI0fds1y2DZ_O11-dB-Q!2e0!7i3328!8i1664

3

Australian Government
Bureau of Meteorology

What causes Frost?

- Frost** is likely to form when temperatures are at or below 1 degree, however light frost may occur between 1 to 2 degrees.
- Synoptically the most common scenario for this is following a cold southwesterly outbreak with a ridge of high pressure to then move over the area and slowly to the east.
- A cold airmass with light winds, clear skies and low humidities all contribute to the formation of frost.
- MSLP chart from Friday morning is a good example:



National Operations Centre
Bureau of Meteorology
MSLP Analysis (hPa)
Valid: 0000 UTC 21 May, 2021
10am AEST 21/May/2021

4

Using current estimates

- The consultant has estimated that this might be a temperature below 3 degrees, and rain of 5-10mm per hour for at least 2 hours, or 25mm in a day.
- **ROCK FALL HAZARD NEAR ORFORD (Paradise Gorge)**
- Forecast for the week 24/5/2021-31/5/2021
- **Temp below 3 degrees** : Friday, Saturday and Sunday mornings the minimum temperature is expected to be just under 3 degrees. Saturday is the coldest.
- **Rain 5-10mm/hr for >=2hrs or 25mm in 1 day** : nil risk

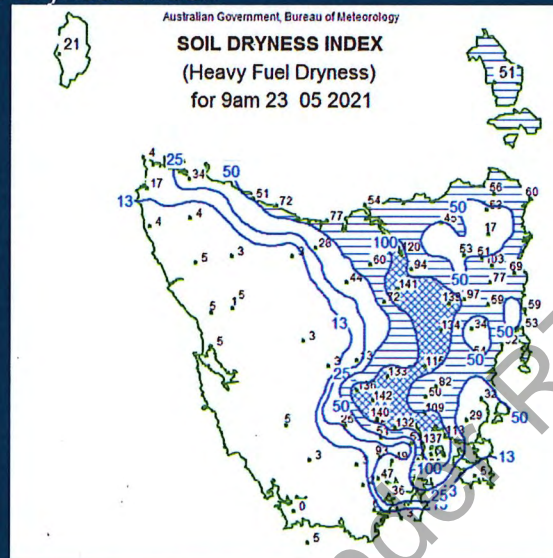
5

Weather that may lead to runoff

- **Runoff causes** at this time of year are less likely to occur, however in the event that they do then it's likely to be attributed to a complex low (various centres) moving slowly over Tasmania with heavy rainfall.
- A line of thunderstorms due to the passage of a cold front may also produce localised heavy falls which in turn may cause run off particularly following a prolonged dry spell (SDI is high – example on next slide).
- An east coast low is the most likely scenario to bring heavy falls to the east coast however this is more likely to occur in ~late Spring, Summer or ~early Autumn.
- Severe Weather Warnings for Heavy rainfall that may lead to flash flooding
 - AEP <10% for Heavy Rainfall,
 - AEP <2% for Intense Rainfall

6

SDI – Soil Dryness Index

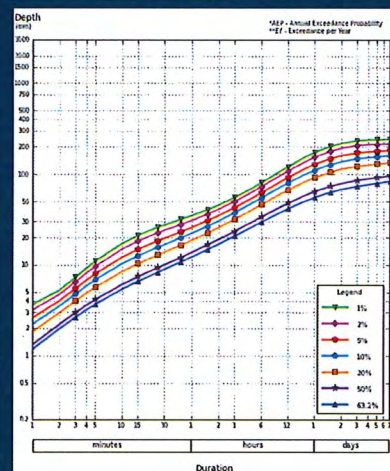


7

AEP – Annual Exceedance Probability

- <http://www.bom.gov.au/water/designRainfalls/revised-ffd/?multipoint>

Duration	Annual Exceedance Probability (AEP)						
	63.2%	50%	20%	10%	5%	2%	1%
1 min	1.19	1.33	1.55	2.25	2.63	3.20	3.67
2 min	1.99	2.23	2.60	3.54	4.07	4.77	5.31
3 min	2.46	2.89	4.05	4.80	5.55	6.55	7.25
4 min	3.22	3.83	4.95	5.91	6.85	8.23	9.30
5 min	3.70	4.37	5.74	6.89	8.07	9.72	11.1
10 min	5.43	6.33	8.35	10.4	12.3	15.1	17.4
15 min	6.63	7.76	10.4	12.8	15.0	18.4	21.3
20 min	7.82	9.19	11.9	14.3	17.0	20.8	24.0
25 min	8.50	9.97	13.0	15.7	18.6	22.7	26.1
30 min	9.00	10.1	14.0	16.9	19.9	24.3	27.8
45 min	10.8	12.1	16.6	19.6	23.3	28.0	31.8
1 hour	12.3	13.8	18.9	22.5	26.1	31.1	35.2
1.5 hour	14.8	16.7	22.7	26.8	31.0	36.5	40.8
2 hour	17.0	19.2	26.1	30.7	35.3	41.4	46.0
3 hour	20.9	23.6	32.1	37.5	42.2	50.3	55.6
4.5 hour	25.7	29.2	39.9	47.0	53.7	62.4	68.9
6 hour	29.8	34.0	46.8	55.1	63.1	73.4	81.1
9 hour	36.5	41.9	56.3	68.1	79.3	92.8	103
12 hour	41.9	48.3	67.7	80.6	92.8	109	122
15 hour	46.9	53.9	74.2	88.4	104	125	139
24 hour	55.7	64.7	82.8	111	129	153	174
30 hour	60.1	69.9	100	123	141	169	191
36 hour	63.4	73.8	105	128	150	180	203
48 hour	68.3	79.5	115	138	162	195	220
72 hour	73.9	85.9	123	149	173	206	235
96 hour	77.2	89.6	128	153	178	213	240
120 hour	79.7	92.2	131	156	181	215	241
144 hour	81.8	94.6	133	159	182	216	242
168 hour	83.9	96.9	135	161	185	218	244



8

Observations

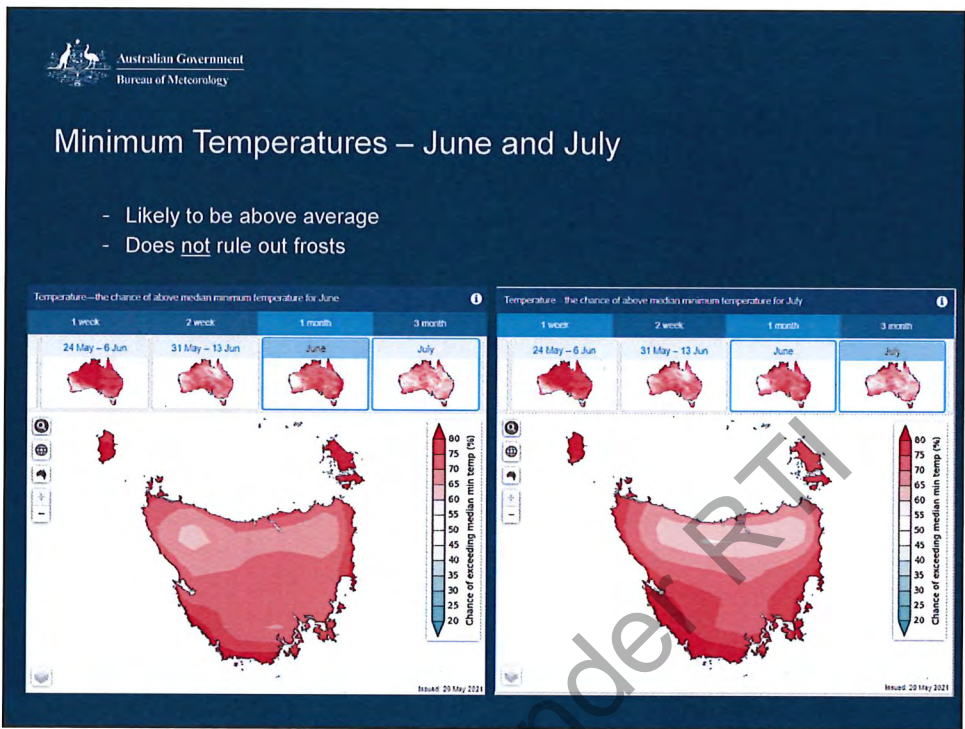
- Paradise Gorge is more sheltered than our closest observation station at Orford so the minimum temperature may be slightly less than the Orford forecast.
- More elevated locations likely have a lower temperature. Depending on how high the boulder is, it's likely the temperature would be lower than at the road level (but close).
- Meteye – for closest observations and custom forecasts
- It's unlikely there will be much if any variation in rainfall about the area.
 - Comparing sites:
 - Maria Island likely similar rainfall in a Westerly wind flow
 - Likely much more in Orford than Maria Island in an Easterly.
- TFS/Parks might have a spare portable AWS to set up quickly?

9

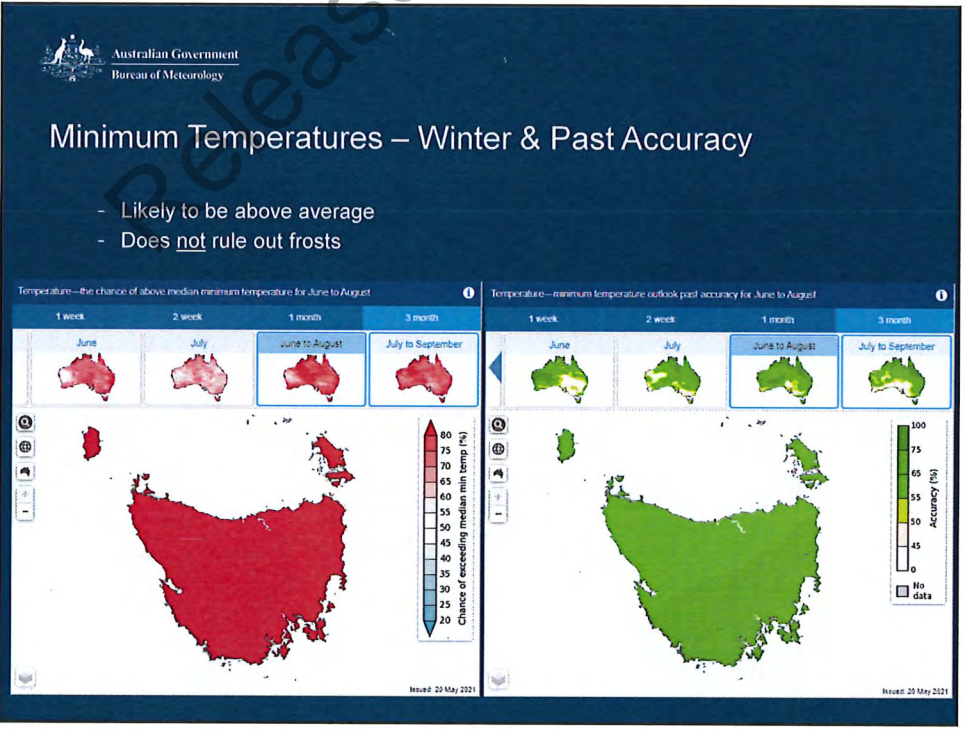
Long Range Forecast

- The El Niño–Southern Oscillation is neutral, as are most other climate drivers.
- Following images taken from ACCESS S model output. Low resolution but gives an indication.

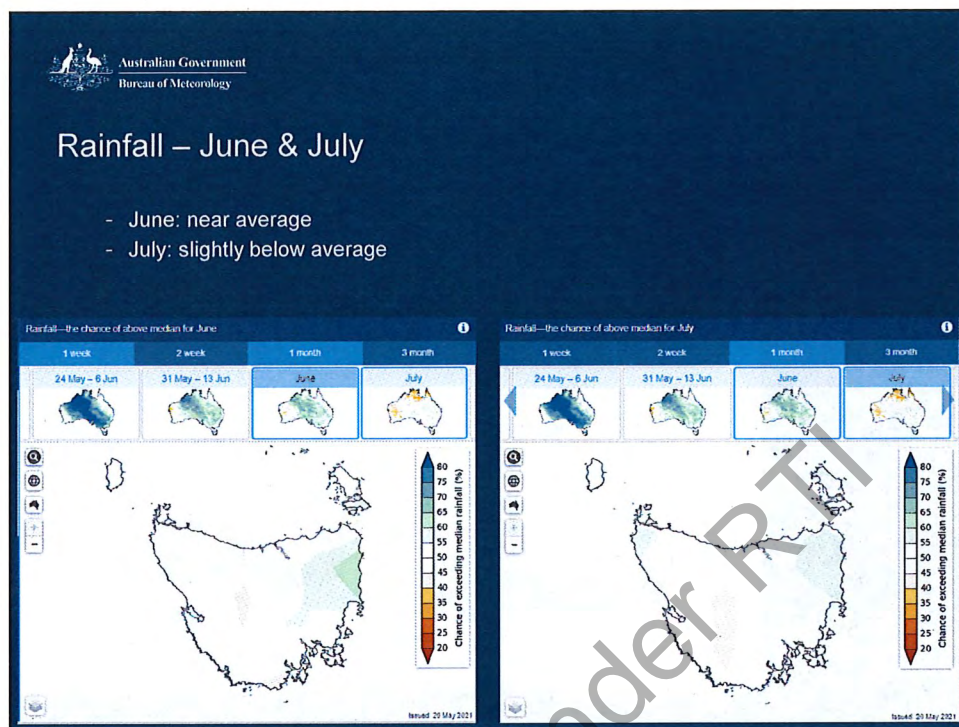
10



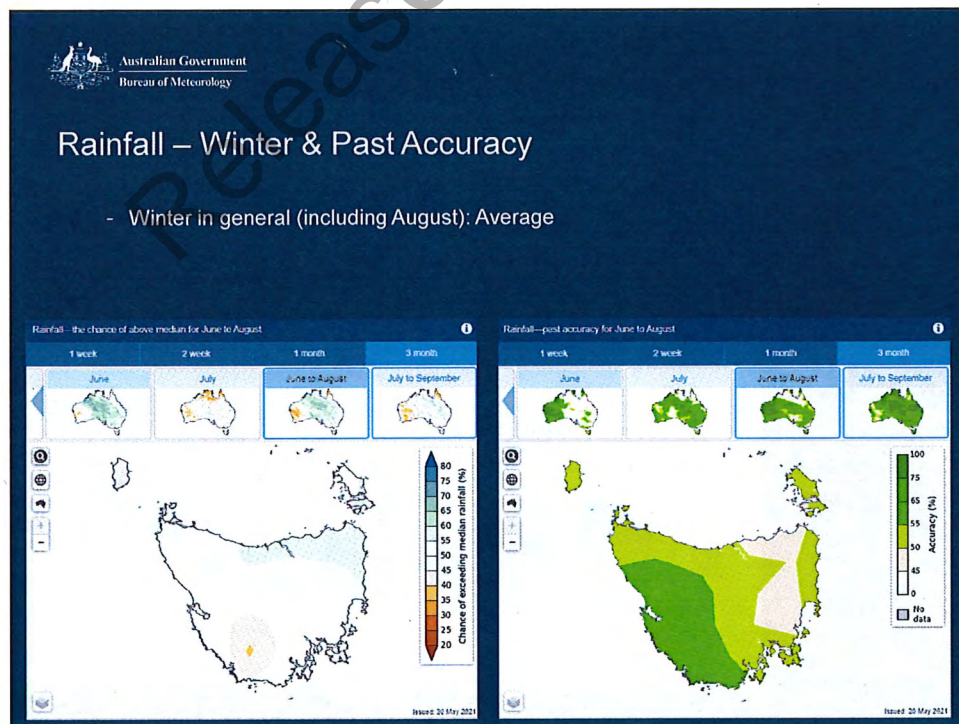
11



12



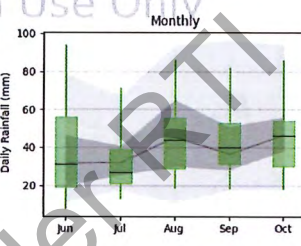
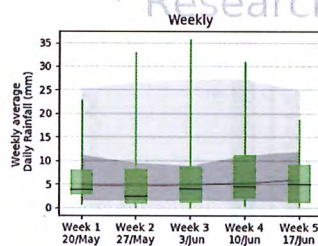
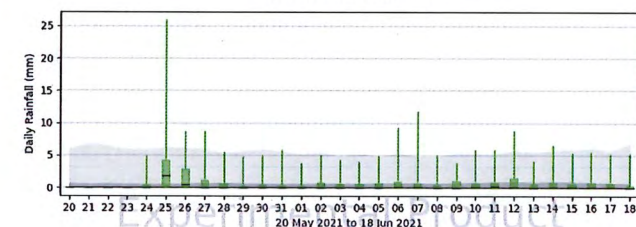
13



14

ACCESS S

Climagram: Daily Rainfall (mm) for Hobart Airport
Forecast starting 2021-05-20

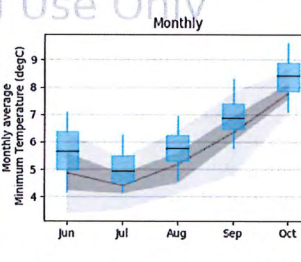
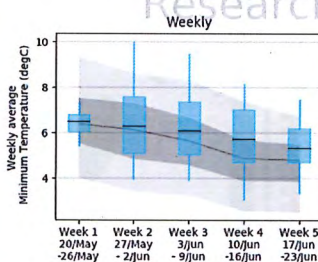
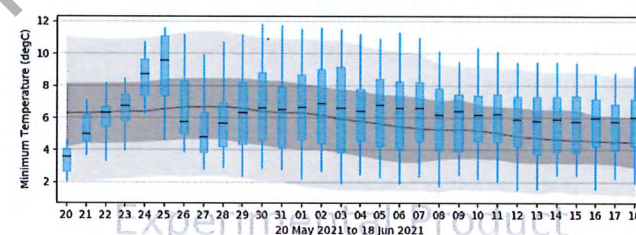


Climagram values use 5th, 25th, 75th and 95th Percentiles and the median. Grey shows AWAP 1980-2017 Climatology.

15

ACCESS S

Climagram: Minimum Temperature (degC) for Hobart Airport
Forecast starting 2021-05-20



Climagram values use 5th, 25th, 75th and 95th Percentiles and the median. Grey shows AWAP 1980-2017 Climatology.

16



Australian Government
Bureau of Meteorology

Forecast range and accuracy

- Good rule for most of the year – pretty good accuracy 4 days, tapering off 5-7 and beyond.
- Certain weather systems are more forecastable – less variation in dynamic possibilities.
 - Large slow moving Highs are good.
 - Fast moving or complex Lows are bad.
 - In Cyclone season, even cyclones in the Tropics can cause great variation in rainfall forecast in Tasmania.
- Winter and Summer MUCH better than spring and autumn.
- Forecasts for Today and Tomorrow by meteorologist, Days 2-7 automated using smart statistics and a consensus of multiple weather models. (we intervene for significant events).
- We can add this as a critical forecast watchpoint, to guide better detail in forecast.
- For further information or clarification call 62212022.

17



Australian Government
Bureau of Meteorology

Good links to have

- MetEye: <http://www.bom.gov.au/australia/meteye/>
- Climate Outlook: <http://www.bom.gov.au/climate/outlooks/#/overview/summary>

18



Notes and Actions – State Roads Emergency Response Group

Event: Rock – Paradise – Tasman Hwy
Date: 24 May 2021
2.23 Meeting Room, Salamanca Square Building and MS Teams
Notes prepared by: s 36
CM: D21/
Attendees: see Appendix A

Time: 11.00am

Scope: These notes record the agreed actions of the State Roads Emergency Response Group and a summary of discussion points.
 Members/attendees keep their own detailed/supporting notes as necessary.

FOR Circulation to all ERG members and Branch managers for circulation to staff

Item No.	Topic
I	<p>I.1 Aim: To understand and manage the risk of rock movement that has been determined may cause an issue on a section of the Tasman Hwy in the vicinity of Paradise Gorge and to minimise the impacts on people and property.</p>
	<p>I.2 Actions from previous meeting:</p> <p>Pitt and Sherry – Assign a PM</p> <p>Pitt and Sherry – Develop more detailed plan for an update today.</p> <p>s 36 – Advise Stornoway of information relating to weather triggers, procure Portable Weather Station</p> <p>s 36 – Follow up on contract requirements</p> <p>s 36 – Review TMP when made available, assess Wielangta Road for sign requirements if deemed a viable alternate route.</p> <p>s 36 – Assess Wielangta Road to determine what is required to make trafficable.</p> <p>s 36 – Continue progressing SCEP.</p> <p>s 36</p> <ul style="list-style-type: none"> • Contacted BOM to get advice and they are represented here today. • Contacted MRT to get advice and they have been in touch with P & S, and are represented here today. • Contacted MAST to get advice on how to prevent access to the waterway if road closed. • Contacted Pitt & Sherry re new Project manager <p>All meetings</p> <ul style="list-style-type: none"> • GM SR to update DecSec/Sec/Ministers office as necessary • No external briefings at this stage (State Growth EM Coord/EMSC) • All attendees to brief/updated direct reports/contractors as needed • AEMO to update notes from previous meeting as requested

Notes and Actions – State Roads Emergency Response Group

2	<p>Situation update – summary of current situation report and forecast from EM partners/BOM:</p> <p>I. 2.1 Weather conditions at this location – short and longer term forecast.</p> <p>Action – s 36 – send group presentation. See BoM presentation.</p> <p>Pitt and Sherry Update –</p> <p>s 36 – Understand once events occur to determine monitoring – scans or live instrumentation for gauging. Other areas have instrumentation to determine trigger levels, in particular movement.</p> <p>Different technologies readily available. Will require it for once work commences. If work commences in 4 weeks then monitoring eqpt unlikely to be effective, if works are beyond that then monitoring eqpt will be</p> <p>Discussions with Veris to discuss what options are available to measure tilt levels.</p> <p>Fault line through buttress – sometime in next ten years this could accelerate, one rock is concerning at this point. Additional scan for wider area required.</p> <p>Mines have good levels of eqpt to predict slippages</p> <p>Gorge is deteriorating over time due to movement of rock and slow frost jacking is creating issues. Breaks down over time and will continue to break down over time. High traffic area. Pinning in place may reduce toppling, once smaller rocks have been removed.</p> <p>Columns currently in water may have come from previous excavations in the creation of the road.</p> <p>Timeframes for works are subject to other factors involved in the removal, including resourcing and are there other rocks that may need to be removed. Monitoring equipment may better indicate when to restrict access on road.</p> <p>Saturday is forecast to be at a temperature which will force a road closure, and road will remain closed until works completed or monitoring equipment shows no evidence of movement. Plan is to consider a full road closure on Friday 28 May.</p> <p>MRT</p> <p>s 36 – key query performance – maintenance records past reports – P&S has better understanding – past performance and triggers. What does modelling tell us – this can prioritise what occurs. Monitoring eqpt needs to be safe from fire events.</p> <p>Activity in Paradise Gorge significant rain events, no columns have come down, however large boulders have fallen due to rainfall. This time the concern is about columns toppling.</p> <p>Landslip document to be drafted up.</p> <p>Pitt and Sherry – Action – Source monitoring equipment.</p> <p>Pitt and Sherry – Action – Develop scope of works.</p> <p>Pitt and Sherry – Action – draft up plan by tomorrow afternoon.</p>
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Notes and Actions – State Roads Emergency Response Group

	<p>Maintenance – Visual inspections have been ongoing and no events have triggered closure. No portable weather stations available. PWS may have portable stations. EPA may have stations.</p> <p>Road Assets – s 36 assessing and videoing travel on Wielangta Road.</p> <p>Bridges and Network Access</p> <p>s 36 has provided a detailed report on alternate routes.</p> <p>Projects – N/A</p> <p>Stakeholder Engagement – Continuing with progression of SCEP.</p>
3	<p>State Roads Situation Updates/Priorities</p> <p>3.1 Current status of infrastructure and services including any known impacts/damage/closures/concerns as per Appendix B</p>
	<p>3.2 Priorities</p> <ul style="list-style-type: none"> Maintenance Services <ul style="list-style-type: none"> s 36 – Action – Procure portable weather station. s 36 – Action – TMP – Stornoway. s 36 – Action – Alternate routes timings and timings. s 36 – Action – Contract requirements, options. Road Assets/Alternate Routes <ul style="list-style-type: none"> s 36 – Action – Provide a report on Wielangta Road as a viable transport option and the recommended levels of activity. Bridges – Investigation of heavy vehicle alternate routes. Network Management <ul style="list-style-type: none"> s 36 – Action – Review TMP when made available. Assess Wielangta Road for sign requirements if deemed a viable alternate route. Projects – N/A

Notes and Actions – State Roads Emergency Response Group

	<p>3.3 Emerging issues:</p> <p>Weather</p> <p>Availability and procurement of resources</p> <p>Alternate local route</p>
	<p>3.4 Messaging/stakeholder management:</p> <p>s 36 – Action – Continue progression of SCEP.</p> <p>Plan for – building understanding within the community about scale of works.</p> <p>Show people how we are going to do the work and what vision we can provide.</p> <p>Pitt & Sherry – Action – Allocate stakeholder engagement resource for community consultation.</p>
	<p>3.5 Safety:</p> <p>N/A</p>
4	<p>Agency Priorities</p> <p>4.1 Requests/issues referred to other areas:</p> <p>MRT are aware of issue.</p> <p>Minister's Office aware – s 36 have been informed.</p> <p>s 36 – Action – Arrange a tentative meeting Paradise Gorge for Wednesday with relevant stakeholders.</p>
	<p>4.2 Representation at mtgs eg EM Coordination Group:</p> <p>N/A</p>
	<p>4.3 Broader stakeholder communication issues</p> <p>No comms until plan is confirmed.</p>
5	<p>External Matters - REMCs/SEMC</p> <p>MRT</p> <p>Glamorgan Spring Bay Council</p> <p>Sorell Council</p> <p>Taswater</p> <p>MAST – when we close road advise MAST through email.</p>
6	<p>Other business: N/A</p>
7	<p>7.1 Lead personnel for next period: N/A</p>

Notes and Actions – State Roads Emergency Response Group

Appendix A

Attendees:

This list shows Emergency Response Group (ERG) members who attended this meeting. Attendance may change based on the nature of the event. The role of Chair may be delegated.



From: system@luciditysoftware.com.au
Sent: Sunday, 23 May 2021 10:12 AM
Subject: Tasman Highway Paradise Rock Buttress Inspection
Attachments: Tasman Highway Paradise Rock B.pdf

A Tasman Highway Paradise Rock Buttress Inspection Form has been completed

A copy is attached for your information.

Please login to Stornoway

ID [270]

Released under RTI

Doc 16:1

Tasman Highway Paradise Rock Buttress Inspection

Details

Form id	52542
Created at	23/05/2021 by s 36
Completed at	23/05/2021
Last modified	23/05/2021 10:06:51 by s 36
Status	Complete
Respondent	s 36
Division	Roads
Business unit	Roads South Base Services
Location	Brighton
Department	
Company	00 Stornoway
Location	



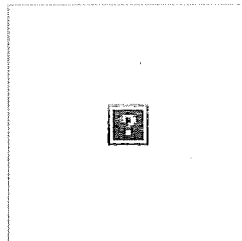
(-42.565237854624, 147.82458952085)

Time Onsite

10:01 AM

Photo Instructions

Photos are to be taken of all inspection points, road closure signage and any rock falls.



Comments

no rock debris in drain

Inspection Completed by:

s 36

Additional

Photos



Attachments

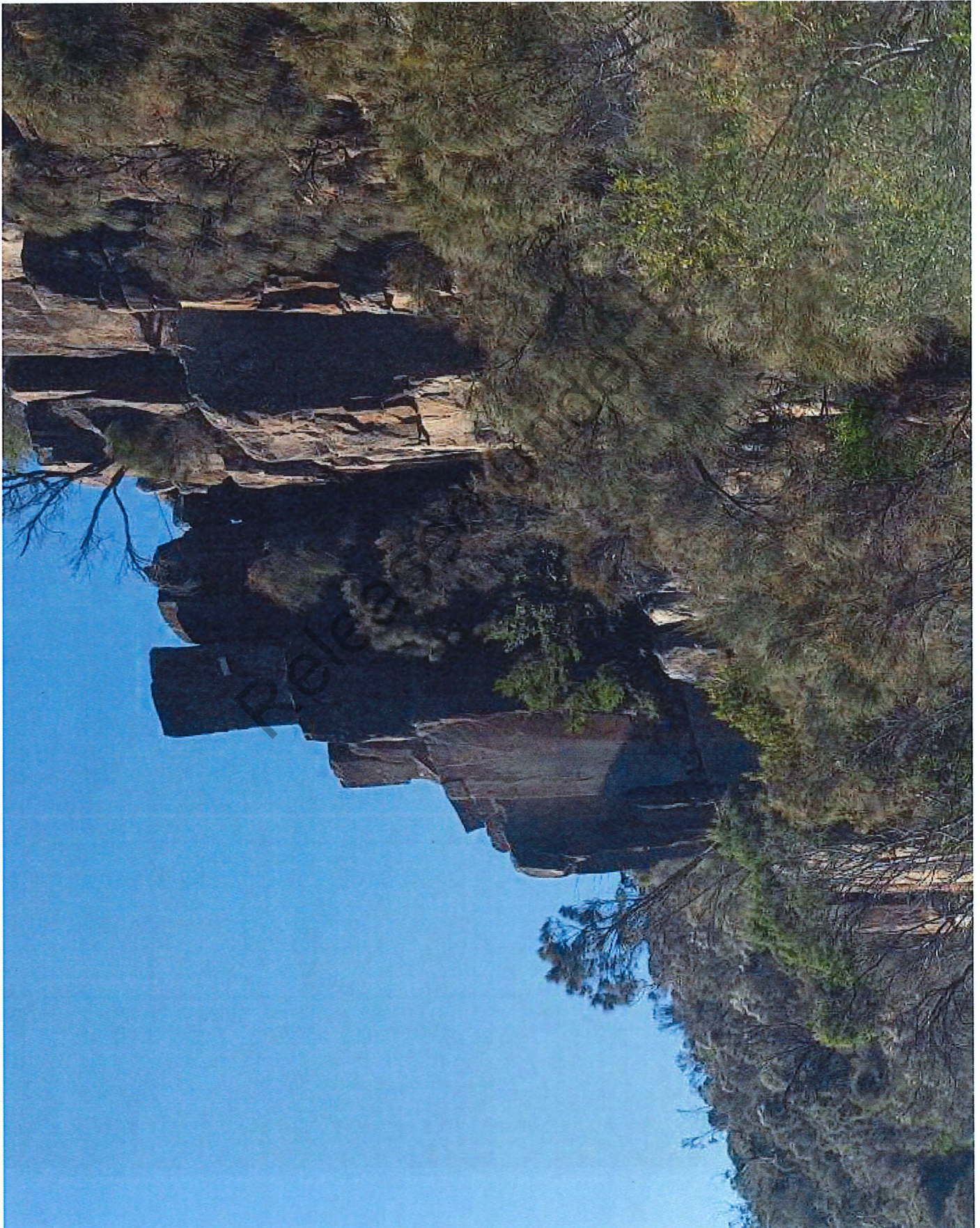
- No file attachments

Actions

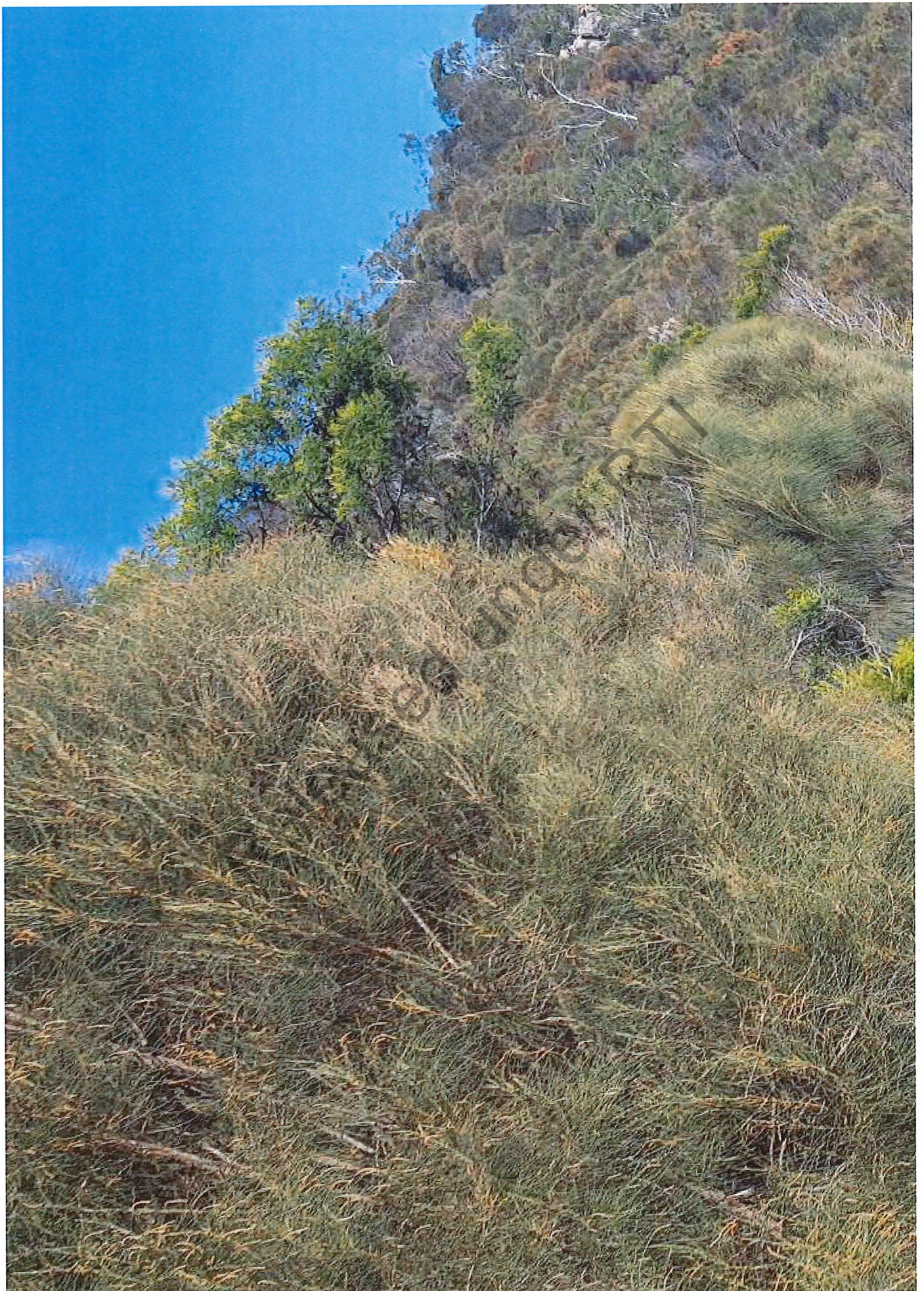
ID	First name	Last name	Due date	Date closed	Action description	Status	Last Comment
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Doc 17

From: s 36
Sent: Saturday, 22 May 2021 11:00 AM
To: s 36
Subject: Paradise







Doc 18

From: system@luciditysoftware.com.au
Sent: Saturday, 22 May 2021 10:26 AM
Subject: Tasman Highway Paradise Rock Buttress Inspection
Attachments: Tasman Highway Paradise Rock B.pdf

A Tasman Highway Paradise Rock Buttress Inspection Form has been completed

A copy is attached for your information.

Please login to Stornoway

ID [270]

Released under RTI

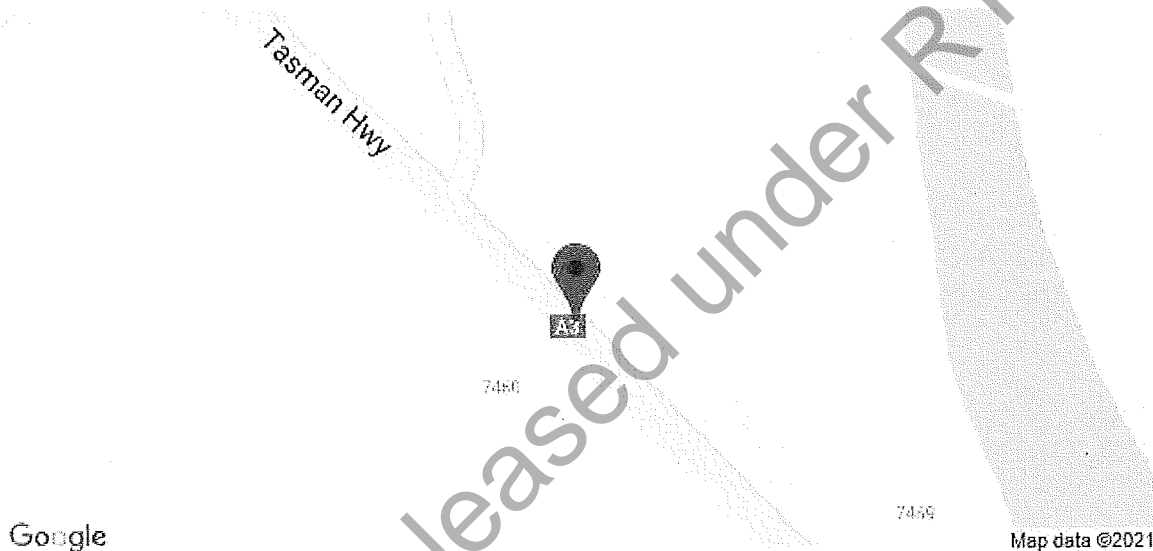
Doc 18:1

Tasman Highway Paradise Rock Buttress Inspection



Details

Form id	52534
Created at	22/05/2021 by s 36
Completed at	22/05/2021
Last modified	22/05/2021 10:25:12 by s 36
Status	Complete
Respondent	s 36
Division	Roads
Business unit	Roads South Base Services
Location	Brighton
Department	
Company	00 Stornoway
Location	



(-42.559495167872, 147.8499367862)

Time Onsite 10:23 AM

Photo Instructions

Photos are to be taken of all inspection points, road closure signage and any rock falls.

Comments no rock debris in drain

Inspection Completed by:

s 36

Additional

Photos

Attachments

- No file attachments

Actions

ID	First name	Last name	Due date	Date closed	Action description	Status	Last Comment
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Released under RTI

Doc 19

From: s 36
Sent: Friday, 21 May 2021 4:32 PM
To: s 36
Cc: s 36
Subject: Weather data and briefing for East Coast Tasmania

Follow Up Flag: Follow up
Flag Status: Completed

Hi s 36,

Thanks for the discussion.

As per our conversation the issue relates to boulders located adjacent to the Tasman Highway at Paradise Gorge just south of Orford.

We understand from geotechnical investigations that the risk of the boulder(s) falling increases if there is frost or rainfall sufficient to cause runoff. The consultant has estimated that this might be a temperature below 3 degrees, and rain of 5-10mm per hour for at least 2 hours, or 25mm in a day.

At this stage, we are utilising the weather forecast for Orford, which looks as if minimum temperatures for the week are 6 degrees or higher and rainfall is 0-2mm on a couple of days.

To confirm, we are after:

A better understanding of what conditions would cause frost (ie temperature below?, any other factors) and what conditions would cause runoff (xmm of rainfall in x hours if ground dry etc) – to confirm or add to the information we already have. We are using this as a trigger to close the road if necessary.

A better understanding of the likely relationship between temperature/rainfall at this location as opposed to the existing weather stations (we will try to arrange for a temporary weather station to be in place asap)

A briefing on the longer range forecast – re minimum temperatures and rainfall for the next 3 months

An understanding of the range and accuracy of the forecast information (or any likely outliers).

I think that's it at this stage.

It would be great if someone was available for the briefing on Monday, I will send the details through, otherwise we can make another time that suits

Many thanks for your assistance

Cheers

s 36

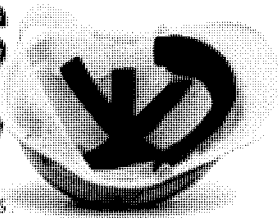
Salamanca Building, Parliament Square
4 Salamanca Place, Hobart, TAS 7000 | GPO Box 536, Hobart TAS 7001

s 36

www.stategrowth.tas.gov.au

**YOUR SPEED IS
OUR SAFETY**

SLOW DOWN FOR ROAD WORKERS



s 36

Released under RTI

Doc 20

From: s 36
Sent: Friday, 21 May 2021 3:45 PM
To: s 36
Cc: s 36
Subject: RE: Paradise
Attachments: Paradise Road Closure TGS.pdf

G'day,

Please find attached TMP. We also have the two VMB's at the Mornington depot ready for deployment. Can you please advise on the wording so we can pre program them.

Could you please provide some clarification.

- The daily inspecting we are only inspecting the table drain for any new loose material?
- Daily weather monitoring information requirements and requirements for an onsite weather station?
- What will be the protocol for closing the road if 25mm+ rain is forecast?
- If loose material is found on the daily inspection what would be the triggers and protocol for road closure?
- Stategrowth will undertake the stakeholder management?

Any issues please give me a call.

Cheers,

s 36

From: s 36
Sent: Thursday, 20 May 2021 1:00 PM
To: s 36
Cc: s 36
S 36
Subject: RE: Paradise

G'day s 36

We currently have a crew on route to undertake work to remove any of the loose material at the toe of the rock buttress. The will give as a base line for tomorrows inspection.

The Stornoway traffic team are currently working on TMP and methodology for a road closure. We are also trying to source VMB's to deploy as soon as possible. Can you please advise on the wording for these?

We are reviewing the best point to close the road, lucky it appear there are no permanent private residents that will be directly affected. TasWater do have a facility that will be affected, will the Departments stakeholder team consult with them regarding access if the road was to be closed?

s 36 will undertake weather inspections daily at 3.00pm based on Orford's weather forecast <http://www.bom.gov.au/tas/forecasts/orford.shtml>. s 36 will advise you of any frost warnings or heavy rain prediction. The weather looks to be ok for the next few days at this stage.

You will receive an email notification when we have inspected the area from our lucidity system. This will have the time, who inspected it and a photo of the area. Please let me know if you would like any further info in these. If we

identify any loose material we will notify you immediately and any major falls we will implement the road closure and await further instructions.

I will provide the TMP once completed.

Can we please have a Minor Works order to start capturing costs against?

Any issues give me a call anytime.

Cheers,

s 36

s 36

stornoway 

employer
of choice

YOUR SPEED IS
OUR SAFETY
NOT BEAT FOR ROAD WORKERS



 Please consider the environment before printing

From: s 36

Sent: Thursday, 20 May 2021 11:43 AM

To: s 36

s 36

Cc: s 36

Subject: Paradise

This message was sent from outside your organisation. Do not click links or open attachments unless you know the content is safe.

Thanks for chatting about this matter earlier below is a summary and request.

1. Monitor section of road through paradise gorge daily visually
2. Monitor weather station as close to site as available for heavy rainfall, frost/ice events
3. Daily reporting of these matters
4. Develop TMP for road closure both ends and methodology if access to either end is shut off, e.g. VMB's activated until physical road closure equipment can be placed.
5. Initial clean up below buttress to ascertain starting point for inspections.
6. All these points to be put into action immediately please.

Please keep this matter in house at the present.

Regards

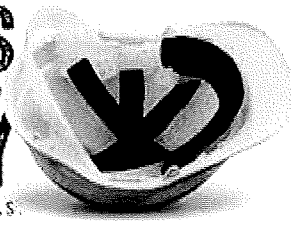
s 36

s 36

4 Salamanca Place Hobart 7000

YOUR SPEED IS
OUR SAFETY

SLOW DOWN FOR ROAD WORKERS.



My current work pattern is as follows:

In Office/Field all days

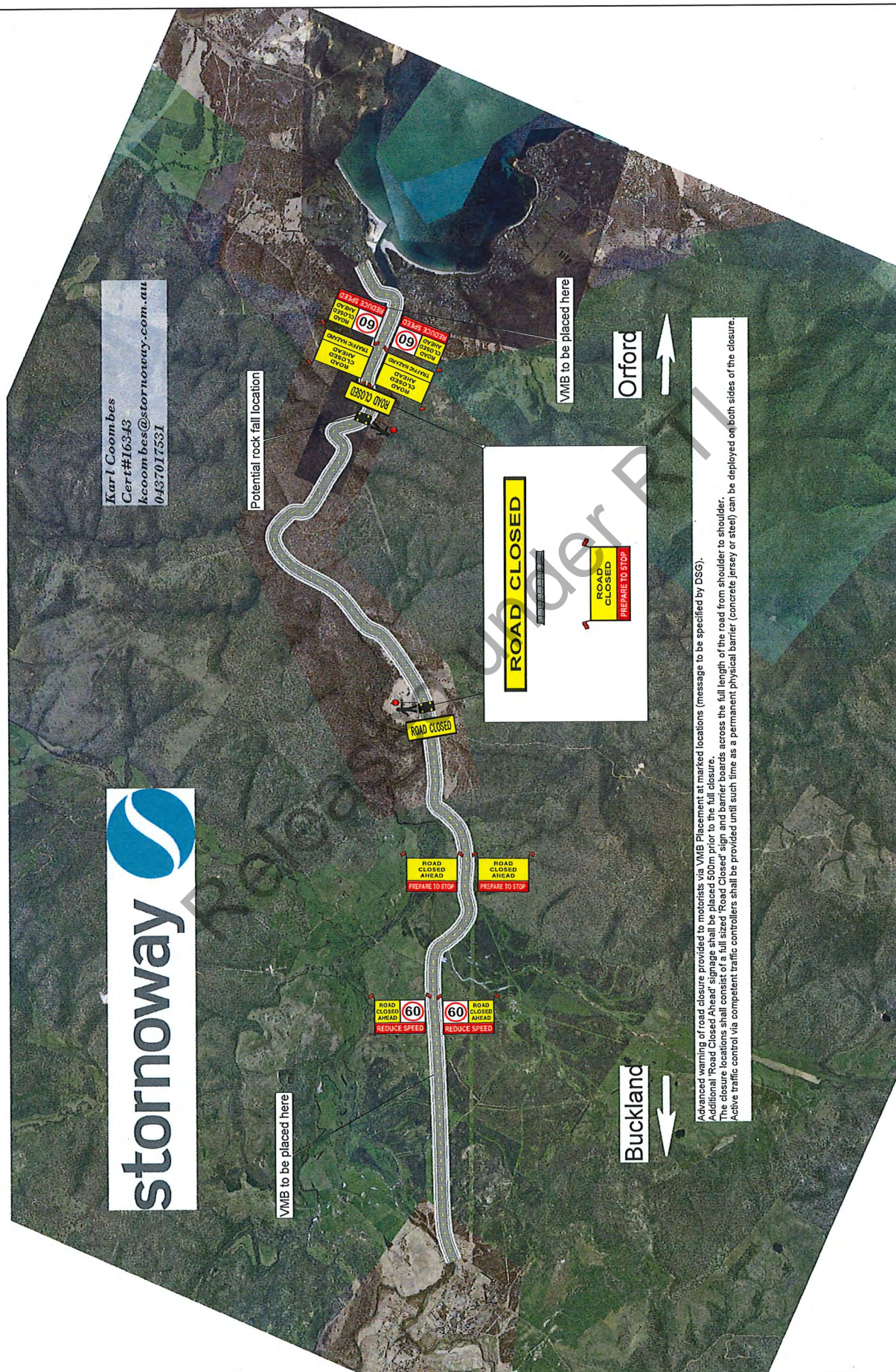
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Released under RTI



Karl Coombes
Cert#16343
kcoombes@stornoway.com.au
0437017531



Advanced warning of road closure provided to motorists via VMB Placement at marked locations (message to be specified by DSG).

From: system@luciditysoftware.com.au
Sent: Friday, 21 May 2021 7:58 AM
Subject: Tasman Highway Paradise Rock Buttress Inspection
Attachments: Tasman Highway Paradise Rock B.pdf

A Tasman Highway Paradise Rock Buttress Inspection Form has been completed

A copy is attached for your information.

Please login to Stornoway

ID [270]

Released under RTI

Doc 21:1
Tasman Highway Paradise Rock Buttress Inspection

Details

Form id	52468
Created at	21/05/2021 by s 36
Completed at	21/05/2021
Last modified	21/05/2021 07:58:17 by s 36
Status	Complete
Respondent	s 36
Division	Roads
Business unit	Roads South Minor Works
Location	Brighton
Department	
Company	
Location	

Google

(-42.5572679, 147.8600759)

Time Onsite

07:50 AM

Map data ©2021

Photo Instructions

Photos are to be taken of all inspection points, road closure signage and any rock falls.



Comments

no rockfall in drain

Tasman Highway Paradise Rock Buttress Inspection



Inspection Completed by:

s 36

Released under RTI

Additional

Photos







Attachments

- No file attachments

Actions

Tasman Highway Paradise Rock Buttress Inspection



ID	First name	Last name	Due date	Date closed	Action description	Status	Last Comment
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Released under RTI

From: s36
Sent: Friday, 21 May 2021 7:58 AM
To: s36
Subject: Paradise Gorge Rock Photos
Attachments: 20210128_101256.jpg; 20210128_101311.jpg; 20210128_101321.jpg; 20210128_101401.jpg; 20210128_101404.jpg; 20210128_101541.jpg; 20210128_101604.jpg; 20210128_101632.jpg; 20210128_101737.jpg; 20210128_102026.jpg; 20210128_105214.jpg; 20210128_105217.jpg; 20210128_105220.jpg; 20210128_111055.jpg; 20210128_111059.jpg; 20210128_111103.jpg; 20210128_111106.jpg; 20210128_111110.jpg; 20210128_111120.jpg; 20210128_111903.jpg; 20210128_111905.jpg; 20210128_111923.jpg; 20210128_111936.jpg; 20210128_111943.jpg; 20210128_111947.jpg; 20210128_112058.jpg; 20210128_112112.jpg; 20210128_112115.jpg; 20210128_112118.jpg; 20210128_112124.jpg; 20210128_112130.jpg; 20210128_112141.jpg; 20210128_112239.jpg; 20210128_112244.jpg; 20210128_112406.jpg; 20210128_112410.jpg; 20210128_112413.jpg; 20210128_112416.jpg; 20210128_112433.jpg; 20210128_112435.jpg; 20210128_112446.jpg; 20210128_112539.jpg; 20210128_112542.jpg; 20210128_112806.jpg; 20210128_112808.jpg; 20210128_112809.jpg; 20210128_112812.jpg; 20210128_112814.jpg; 20210128_112818.jpg; 20210128_112834.jpg; 20210128_112836.jpg; 20210128_112843.jpg; 20210128_115317.jpg; 20210128_115323.jpg; 20210128_115332.jpg; 20210128_115915.jpg

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20210128_101311
20210128_101321
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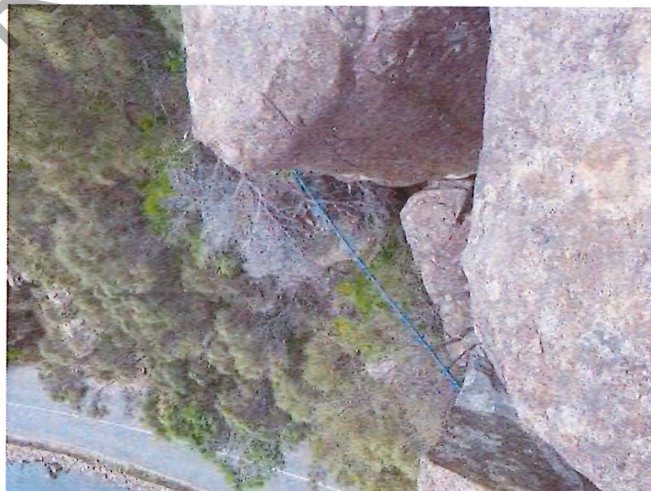


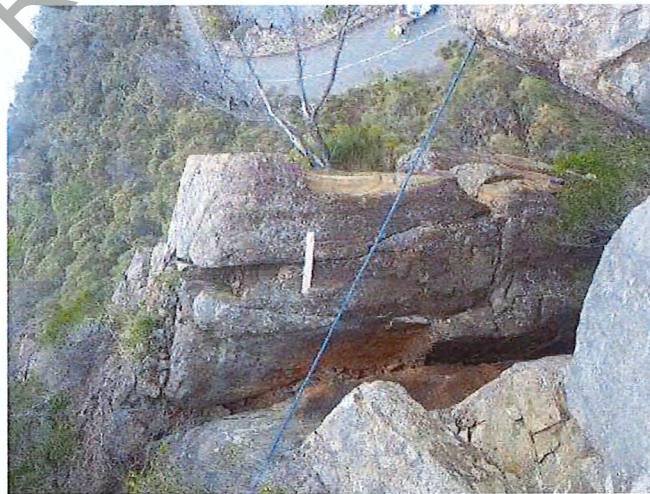
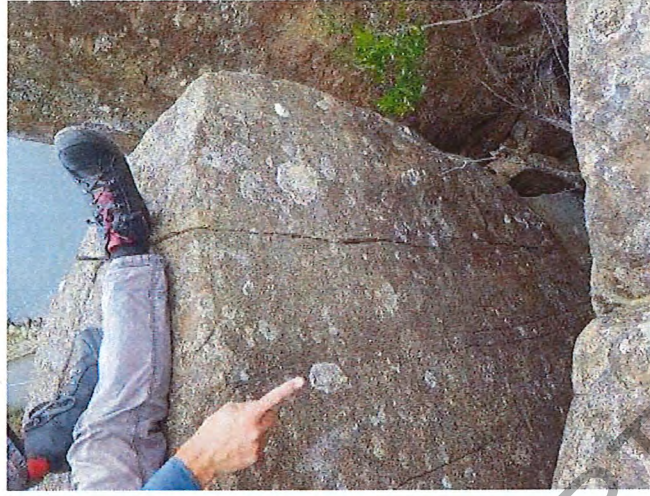
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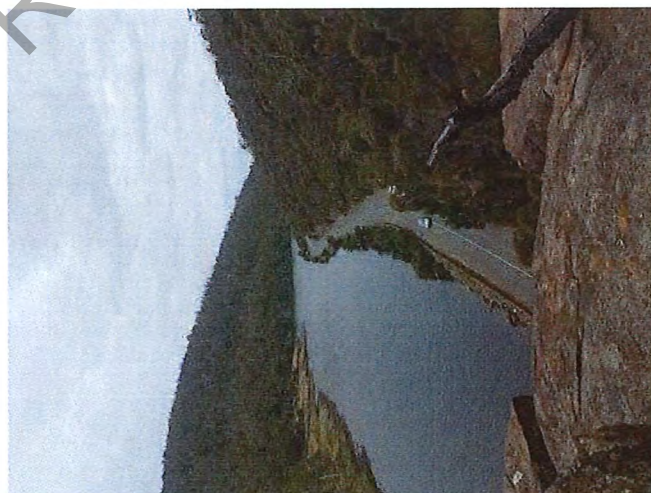
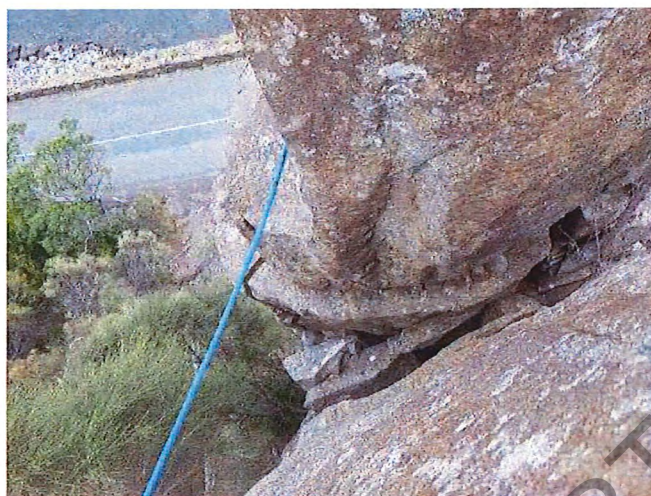




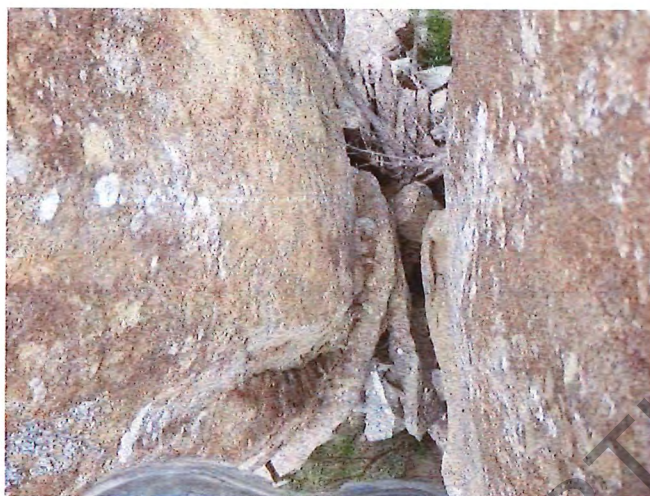


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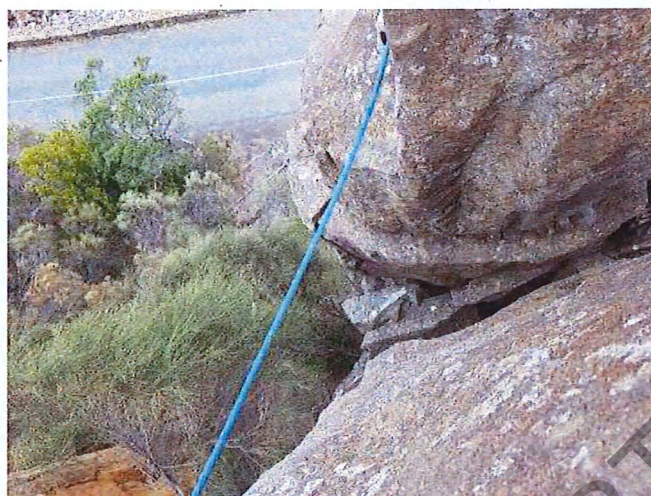


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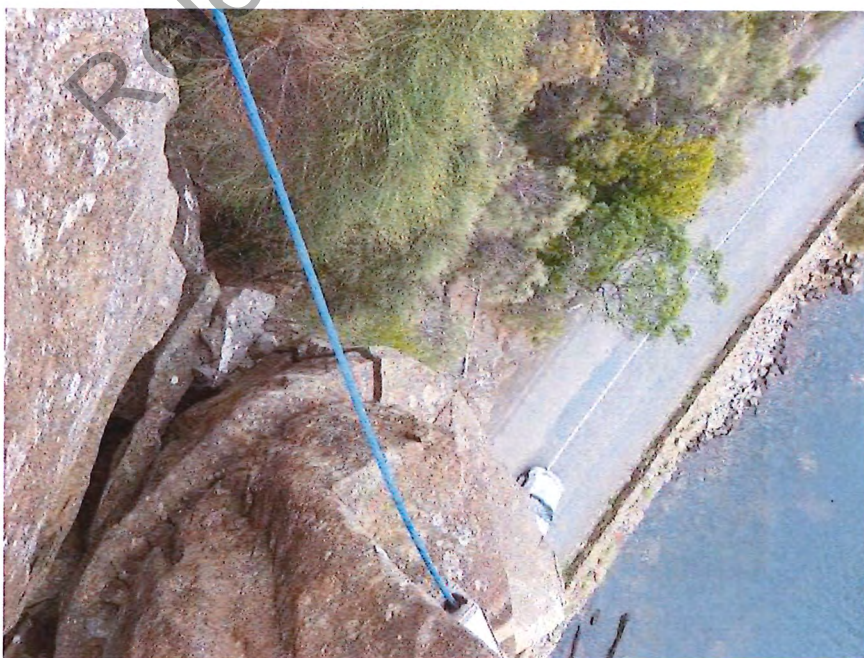


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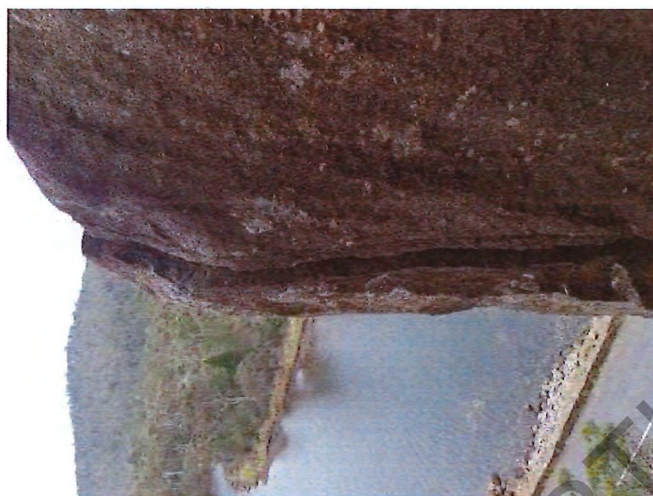




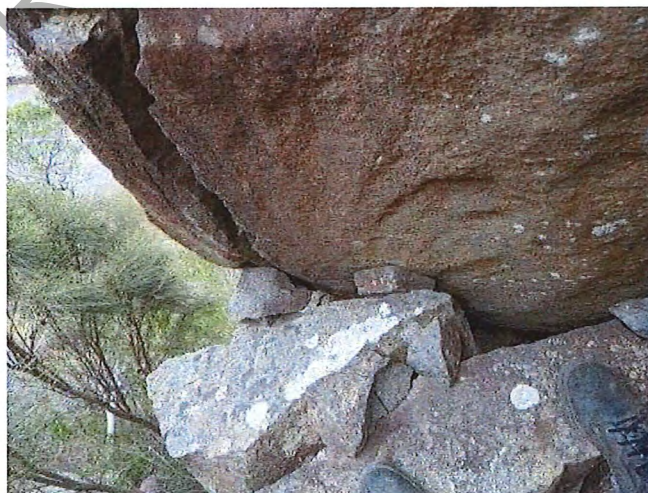
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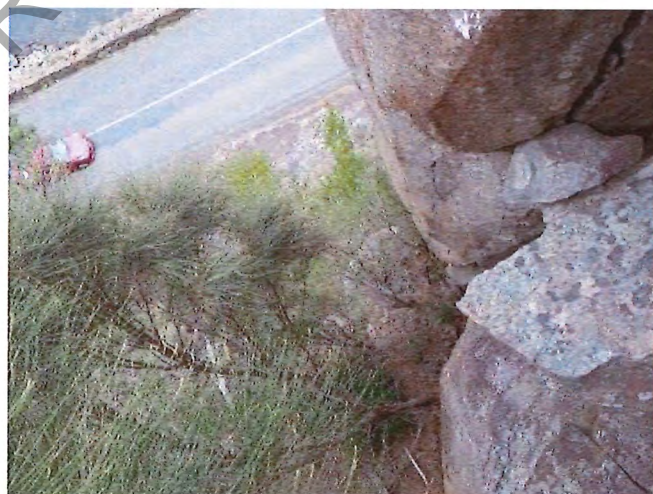


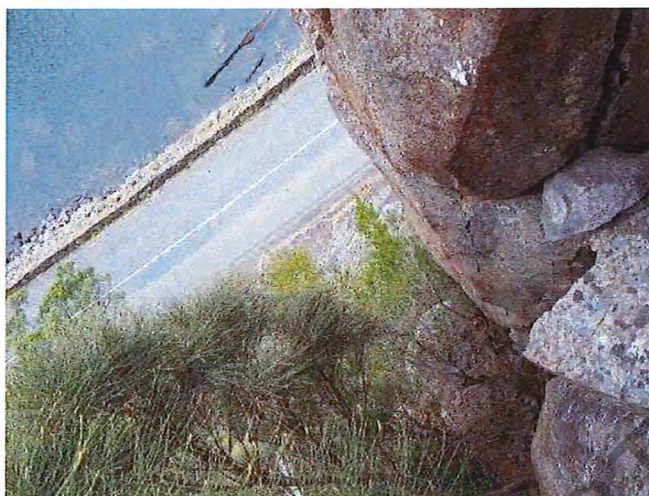
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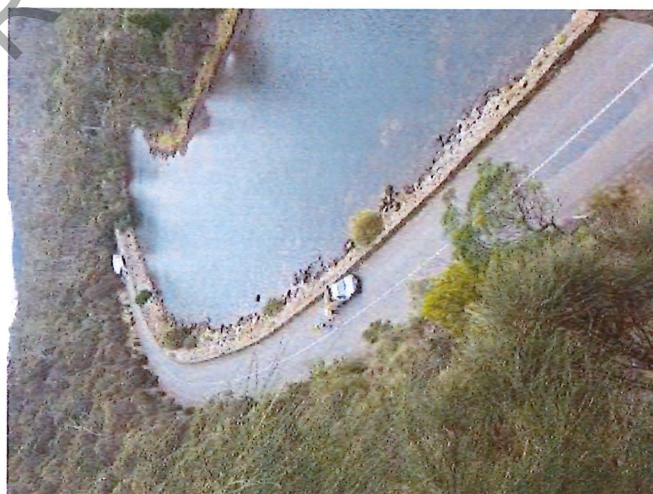


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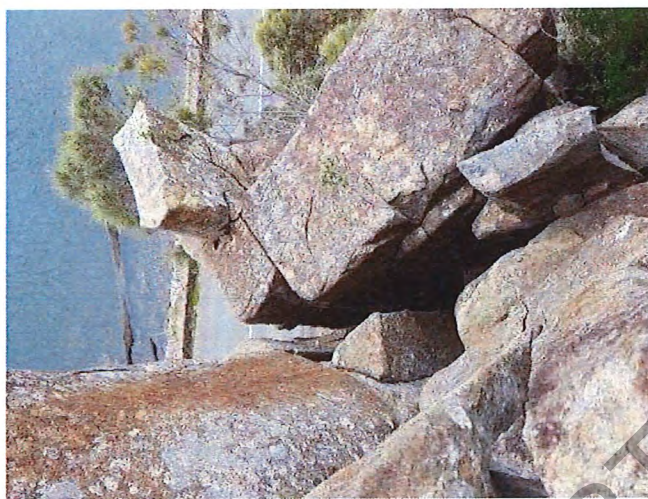


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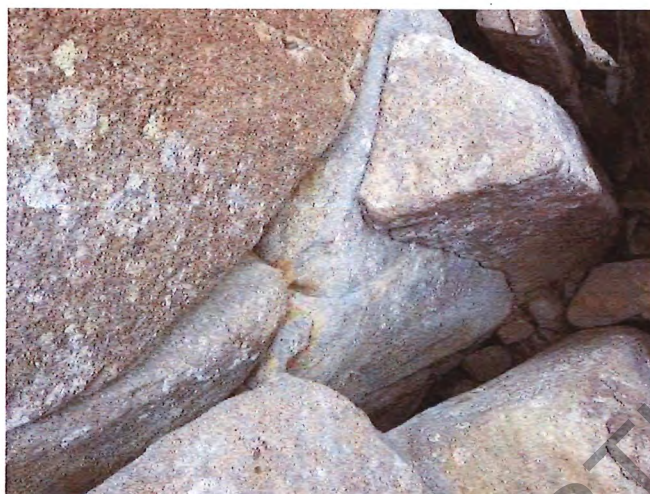


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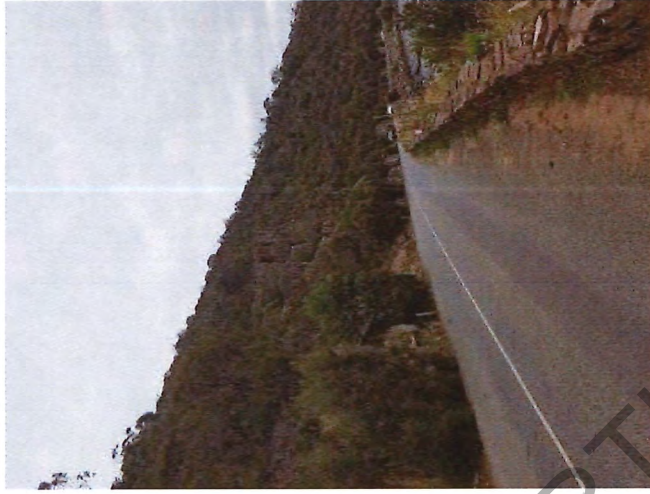




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Notes and Actions – State Roads Emergency Response Group

Event: Rock – Paradise – Tasman Hwy
Date: 21 May 2021
4.30 Meeting Room, Salamanca Square
Building and MS Teams
Notes prepared by: S 36
CM: D21/
Attendees: see Appendix A

Time: 11.00am

Scope: These notes record the agreed actions of the State Roads Emergency Response Group and a summary of discussion points.
 Members/attendees keep their own detailed/supporting notes as necessary.

FOR Circulation to all ERG members and Branch managers for circulation to staff

Item No.	Topic
1	<p>1.1 Aim: To understand and manage the risk of rock movement that has been determined may cause an issue on a section of the Tasman Hwy in the vicinity of Paradise Gorge and to minimise the impacts on people and property.</p>
	<p>1.2 Actions from previous meeting: noted</p> <p>All meetings</p> <ul style="list-style-type: none"> • GM SR to update DecSec/Sec/Ministers office as necessary • No external briefings at this stage (State Growth EM Coord/EMSC) • All attendees to brief/updated direct reports/contractors as needed • AEMO to update notes from previous meeting as requested
2	<p>Situation update – summary of current situation report and forecast from EM partners/BOM:</p> <p>2.1 No weather trigger, visible movement or rocks.</p> <p>Maintenance - Discussions Stornoway about TMP – in development, issues with map sizing, advised to do intersections. Stornoway are procuring a portable weather station to put in the area.</p> <p>Bridges - NA</p> <p>Stakeholder Engagement - SCEP – work in progress, lot of work has been done, further information from today's meeting will feed into completed document.</p> <p>Key messages for this phase if enquiry about closure of road and what we would be doing including alternate routes. Working through action list – dependant on lead time, some newspaper, media releases, social media, using REMC to get messages out. More info required about other Stakeholders required. Wording around safe vs unsafe – State Roads are managing an identified risk. Change in risk level – changing our actions. Current message about road is – it is trafficable, as we are managing the risk.</p>

Notes and Actions – State Roads Emergency Response Group

	<p>Pitt and Sherry</p> <p>Drones and laser surveillance of the area was considered to be the most efficient and least impactful method of surveying the area. This work has identified a significant risk of rock slippage, this rock would need to be removed to ensure stability and a safe and trafficable environment. Further investigation in the area is required. It is anticipated that the removal of the rock would be completed in two stages.</p> <p>Stage 1 – safe line attached, remove loose rocks and foliage to determine access and priority for removal. Partial and intermittent lane and road closures for one week to complete work. This time is also expected to scope out work required for full removal of the rocks.</p> <p>Stage 2 – jersey barriers and pea gravel in place for removal of larger rocks. Heritage wall is expected to be protected by the jersey barriers and pea gravel. Removal of the larger rocks is expected to be completed by use of airbags. Breakdown of rocks for cartage would be drilled and blasted under control. It is expected that a significant amount of rock will fall into the river. This stage of work is expected to take up to 12 weeks. A factor affecting the works will be the winter weather and may affect up to 30% of the time. A full road closure would be required during this stage.</p> <p>Observation of the activity by the public should be discouraged on land and in the adjacent river. PWS may need to be advised for closure of the watercourse in area.</p> <p>Water pipe in the area was considered to not be in the area of impact.</p> <p>Advice of weather events is rainfall that could create runoff or that is up to 10mm of rain per hour or 20mm over a day will be significant enough to require a road closure. If using the Orford weather station a temperature at or below 3 degrees would be considered enough to cause frost in the vicinity of affected area and require a road closure.</p> <p>Pitt and Sherry – Action – Assign a Project Manager and provide s 36 with details.</p> <p>Pitt and Sherry – Action – Develop more detailed plan to update the group on Monday</p> <p>Spidertech indicated that resourcing for the work should not be an issue.</p>
3	<p>State Roads Situation Updates/Priorities</p> <p>3.1 Current status of infrastructure and services including any known</p>

Notes and Actions – State Roads Emergency Response Group

	impacts/damage/closures/concerns as per Appendix B
	<p>3.2 Priorities</p> <ul style="list-style-type: none"> • Maintenance Services <p>TMP and portable weather station Stornoway.</p> <p>s 36 – Action – BOM information required. Advise Stornoway of new information relating to weather triggers.</p> <p>s 36 – Action – Follow up on contract requirements.</p> <ul style="list-style-type: none"> • Bridges – Investigation of heavy vehicle alternate routes. • Traffic Signals – N/A • Network Management – s 36 – Action -Review TMP when made available. Assess Wielangta Road for sign requirements if deemed a viable alternate route. • Projects – N/A • Sealing/linemarking – s 36 – Action – Assess Wielangta Road to determine what is required to make it trafficable. • Landslip etc
	<p>3.3 Emerging issues:</p> <p>Awaiting further information from P&S – Project Manager, ongoing reports from Stornoway.</p> <p>Tas Water may be affected.</p> <p>River – PWS may need to be notified to ensure no one is using the watercourse during works.</p>
	<p>3.4 Messaging/stakeholder management:</p> <p>s 36 – Action – Continue progressing SCEP.</p> <p>Wait on input from s 36 on when to release comms internally.</p> <p>No broader agency comms until a plan is released.</p> <p>Wording around safe vs unsafe – State Roads are managing an identified risk.</p> <p>Change in risk level – changes our actions.</p> <p>Current message about road is – it is trafficable, as we are managing the risk.</p>

Notes and Actions – State Roads Emergency Response Group

	3.5 Safety: N/A
4	Agency Priorities 4.1 Requests/issues referred to other areas:
	4.2 Representation at mtgs eg EM Coordination Group:
	4.3 Broader stakeholder communication issues
5	External Matters - REMCs/SEMC MRT Glamorgan Spring Bay Council Sorell Council Taswater
6	Other business: N/A
7	7.1 Lead personnel for next period – s 36 – MRT? – representative from BoM?

Notes and Actions – State Roads Emergency Response Group

Appendix A

Attendees:

This list shows Emergency Response Group (ERG) members who attended this meeting.

Attendance may change based on the nature of the event. The role of Chair may be delegated.



Doc 24

From: s 36
Sent: Thursday, 20 May 2021 2:40 PM
To: s 36
Cc:
Subject: RE: Paradise Gorge Next Steps

Hi s 36

Please see below for response to s 36 query.

As discussed in the meeting the pitt&sherry assessment provided for the risk level of the road is that it falls into the ARL1 category. This is the highest level of risk rating in the RMS Slope Risk Analysis Methodology.

In relation to your query for confirmation that the road only needs to be closed if the weather is wet/frosty, movement is detected, or rocks are detected on the road at the location, unfortunately pitt&sherry are unable to provide this definitive advice and ultimately the decision to close the road or not rests with DSG. However, if there was no significant rain, no frost, no movement and no rocks on the road then our assessment is that the risk may be reduced to the ARL3 category.

To assist DSG, I am attempting to contact someone who has provided and installed movement monitoring at mine sites to get an idea of how quickly movement monitoring could be installed.

Cheers, s 36

pitt&sherry

s 36

Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | Phone +61 3 6210 1400
pittsh.com.au

**Celebrating pitt&sherry's first Reflect
Reconciliation Action Plan.**

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pitt&sherry acknowledge the Aboriginal and Torres Strait Islander people as the Traditional Custodians of country on which we live and work. We pay our respects to the Traditional Custodians and Elders past, present and emerging, and recognize their continuing connection to land, water and community.

From: s 36
Sent: Thursday, 20 May 2021 12:28 PM
To: s 36
Subject: FW: Paradise Gorge Next Steps

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

s 36 can you confirm s 36 query below please?

s 36

From: s 36
Sent: Thursday, 20 May 2021 12:23 PM
To: s 36
Subject: RE: Paradise Gorge Next Steps

Thanks, s 36

That sounds good. It would also be good to get P & S to confirm their advice on the current risk level in fine weather conditions and that the road only needs to be closed if the weather is wet/frosty, movement is detected, or rocks are detected on the road at this location.

Cheers

s 36

From: s 36
Sent: Thursday, 20 May 2021 12:17 PM
To: s 36
Subject: FW: Paradise Gorge Next Steps

s 36 can you confirm these actions below

s 36

From: s 36
Sent: Thursday, 20 May 2021 11:54 AM
To: s 36
Cc: s 36
Subject: Paradise Gorge Next Steps

Hi s 36

I just want to confirm what P&S is doing for the Paradise Gorge situation.

Our immediate concerns are:

1. An interim plan for what to do until such time as we can drop the rocks. This will need to include traffic management, trigger points, how to obtain and verify those trigger points, anything else that arises as we work on it.
2. A timeline as to when the rocks can be dropped.

Slightly less urgently, a methodology and so on for dropping of the rocks, and a cost estimate for the works and so on.

I am assuming at this point that we will be engaging SpiderTech, unless you would like to do it directly. Either way is fine.

We will need to work out some paperwork at some point regarding all the terms and conditions and contracts and so on, but that isn't the most urgent thing at this point.

Could you please confirm my understanding and maybe give us a more comprehensive brief at some stage (in case I missed anything during the meeting), just so we make sure that there aren't any gaps.

Thanks!

Cheers, **s 36**

pitt&sherry

s 36

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Doc 25

From: s 36
Sent: Thursday, 20 May 2021 11:54 AM
To: s 36
Cc:
Subject: Paradise Gorge Next Steps

Follow Up Flag: Follow up
Flag Status: Completed

Hi s 36

I just want to confirm what P&S is doing for the Paradise Gorge situation.

Our immediate concerns are:

1. An interim plan for what to do until such time as we can drop the rocks. This will need to include traffic management, trigger points, how to obtain and verify those trigger points, anything else that arises as we work on it.
2. A timeline as to when the rocks can be dropped.

Slightly less urgently, a methodology and so on for dropping of the rocks, and a cost estimate for the works and so on.

I am assuming at this point that we will be engaging SpiderTech, unless you would like to do it directly. Either way is fine.

We will need to work out some paperwork at some point regarding all the terms and conditions and contracts and so on, but that isn't the most urgent thing at this point.

Could you please confirm my understanding and maybe give us a more comprehensive brief at some stage (in case I missed anything during the meeting), just so we make sure that there aren't any gaps.

Thanks!

Cheers, s 36

pitt&sherry

s 36

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Doc 26

From: s 36
Sent: Thursday, 20 May 2021 12:09 PM
To: s 36
Subject: RE: Paradise

Follow Up Flag: Follow up
Flag Status: Flagged

Perfect ☺

From: s 36
Sent: Thursday, 20 May 2021 12:08 PM
To: s 36
Subject: RE: Paradise

Confirmed

From: s 36
Sent: Thursday, 20 May 2021 11:54 AM
To: s 36
Cc: s 36
Subject: RE: Paradise

Thanks s 36

And have you clarified that they will close the road immediately and let us know if there are any rocks on the road in this area?
Just checking

Cheers

s 36

From: s 36
Sent: Thursday, 20 May 2021 11:43 AM
To: s 36
Cc: s 36
Subject: Paradise

Hello s 36

Thanks for chatting about this matter earlier below is a summary and request.

1. Monitor section of road through paradise gorge daily visually
2. Monitor weather station as close to site as available for heavy rainfall, frost/ice events
3. Daily reporting of these matters
4. Develop TMP for road closure both ends and methodology if access to either end is shut off, e.g. VMB's activated until physical road closure equipment can be placed.
5. Initial clean up below buttress to ascertain starting point for inspections.
6. All these points to be put into action immediately please.

Please keep this matter in house at the present.

Regards

s 36

s 36

YOUR SPEED IS
OUR SAFETY

SLOW DOWN FOR ROAD WORKERS



My current work pattern is as follows:
In Office/Field all days

Released under RTI

Notes and Actions – State Roads Emergency Response Group

Event: Rock – Paradise – Tasman Hwy
Date: 20 May 2021
4.30 Meeting Room, Salamanca Square
Building and MS Teams
Notes prepared by: S 36
CM: D21/115558
Attendees: see Appendix A

Time: 12.30pm

Scope: These notes record the agreed actions of the State Roads Emergency Response Group and a summary of discussion points.
 Members/attendees keep their own detailed/supporting notes as necessary.

FOR Circulation to all ERG members and Branch managers for circulation to staff

Item No.	Topic
1	<p>1.1 Aim: To understand and manage the risk of problematic rock movement that has been determined may cause an issue on a section of the Tasman Hwy in the vicinity of Paradise Gorge and to minimise the impacts on people and property.</p> <p>1.2 Actions from previous meeting: N/A All meetings</p> <ul style="list-style-type: none"> • GM SR to update DecSec/Sec/Ministers office as necessary • No external briefings at this stage (State Growth EM Coord/EMSC) • All attendees to brief/updated direct reports/contractors as needed • AEMO to update notes from previous meeting as requested
2	<p>Situation update – summary of current situation report and forecast from EM partners/BOM:</p> <p>1.3 P&S provided updated information regarding rock buttress at Paradise Gorge on the Tasman Highway that had been monitored. Original assessment was that the risk was manageable and there was no need to remove the rocks, however additional information collected by drone to produce 3d modelling has indicated that the area is not stable – raised risk level to a higher degree with winter approaching. Suggestion has been for removal of 60 to 100t of rock.</p> <p>1.4 Stornoway been requested to provide inspections daily, get the closest BOM tower alert level.</p> <p>1.5 In meantime a portable weather station may be appropriate.</p> <p>1.6 Stornoway are conducting an inspection today and ongoing visual inspections, if there are concerns then they are instructed to close the road immediately – they will report this afternoon, they are under roster 7 days a week – weather and situation reports by 3.15pm daily.</p> <p>1.7 Planning time will be required, indication of one to two weeks to complete works – full road closure would be required.</p> <p>1.8 Pitt and Sherry are still analysing information and undertaking more detailed modelling – we are awaiting confirmation from them of when the work could be</p>

Notes and Actions – State Roads Emergency Response Group

	<p>scheduled.</p> <p>1.9 No date confirmed for works.</p> <p>1.10 P&S have indicated that the risk is manageable in fine weather, however if temperature drops to frost level, significant rainfall occurs (level to be determined), other rocks are found on road that indicates movement, or other movement is detected, this would indicate a change in the risk level. If one of those conditions exist then road to be closed immediately by Stornoway.</p> <p>1.11 VMBs to be prepared to show closure of the road, and bollards to be deployed.</p> <p>1.12 Current long term forecast (next 7 days) appearing positive – minimum temperatures at 5 degrees or higher and no significant rain (1-2mm only).</p> <p>1.13 Awaiting P&S to report further information by tomorrow.</p> <p>1.14 Alternate routes – Wielangta Road may require work to ensure trafficable.</p> <p>1.15 Upon closure of the Tasman an assessment would be undertaken to determine when it could be reopened after the rocks are removed.</p> <p>1.16 Between 50 to 75m of the road could be affected, primary risk, there may be other areas of concern.</p>
3	<p>State Roads Situation Updates/Priorities</p> <p>3.1 Current status of infrastructure and services including any known impacts/damage/closures/concerns as per Appendix B</p> <p>In fine weather P&S not concerned with closing road, unless the following four issues arise</p> <ul style="list-style-type: none"> • temperature drops to frost level; • significant rain fall or weather event (what this is – to be determined by P&S); • other rocks found on road or spoon basin that indicates movement; • or any other movement is detected. <p>In the event of none of those four exist then road is considered trafficable, if one of those conditions exist then road to be closed immediately.</p> <p>Current long term weather forecast appears positive.</p> <p>When and if road is closed it has been determined that the road will not be reopened until such time as the rock has been removed and road is deemed trafficable.</p>
	<p>3.2 Priorities</p> <ul style="list-style-type: none"> • Maintenance Services <p>Maintenance contractors and staff ready, have identified areas of concern, including:</p> <ul style="list-style-type: none"> ○ Transport to Triabunna and other areas of the SE region that is generally

Notes and Actions – State Roads Emergency Response Group

	<p>served from the south.</p> <ul style="list-style-type: none"> o s 36 – Action – detour – ready to go signs – check with Stornoway to see if sufficient signage and have signs made and ready to be deployed after TMP. Ensure Stornoway has VMB's ready to be deployed (but not placed on or near the site yet). • Bridges – alternate route, transport industry to be informed, a couple of projects on Tasman Hwy north of area – Sheas Creek works nearly completed. • Traffic Signals – N/A • Network Management – Signposting of the alternate routes, being done as far south as Sorell. Stornoway will be conducting sign posting in short term. P&S to provide TMP and signage for long term. <p>Network Management action is to ensure signs are sufficient and will not impose on other works in the Sorell area and cause confusion.</p> <ul style="list-style-type: none"> • Projects – Nothing to report, other road projects may cause issues particularly in Sorell area, consideration of both static and VMB. • Sealing/linemarking – pea gravel to be put down to protect existing pavement – potential for damage to seal. <p>s 36 - Action : Wielangta Road may have to be made trafficable – last assessment conducted – s 36 and PWS may have been involved. What will be required to make trafficable. What sort of lead time?</p> <ul style="list-style-type: none"> • Landslip etc
	<p>3.3 Emerging issues:</p> <p>Awaiting further information from P&S in next day or two, ongoing reports from Stornoway.</p> <p>Removal of buttress – heritage wall Glamorgan Spring Bay council may have some input.</p> <p>Tas Water may be affected.</p>
	<p>3.4 Messaging/stakeholder management:</p> <p>Sooner rather than later, number of consultants and contractors aware of this so media could be advised.</p> <p>Rock movement identified as being an issue January after heavy rains, so Department requested consultants identify risk.</p> <p>Timing – will the report be enough to be able to go out to all stakeholders.</p> <p>Decision making – may close due to rain or frost, debris on road or weather event will close road and remain closed until fixed.</p> <p>Stornoway will be prepared to deploy signs and VMBs immediately.</p>

Notes and Actions – State Roads Emergency Response Group

	<p>Other Signage – Signs will be de-identified.</p> <p>Wielangta Road – will be assessed to identify what condition is and what will be required for it to make trafficable.</p> <p>s 36 Action: draw up a SCEP to capture all stakeholder issues.</p>
--	---

Released under RTI

Notes and Actions – State Roads Emergency Response Group

	<p>3.5 Safety:</p> <p>Traffic management will be the key issue, TMP to meet standards and be easy to understand.</p>
4	<p>Agency Priorities</p> <p>4.1 Requests/issues referred to other areas:</p> <p>Transport/Heavy Vehicle industry, Passenger Transport, REMC, Councils, SES, Police, Fire, Ambulance, businesses.</p> <p>s 36</p> <p>s 36 - Action: Inform Gary, Kim today and Minister's office tomorrow.</p>
	<p>4.2 Representation at mtgs eg EM Coordination Group:</p> <p>N/A</p>
	<p>4.3 Broader stakeholder communication issues</p> <p>N/A</p>
5	<p>External Matters - REMCs/SEMC</p> <p>N/A</p>
6	<p>Other business:</p> <p>N/A</p>
7	<p>7.1 Lead personnel for next period – resourcing</p> <p>As per this mtg.</p>
	<p>Next meeting – late morning early afternoon 21 May 2021. Pitt and Sherry to be invited.</p>

Notes and Actions – State Roads Emergency Response Group

Appendix A

Attendees:

This list shows Emergency Response Group (ERG) members who attended this meeting.

Attendance may change based on the nature of the event. The role of Chair may be delegated.

S 36

Released under

Memo

To **s 36**
From **s 36**
Date 19 May 2021
RE Rock Buttress at Paradise Gorge - Second Interim Report

This memo is an interim report following partial receipt of drone footage, photographs and a preliminary model.

Overview

The recently acquired drone footage and preliminary 3D model has highlighted that there is significant crushing and degradation along defects further down the buttress than the boulder with the restraining wire. Some of the crushed material has failed away from the base of the columns, resulting in an unstable situation.

It is our assessment that failure here is likely to happen within the next ten years; that is not to say in ten years' time, it could be any time within that period. It will most likely be triggered either by heavy rain or frost. Given the level of damage here the assessment by our Senior Principal Geotechnical Engineer is that the likelihood of failure here is now in the "Probable" to "Likely" range, and may be approaching "Almost Certain". A rough run through the RMS Slope Risk Assessment methodology therefore results in an ARL1; the highest risk level in the methodology.

We recommend action as a matter of urgency to reduce the risk to users of the road.

Drone Footage, Preliminary Model and Discussion

The drone footage and model indicates that there are a number of defects that angle towards the road at around 20° on which crushing is occurring. This crushing is caused by weight and movement of the columns above; as the column becomes unstable more pressure is imparted by the front of the column, crushing the rock beneath. That rock then tends to fall out, transferring the pressure on to the next set of rock back, which then also crush. This undermining will gradually lead to toppling.

The columnar joints are also not vertical, typically leaning towards the road by about 5°, but increasing to up to 15° in some areas where jacking and infill by broken rock has occurred.

An additional factor to the crushing is the formation of cracking within the columns, likely due to the uneven weight distribution. These cracks, together with the standard columnar jointing, provide access for water which can either wash out small fragments and further weather the rock, or also potentially freeze and jack the cracks open. Roots can cause similar damage.

The most likely failure scenarios are either further loss of material from under the columns leading to collapse (heavy rain most likely) or toppling due to jacking (either ice or roots).

Following is an image of the model looking east, followed by a number of images taken from the drone.

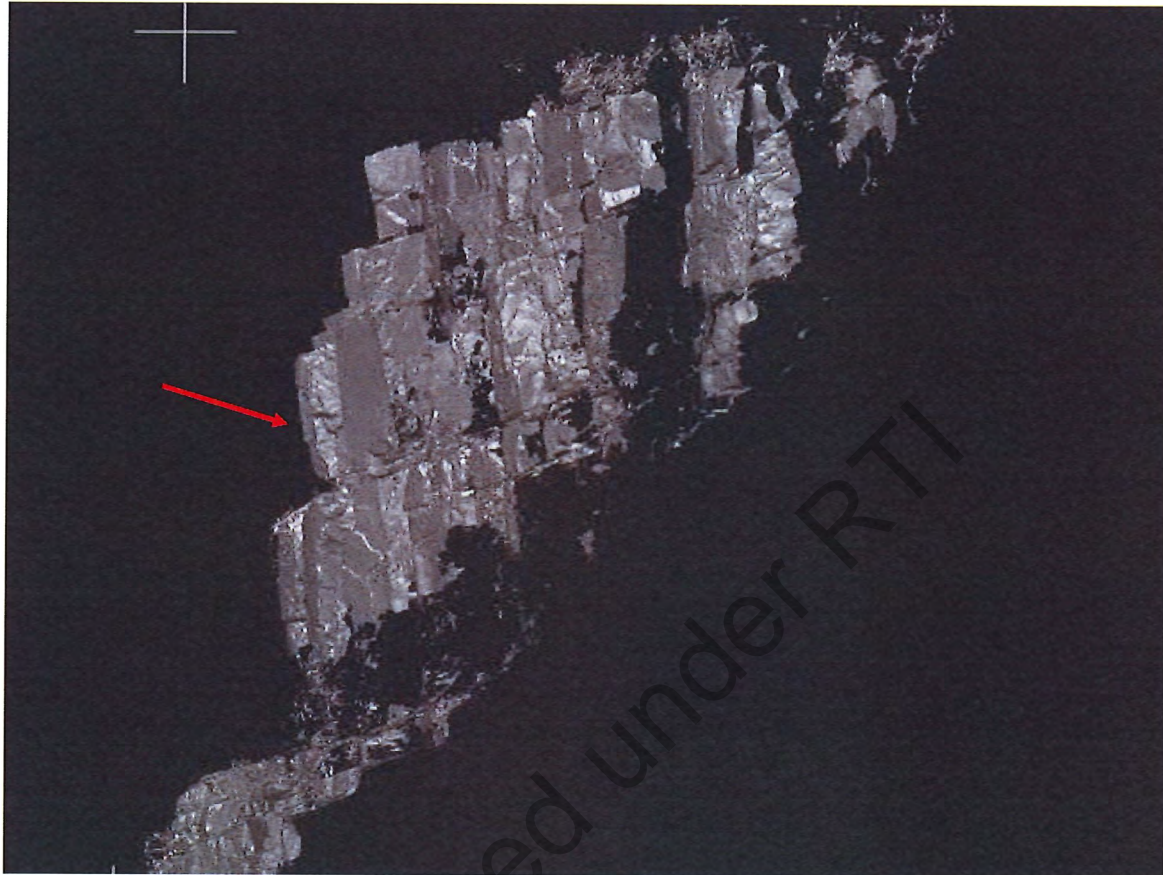


Figure 1: View of 3D model of buttress looking east; arrow indicates column of interest in Figures 2 and 3



Figure 2: Undercut column with curving defect behind and crushed rock beneath



Figure 3: Undercut column pictured in Figure 2 from different angle; detail on crushed rock at base



Figure 4: Wider view of buttress



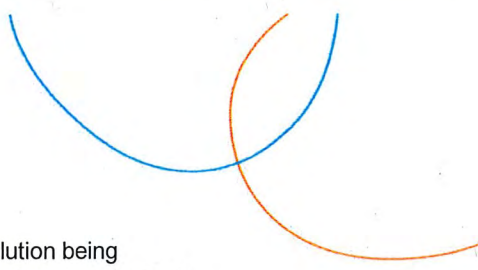
Figure 5: Top view of buttress; note open cracking



Figure 6: Buttress of interest back left; second buttress middle ground. More open cracking at top.

We recommend that urgent discussions are held with the aim of deciding on practical solutions for both the short and long term cases at the site. We anticipate that the following points will need to be discussed / considered:

- Discuss whether further drone survey is required further west along the buttress.
- Discuss the best long term solution for the buttress. It is our assessment that there are no sufficiently stable anchor points on the buttress to allow restraint of the rocks, and as such bringing down the unstable rocks is the most appropriate approach. If this approach is to be taken, then we would suggest the following steps:
 - Set up rope access lines (we suggest SpiderTech as they set up the last inspection and were also involved in bringing rocks down from this buttress last time and could provide valuable advice).
 - Inspection by someone with experience in bringing down large rocks above roads (as mentioned above, SpiderTech were involved in bringing down the rocks previously removed from this buttress. Additionally, pitt&sherry have experience in bringing down large dolerite rocks, including at Ben Lomond and Mount Wellington).
 - It is anticipated that the road may need to be closed for up to two weeks. Previous experience suggests that it would be prudent to cover it with pea gravel (deep enough to protect the heritage wall or remove heritage wall prior to works) and then drop any identified columns using air bags under geotechnical supervision. It is recommended that the column that is currently being restrained would be removed at that time. A road closure of this duration is likely to require alternative access to the Orford area being upgraded / undergoing maintenance.
 - It is likely that scaling would be required after the large columns are dropped.
 - Following scaling and geotechnical inspection the debris from the dolerite columns and the gravel could be removed and the road could be reopened, however installation of some form of restraint (likely rock netting) may be required to reduce the chance of further failures and slow the progress of deterioration of the buttress.
 - Ongoing inspections are likely to be required; it is recommended that these be undertaken by drone and using an initial survey as a baseline.

- 
- Discuss the best short term solution for risk to road users prior to the long term solution being implemented. Short term closures of the road may be required. Risk may increase during periods of adverse conditions such as heavy rain or frost, one or other of these is likely to be the condition that triggers failure of one of the columns. Such a solution would require consideration of the following:
 - Exact conditions under which high risk of failure is expected.
 - Whether the conditions should be identified through forecasting or by monitoring; if monitoring, then
 - Monitoring equipment to identify when the high risk conditions occur at the site
 - Where the road should be closed to enable safe turning.

We look forward to discussing the above in the planned meeting.

Released under RTI

The following site observations and photographs are reproduced from the previous memorandum following a site visit and access to the buttress using ropes.

Site Observations

There is a substantial gap between the boulder that is restrained and the buttress behind. The crack is close to 1m wide at the top and around 0.5m wide at the base of the boulder. The crack continues down the column to lower boulders in the stack, gradually narrowing with depth.



Figure 7: View of crack behind restrained boulder



Figure 8: View down crack at back of restrained boulder

There is a substantial accumulation of rocks and other debris within the crack.



Figure 9: View from within the crack; taken a little below the base of the restrained boulder

There are substantial cracks separating the columns which form the part of the buttress immediately behind the column topped by the restrained boulder. These are typically in the 200-300mm range at the top of the buttress, and also extend to depths greater than 3m and are typically filled with rock fragments and soil. Defects lower down the buttress are also very open.



Figure 10: Open defects lower down buttress (restrained boulder is above boulder in upper left of photo)

Subhorizontal defects observed on the buttress are also substantially open and typically contain many small rocks separating the larger boulders.



Figure 11: View under restrained boulder



Figure 12: View of end of restraining wire on western side of boulder

Yours sincerely

s 36

Released under RTI

Doc 30

From: s 36
Sent: Wednesday, 5 May 2021 10:29 AM
To: McIntyre, Denise
Subject: Paradise gorge rock

Categories: For Noting

Hi Denise

FYI the drone work has been completed, the consultants now need to work on the raw data to prepare a 3D model, then use that along with their other observations to come up with some recommendations on risk management.

Likely another 2 weeks before we will get the report

Cheers

s 36

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Doc 31

From: s 36
Sent: Tuesday, 13 April 2021 5:40 PM
To: s 36
Cc:
Subject: RE: Paradise Rock Buttress

Hi s 36

Sorry for the delay, it took a while to find out when things are planned for.

Veris are planning to do the drone inspection this Thursday or Friday (15th or 16th). They will be controlling the drone from a boat on the river and will not be interfering with traffic.

If you need any other details please let me know.

Cheers s 36

pitt&sherry

s 36

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pitt&sherry acknowledge the Aboriginal and Torres Strait Islander people as the Traditional Custodians of country on which we live and work. We pay our respects to the Traditional Custodians and Elders past, present and emerging, and recognize their continuing connection to land, water and community.

From: s 36
Sent: Tuesday, 30 March 2021 7:34 AM
To: s 36
Cc: s 36
Subject: Paradise Rock Buttress

Hi s 36

Do you have a definite time frame for the drone inspection of rock buttress on paradise gorge?

Regards

s 36

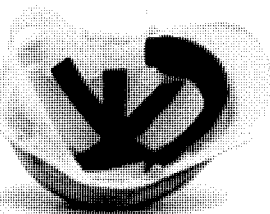
s 36

4 Salamanca Place Hobart 7000

s 36

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My current work pattern is as follows:
In Office/Field all days

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Doc 32

From: s 36
Sent: Wednesday, 31 March 2021 4:14 PM
To: s 36
Cc: s 36
Subject: RE: Tasman Highway - Boulder

Categories: s 36

Dear s 36

I refer to your letter of 30 March regarding the boulder adjacent to the Tasman Highway at Paradise Gorge and our recent discussion.

As per our discussion, the Department of State Growth engaged an engineering firm to do an inspection of the boulder, the restraining chain, and the surrounding area in January 2021.

The interim report which found that there were no obvious signs that the boulder is at risk of falling in the near future, and that the current restraining system doesn't show any signs of visible damage or distress.

After the recent severe weather events, the Department's maintenance contractors inspected the boulder from the road and there was no indication of movement. A smaller rock in the same general area did fall after this weather event, and landed safely without causing any impact to the road or road users.

The maintenance contractor will continue to do a visual inspection of the boulder as part of routine weekly inspections of the Tasman Highway.

As recommended in the report, the Department is commissioning 3D modelling to gather more information about the boulder and the surrounding area. Based on the modelling, the consultant will develop options and recommendations for ongoing management of the site. This is expected to be completed by early April 2021. The Department will review the options and recommendations and act as necessary.

I am happy to provide you with an update on the consultant's findings and recommendations once these are received.

If you have any further questions, please do not hesitate to get in touch

Cheers

s 36

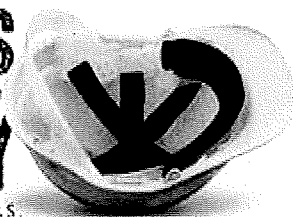
Salamanca Building, Parliament Square
4 Salamanca Place, Hobart, TAS 7000 | GPO Box 536, Hobart TAS 7001

s 36

www.stategrowth.tas.gov.au

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My current work pattern is as follows:

s 36

s 36

From: s 36

Sent: Tuesday, 30 March 2021 4:31 PM

To: s 36

Subject: Tasman Highway - Boulder

Dear s 36

Please find attached a self-explanatory letter regarding the boulder. I understand you are across the issue.

Regards,

s 36



Released under RTI

Doc 33

From: s 36
Sent: Wednesday, 31 March 2021 3:50 PM
To: State Roads Corporate Mail
Subject: FW: Tasman Highway - Boulder
Attachments: Tasman Highway Boulder.pdf

Categories: s 36

FYI

I will respond directly and essentially say the same as the response to the TTC (which they could have simply shared with Council anyway)

Cheers

s 36

From: s 36
Sent: Tuesday, 30 March 2021 4:31 PM
To: s 36
Subject: Tasman Highway - Boulder

Dear s 36

Please find attached a self-explanatory letter regarding the boulder. I understand you are across the issue.

Regards,

s 36

s 36

Doc 33:1



9 Melbourne Street (PO Box 6)
Triabunna TAS 7190

s 36

✉ admin@freycinet.tas.gov.au

🌐 www.gsbc.tas.gov.au

Attention **s 36**

30/03/2021

Department of State Growth

Salamanca Building, Parliament Square

GPO Box 5364

Hobart, TAS 7000

Dear **s 36**

Tasman Highway Orford – Boulder over Highway

Council has received an enquiry from Colin H.Howlett, the Chair, Tasmanian Transport Council and Chair of Concerned Farmers & Rural Communities with respect to the looming presence of the boulder just south west of Orford on the Tasman Highway.

Mr Howlett has advised that the Tasmanian Transport Council, has received repeated concerns about a large rock being restrained by a wire cable, South of the Prosser Bridge. It has been recommended to that group that a certified Engineer, be engaged to provide Certification of the cable and its position.

Council, through its visitor centres also received many enquiries and concerns from tourists about the safety of the road given the somewhat perilous state of the restrained rock. We commend the concerns of the Transport Council to you for consideration.

s 36

Doc 34

From: s 36
Sent: Friday, 26 March 2021 12:45 PM
To: s 36
Cc:
Subject: FW: Rockfall - Tasman Highway - Paradise
Attachments: 25032021 rock fall.docx

Importance: High

Hello s 36

Please see email below sent to me this morning.
I have also attached the defect raised in the system.

s 36

From: s 36
Sent: Friday, 26 March 2021 9:31 AM
To: s 36
Subject: Rockfall - Tasman Highway - Paradise
Importance: High

Hi s 36

FYI a large rock approx. 1m2 fell at Paradise and was identified during the storm event earlier in the week.

The fallen rock was in close proximity to the large braced / reinforced rock along the cliff face at Paradise.

The fallen rock was identified (See DN92872) and removed yesterday by the MW crew.

Any questions please let me know.

Cheers,

s 36


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WORK INSTRUCTION / ORDER



Doc 34:1

Defect Information				
Defect Number	DN92872	Date Raised	25/03/2021	
Defect Type	Potential Minor Works	Response Time	0.0	
Primary Location	A0113	Target Date		
Location	20	Estimated Qty	500.00	
Description	Large rock fallen from rock brace storm damage march 2020			
Rectification Information				
Work Team	██████████	Completion Date		
Work Group	MINOR WORKS	Actual Quantity		
Activity	B05.04A	Team Leader		
Time Worked		Signed		
Comments				
Audit Trail				
1. Date Raised		6. Date Received		
2. Date Printed		7. Received by		
3. Date Issued		8. Input to Reflect by		
4. Issued to		9. Date Input		
5. Work Completed		10. Further Action (Y/N)		
Comments				



<MAP>

Location of Defect

Doc 35

Minister for Finance
Minister for Infrastructure and Transport
Minister for State Growth
Minister for Science and Technology
Leader of the House

Level 5, 4 Salamanca Place, Hobart
Public Buildings, 53 St John Street, Launceston
GPO Box 123, HOBART TAS 7001
Phone: (03) 6165 7701; Email: Michael.Ferguson@dpac.tas.gov.au



25 MAR 2021

Mr Colin Howlett
Chair
Tasmanian Transport Council
By email: s 36

Dear Mr Howlett

I refer to an email of 9 March 2021 from the Office of the Hon Jane Howlett MLC, Member for Prosser, regarding contact you made with her office about a boulder at Paradise Gorge. As the Minister for Infrastructure and Transport, I am responding to you on behalf of the Tasmanian Government.

The Department of State Growth has advised me that they engaged an engineering firm to do an inspection of the boulder, the restraining chain, and the surrounding area in January 2021.

They have received an interim report which found that there are no obvious signs that the boulder is at risk of falling in the near future, and that the current restraining system does not show any signs of visible damage or distress.

As recommended in the report, the Department is commissioning 3D modelling to gather more information about the boulder and the surrounding area. Based on the modelling, the consultant will develop options and recommendations for ongoing management of the site. This is expected to be completed by early April 2021. The Department will review the options and recommendations and act as necessary.

I understand that the Department intends to provide the Tasmanian Transport Council with an update on the content of the interim report in the near future.

I trust this information is of assistance to you.

Yours sincerely

Michael Ferguson MP
Minister for Infrastructure and Transport

cc Hon Jane Howlett MLC, Liberal Member for Prosser



DEPARTMENT OF STATE GROWTH

Dept. Ref MIG21/275
Critical Date 22 March 2021

NOTED	
SIGNED:	
DATE:	17/3/2021

Issues Briefing Note for the Minister for Infrastructure and Transport

SUBJECT: TASMAN HIGHWAY - PARADISE GORGE ROCK BUTTRESS

Minister's notation:

Background:

Throughout the last 6 to 12 months the Department of State Growth has received inquiries from a number of stakeholders raising concerns about a boulder and its restraints on the Tasman Highway approximately 1.5 kilometres south of Orford. This area is known as Paradise Gorge.

A previous Issues Brief was provided to you in December 2010 and is at Attachment A.

Current Situation:

Pitt and Sherry undertook an engineering inspection of the boulder, restraints and the immediate area of the supporting buttress utilising ropes to access the bank adjacent to the Tasman Highway in January 2021.

The consultant's interim report indicates that there are no obvious signs that failure is imminent and notes that the existing restraining system shows no obvious signs of distress.

The Department does not have records of the original works to install the restraining system, so has been unable to make any definitive assertions on change in condition or position since the original installation some 20 years ago.

The consultant has recommended utilising a drone to undertake 3D modelling of the boulder and supporting buttress, to gather additional information on the scale and risk of potential failure. Based on this, the consultant will develop options and recommendations for appropriate ongoing risk management of the site. The Department has instructed the consultant to proceed with this additional work. It is expected that this will be completed by early April 2021.

Once this has been completed, the Department will review the report and recommendations and action as necessary. No other action has been recommended at this time.

Financial Implications:

Consultancy fees: upper limit \$10 000.
Any recommendations from the report will be costed.

Communications Strategy:

An update on the information provided in the interim report and next steps will be provided to Glamorgan Spring Bay Council and the Tasmanian Transport Council, who both raised the issue with the Department last year.

s36

Denise McIntyre
General Manager, State Roads

15 March 2021

Prepared by:	s 36	Cleared by:	s 36
Position:		Position:	
Email:		Email:	
Phone:		Phone:	

Attachments:

Attachment A – Issues Brief

Released under RTI

From: s 36
Sent: Wednesday, 10 March 2021 9:53 AM
To: secretariat
Subject: MIN21/6785 : ELECTORATE - HOWLETT - INFRA & TRANS - Constituent - Colin Howlett regarding Tasman Highway Bolder and requesting report from State Roads indicating boulder is safe
Attachments: ELECTORATE - HOWLETT - ~ Colin Howlett regarding Tasman Highway Bolder and requesting report from State Roads indicating boulder is safe.MSG
Categories: s 36

Good Morning

Can a PR please be provided for Minister Ferguson with a cc to Minister Howlett

Due 17.03.2021

Thanks

s 36

-----< Content Manager record Information >-----

Record Number:MIN21/6785

Title:ELECTORATE - HOWLETT - INFRA & TRANS - Constituent - Colin Howlett regarding Tasman Highway Bolder and requesting report from State Roads indicating boulder is safe

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Doc 37:1

From: s 36
Sent: Tuesday, 9 March 2021 12:03 PM
To: Howlett, Minister
Subject: Constituent - Colin Howlett - Tasman Highway Bolder

Dear s 36

Minister Howlett was contacted by Colin Howlett, Chair of the Tasmanian Transport Council (TTC), regarding concerns expressed by TTC members for a boulder on the rock face bordering the Tasman Highway at Paradise Gorge.

Colin said that he and TTC members are concerned as the boulder is being supported by a wire cable that appears to be very poorly positioned as it is supporting the bottom third of the boulder, rather than being positioned in a more stable location in the middle or towards the top.

The TTC has been advised by s 36 that State Roads' maintenance contractors inspect the road regularly and have been requested to report any movements of the boulder and to take any actions necessary to ensure it is safe, however the TTC is not satisfied with this response.

The TTC has been asked by industry and members of the public to ensure that people using the road are not being placed at unnecessary risk.

The TTC is requesting that it be provided with a report from State Roads indicating that the boulder is safe and poses no risk of falling onto the road below.

Colin Howlett's contact details are-

Email: s 36

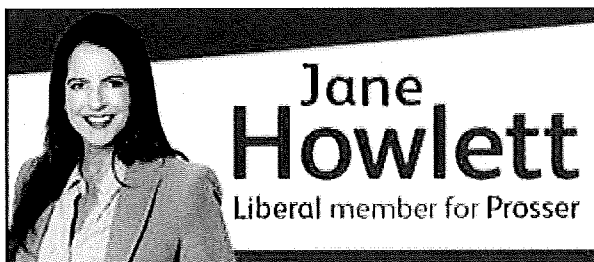
Mob: s 36

Kind regards

s 36

Minister for Sport and Recreation
Minister for Racing
Deputy Leader for Government Business in the Legislative Council
Liberal Member for Prosser
Legislative Council
Parliament of Tasmania
Shop 1/31 Cole Street, Sorell 7172

s 36



Doc 38

From: s 36
Sent: Monday, 15 February 2021 3:47 PM
To: s 36
Subject: Paradise Gorge photogrammetry Change Order
Attachments: T-P.20.1839-CO1-GEO-PRO-001-Rev00.pdf

Hi s 36

Please find attached a change order corresponding to proposed drone-based photogrammetry at the Paradise Gorge site.

Please give me a call if you want to discuss ... I will call shortly in any case.

Cheers, s 36

pitt&sherry

s 36

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P.20.1839 Paradise Gorge Rock Restraint Inspection

Change Order No. 1

Date	15 February 2021
Client	Department of State Growth
Client Representative	s 36
Contact Details	4 Salamanca Place HOBART Tasmania 7000
pitt&sherry Representative	s 36
Contact Details	s 36
Revision	Rev00

1. Scope

The scope of services to be undertaken by pitt&sherry is as follows:

- Engage a subconsultant to conduct laser scanning and drone-based photogrammetry of the rock buttress in Paradise Gorge and produce a 3-D model from the results
- Conduct a brief analysis of the model to augment the findings from the original site visit and assist in completion of the report on options for stabilisation of the site (report is part of original scope of work, extra analysis is outside original scope).

Services which are excluded from the scope to be undertaken by pitt&sherry includes:

- Any formal design works

2. Methodology

The following methodology will be adopted in undertaking the above scope of services:

- Veris to conduct drone operations from a boat to avoid the need for substantial traffic control.
- Laser scanning also to occur from a boat to enable data integration and provide initial data for possible monitoring options.

- Veris to integrate and process data into a 3-D model.
- pitt&sherry to interrogate the data to include in brief report on possible options for stabilisation or other options for reducing long-term risk from the rock buttress.

3. Deliverables

Deliverables to be provided by pitt&sherry include:

- The results from this change order will be included within the report produced as part of the original scope of works.
- Data from the photogrammetry and laser scanning will be made available if desired.

4. Client responsibilities

The following client supplied products have/or will be provided by the client:

- State Growth to advise if drone operations from a boat will require any sort of notifications in the Roadworks Roundup.

5. Program

The above deliverables will be provided within 3 weeks of receipt of advice to proceed.

6. Project team

- s 36

7. Subconsultants

Veris

8. Conditions of Engagement

As per original agreement.

9. Fee Structure:

Activity	Resource	Hours	Rate	Total (ex GST)
Survey of Rock Buttress				
	s 36	4		
		2		
	Sub-consultant (Veris)	1		

s 38

SIGNED for and on behalf of pitt&sherry:

s 36

Signature of Authorised Representative

s 36

Name of Authorised Representative

Date 15/02/2021

SIGNED for and on behalf of the Client:

Signature of Authorised Representative

Name of Authorised Representative

Date

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Released under PTI



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Memo

To **s 36**
From **s 36**
Date 2 February 2021
RE Rock Butress at Paradise Gorge - Interim Report

This memo is an interim report on the site inspection undertaken on January 28, 2021.

Access

The rock butress was accessed across the slopes immediately east of the butress in the company of rope access specialists from SpiderTech. Ropes were not required to access the top of the butress but were required to inspect the face and lower portions of the butress. The route taken featured much loose rock underfoot and care was required to reduce the chances of knocking rock down the slope where it would have a chance of impacting traffic. Contact was maintained with traffic controllers so that they were not in the area potentially affected and so that traffic could be stopped when particularly risky areas were crossed.

If works are to be undertaken at the site then a path clear of loose rock and vegetation would need to be established prior to mobilising equipment to the site.

Site Observations

There is a substantial gap between the boulder that is restrained and the butress behind. The crack is close to 1m wide at the top and around 0.5m wide at the base of the boulder. The crack continues down the column to lower boulders in the stack, gradually narrowing with depth.



Figure 1: View of crack behind restrained boulder



Figure 2: View down crack at back of restrained boulder

There is a substantial accumulation of rocks and other debris within the crack.



Figure 3: View from within the crack; taken a little below the base of the restrained boulder

There are substantial cracks separating the columns which form the part of the buttress immediately behind the column topped by the restrained boulder. These are typically in the 200-300mm range at the top of the buttress, and also extend to depths greater than 3m and are typically filled with rock fragments and soil. Defects lower down the buttress are also very open.



Figure 4: Open defects lower down buttress (restrained boulder is above boulder in upper left of photo)

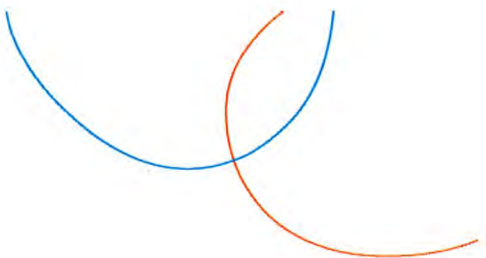
Subhorizontal defects observed on the buttress are also substantially open and typically contain many small rocks separating the larger boulders.



Figure 5: View under restrained boulder



Figure 6: View of end of restraining wire on western side of boulder



Future Work

The recently completed site inspection provided valuable information as to the small scale characteristics of the defects within the rock buttress but the very close view did not provide good information regarding the full scale of the boulders and the buttress itself, along with angles and shapes of defects.

A surveying company has been contacted and have advised that it would be possible to fly a drone with lidar capability, and potentially combined with laser scanning from the road below a 3D model of the buttress could be obtained. Further detail is currently being sought.

Both geotechnical engineers and other personnel involved with the original restraining of the rock have been contacted with the intent of gathering any historical information. This would be valuable as it could highlight any changes that have occurred since the restraining wires were installed.

Discussion

While the buttress was found to be in worse condition than expected prior to the site visit, there are no obvious signs that failure is imminent. The existing restraining system is in place and does not show obvious signs of distress.

Further information is required in order to inform any kind of design for either further restraining or removal of the buttress. It is considered that removal of any particular rock in the buttress may well lead to multiple blocks failing. It is also to be noted that removal of the blocks at the front of the buttress may well destabilise rocks further back.

The current proposed work is to conduct the lidar survey as a variation to the current contract, gather any available historic information and then present options for restraint or removal of the boulders.

Yours sincerely

S 36

Doc 40

Minister for Finance
Minister for Infrastructure and Transport
Minister for State Growth
Minister for Science and Technology
Leader of the House



Level 5, 4 Salamanca Place, Hobart
Public Buildings, 53 St John Street, Launceston
GPO Box 123, HOBART TAS 7001
Phone: (03) 6165 7701; Email: Michael.Ferguson@dpac.tas.gov.au

24 DEC 2020

Councillor Robert Young
Mayor
Glamorgan Spring Bay Council
By email: robert.young@freycinet.tas.gov.au

Dear Mayor Young

Robert

I refer to your email of 2 December 2020 to the Liberal Member for Lyons, Mr John Tucker MP, regarding a boulder on the Tasman Highway at Paradise Gorge. As the Minister for Infrastructure and Transport, I am responding to you on behalf of the Tasmanian Government.

The Department of State Growth has advised me that their maintenance contractor inspects the Tasman Highway weekly, including inspections of the roadside, and has been monitoring the position of the boulder. While it appears that the boulder may have moved slightly after heavy rain in August 2020, the contractor has not detected any further movement since then.

The Department has advised me that they have engaged consultants to complete a comprehensive physical inspection of the boulder and the wire cable restraining it.

The consultants will provide the Department with options on how to best manage the risk now and into the future. This inspection will take place early in 2021. During the inspection a short road closure may be required as occurs with other road projects.

The consultants have already indicated there is no evidence of a recent increase in the physical risk presented by the boulder.

When the inspection has been completed, and advice has been received from the consultants, the Department will determine the most appropriate course of action to manage the risk of the boulder into the future.

The Department of State Growth has advised that Wielangta Road is not part of the State road network, and is owned and managed by a combination of Tasmania Parks and Wildlife Service, Sustainable Timber Tasmania and local government.

As you are aware, following the 2016 floods, Tasmania Parks and Wildlife Service funded repairs to major bridges and negotiated with Glamorgan-Spring Bay Council to take over management of the section of road within that municipality. However, the Tasmania Parks and Wildlife Service was unable to negotiate a similar arrangement with Sorell Council.

The Department does not propose to assume ownership of any section of Wielangta Road and as such is unable to provide advice on potential future upgrades to the road.

I trust this information clarifies the matters you have raised.

Yours sincerely *Regards*

Michael Ferguson

Michael Ferguson MP
Minister for Infrastructure and Transport

cc Mr John Tucker, Member for Lyons

Out of Scope



Doc 41



DEPARTMENT OF STATE GROWTH

Dept. Ref MR20/2963

Critical Date

NOTED	
SIGNED:	
DATE:	22/12/20.

Issues Briefing Note for the Minister for Infrastructure and Transport

SUBJECT: BOULDER ADJACENT TO TASMAN HIGHWAY NEAR ORFORD

MR20/41257

Minister's notation:

Background:

After the storm event in August 2020, concerns were raised with the Department of State Growth as to the safety of a large boulder which sits adjacent to the Tasman Highway at Paradise Gorge, near Orford. The boulder sits partway up the cliff face adjacent to the road, and is restrained by a wire rope.

The Department's maintenance contractor visually inspects the Tasman Highway weekly, including the roadside, and has been monitoring the position of the boulder. While it appears that the boulder may have moved slightly after heavy rain in August, no further movement has been detected since then.

The Mayor of Glamorgan-Spring Bay Council also recently contacted the Department to raise community concerns regarding the safety of the boulder.

The Department has engaged consultants Pitt and Sherry to complete a physical inspection of the boulder, and to prepare some options analysis to inform a decision about how to best manage the risk into the future. Pitt and Sherry have indicated that there is no evidence that the physical risk has changed, and that only a major rainfall event would cause the boulder to move further. This may still not result in a change in risk.

If the recommendation is to remove the boulder, this is likely to require a short road closure to ensure the safety of the personnel involved, as well as those travelling on the Tasman Highway.

Current Situation:

Pitt and Sherry will undertake a physical inspection of the boulder and wire rope in early 2021. This inspection will require engineers to utilise rock climbing equipment to access the boulder. A short road closure may be required to ensure the safety of personnel conducting the inspection and it will need to be conducted under appropriate weather conditions.

The Department will determine an appropriate course of action to best manage the risk once the physical inspection is complete and advice has been received.

Communications Strategy:

A communications strategy will be developed once a risk management approach has been determined by the Department.

APPROVED BY DENISE MCINTYRE

Denise McIntyre

Acting General Manager, State Roads

14 December 2020

Prepared by:	s 36	Cleared by:	s 36
Position:		Position:	
Email:		Email:	
Phone:		Phone:	

Released under RTI

Doc 42

From: s 36
Sent: Monday, 7 December 2020 2:09 PM
To: s 36
Subject: Update on availability of Pitt and Sherry Inspection: Paradise Gorge Rock Inspection

Follow Up Flag: Follow up
Flag Status: Completed

s 36

Fyi

s 36

From: s 36
Sent: Monday, 7 December 2020 2:07 PM
To: s 36
Subject: Paradise Gorge Rock Inspection

Hi s 36

I am awaiting a response from SpiderTech about availability for this one, however I expect that the most likely dates for the inspection will be somewhere in either the week starting the 18th of January or the week starting the 25th of January.

As I said on the phone on Friday, I think that it is worth letting the mayor know that historically rock falls on Paradise Gorge have occurred during heavy rains in the wetter months. This is particularly relevant to the rock in question as I don't believe there is any vegetation currently affecting the rock so bushfires and root growth are unlikely to be contributing factors.

I will let you know if SpiderTech say anything different.

Cheers s 36

pitt&sherry

s 36

Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | Phone +61 3 6210 1400
pittsh.com.au

**Celebrating pitt&sherry's first Reflect
Reconciliation Action Plan.**

[Click to learn more.](#)

pitt&sherry acknowledge the Aboriginal and Torres Strait Islander people as the Traditional Custodians of country on which we live and work. We pay our respects to the Traditional Custodians and Elders past, present and emerging, and recognize their continuing connection to land, water and community.

From: s 36
Sent: Friday, 4 December 2020 8:14 AM
To: secretariat
Subject: MIN20/41257 - File note Mayor Robert Young Glamorgan Spring Bay re boulder on Tasman Highway 20 November 2020
Attachments: ELECTORATE - HOWLETT - Robert Young Mayor Glamorgan Spring Bay Council regarding Tasman Highway Orford - Rock on Cliff.MSG; DRAFT File note Mayor Robert Young Glamorgan Spring Bay re boulder on Tasman Highway 20 November 2020 - UNAPPROVED.DOCX

Categories: s 36

Good Morning

Advisor has requested an IB on this situation and DSG's actions to address it. I did send a request yesterday for a response to a letter from the Mayor.

Due date 10.12.2020

Thanks

s 36

-----< Content Manager record Information >-----

Record Number:MIN20/41257

Title:ELECTORATE - HOWLETT - Robert Young Mayor Glamorgan Spring Bay Council regarding Tasman Highway Orford - Rock on Cliff

-----< Content Manager record Information >-----

Record Number:MIN20/41257/3

Title:DRAFT File note Mayor Robert Young Glamorgan Spring Bay re boulder on Tasman Highway 20 November 2020 - UNAPPROVED

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Doc 43:1

From: s 36
Sent: Friday, 6 November 2020 6:07 PM
To: Howlett, Minister
Subject: ISSUE - Tasman Highway Orford - Rock on Cliff

Categories: Purple Category

Dear s 36

Minister Howlett met with the Mayor of Glamorgan-Spring Bay Council, Robert Young, on 05-11.

At the meeting Mayor Young advised that on the section of the Tasman Highway coming out of Orford (following the Prosser River) a large rock on the cliff face has been dislodged by the recent heavy rains. He said that the rock is being supported by a metal cable to prevent it from falling, however it has moved from its original location and now appears to pose the risk of falling on to the highway below.

He said that he is concerned about the risk that the rock poses to motorists on the highway and would like State Roads to inspect the rock to either remove it or ensure that it is safe.

Mayor Young was unable to state the rock's precise location and I advise State Roads to contact him or the GSB Council to determine what rock the Mayor is referring to.

Mayor Robert Young can be contacted on –

Mob: s 36

Email: robert.young@freycinet.tas.gov.au

Minister Howlett has requested that this issue please be sent to the Minister for Infrastructure and Transport.

Kind regards

s 36

s 36

Minister for Sport and Recreation
Minister for Racing
Deputy Leader for Government Business in the Legislative Council
Liberal Member for Prosser
Legislative Council
Parliament of Tasmania
Shop 1/31 Cole Street, Sorell 7172

s 36



State Roads Division – File Note

Date:	20 November 2020
File/Record No.:	MR/2748
Subject:	Boulder on Tasman Highway at Orford
Name:	Mayor Robert Young
Email Address:	robert.young@freycinet.tas.gov.au
Phone No.:	s 36
Address:	
Notes:	<p>I spoke to Mayor Young regarding the boulder on the Tasman Highway at Orford and explained to him that State Roads is currently monitoring the boulder as part of routine weekly inspections, but that we are working towards a longer term solution – hopefully removing the boulder. I indicated that while we appreciate the risk of the boulder's current position, we also have to ensure that we can remove the boulder safely or develop a long term plan to manage it.</p> <p>He noted that road closures would cause issues for the community.</p> <p>He was happy with this information and appreciated the call.</p>
Action:	I will let Mayor Young know when we have a long term plan for the boulder.
Action Officer:	s 36

From: Swain, Gary
Sent: Friday, 4 December 2020 8:21 AM
To: s 36
Subject: FW: From Robert Young, retired lawyer from Jennings Elliott now mayor of Glamorgan Spring Bay

Categories: For action

For action please

From: Solicitor General [mailto:Solicitor.General@justice.tas.gov.au]
Sent: Thursday, 3 December 2020 10:59 AM
To: Swain, Gary <Gary.Swain@stategrowth.tas.gov.au>
Subject: FW: From Robert Young, retired lawyer from Jennings Elliott now mayor of Glamorgan Spring Bay

Dear Mr Swain,

The Mayor of Glamorgan Spring Bay has sent an email to my office's generic address. It is attached. As you can see he is concerned about potential rockfall(s) onto the Tasman Highway near the Prosser Dam and upgrading the Wielangta Road. These things do not fall within my bailiwick, so I shall inform the Mayor that I have forwarded the email to State Growth for it to action.

Michael O'Farrell SC | Solicitor-General
Office of the Solicitor-General

s 36 e solicitor.general@justice.tas.gov.au | w www.justice.tas.gov.au
15 Murray Street, Hobart, TAS 7000 | GPO Box 825 Hobart, TAS 7001

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From: Mayor Robert Young <robert.young@freycinet.tas.gov.au>
Sent: Tuesday, 1 December 2020 4:14 PM
To: Solicitor General <Solicitor.General@justice.tas.gov.au>
Subject: From Robert Young, retired lawyer from Jennings Elliott now mayor of Glamorgan Spring Bay

Dear Mr O'Farrell

This letter is warning of danger that seems to me to put The State Crown at substantial risk of liability for the negligent, construction and maintenance of a state road, that

- a. It had and has a duty to maintain and keep safe,
- B It was aware of &
- C has done nothing about.

The facts are

The Tasman highway about 500 meters on the eastern side of the Prosser river dam. There is a very large rock that has in the past been tied back into the cliff with a wire rope.

The rock almost over hangs the highway.

It is perched upon other rocks

At a height about 50 meters above the narrow roadway adjacent to the Prosser river.

Recent rains appeared to cause the rocks to shift, so that there is now a significant gap between the cliff to which the offending rock was strapped, and the rock itself

The cause appears to be that the rocks upon which the offender is perched has themselves.

Complaints have been made to State Growth I am told

About 2 weeks ago I received a call from a lady who identified herself as s 36 to my mobile phone when I was driving.

The lady said that State Growth was aware of the fact that the offending rock had moved, and that some engineers assisted by climbers would have to look at the rock.

If the rock does fall, thousands of tonnes of rock will fall onto the Tasman Highway blocking access to Hobart for could be some weeks, maybe some months..

The only access to Hobart for that time will be via Campbell Town through Lake Leak road, costing many many residents many thousands of dollars each.

The Wielangta Road access is not usable as of its extremely poor condition. Suitable for robust 4 wheel drives only. Even if no one is injured by the fall, there would be over 4,000 people in my municipality that would suffer very considerable damage. They are potential claimants should a class action suit be commenced for damages.

I am alert to the questions posed by this email, liability, and damages.

To deal with liability first.

Munnings V The Hydro a 1960s and 70s case where a boy climbed up a power pole and was electrocuted. The Privy Council , if my memory serves me right, upheld a large damages award. One of the issues was that the extreme danger vested the Hydro with a higher duty than would usually be the case.

The other case that comes to mind is a case against the education department, probably the minister, where a boy Triffit, climbed up on the school roof at Bothwell and fell through a skylight onto a concrete floor and was severely brain damaged. The case was settle for over \$1,000,000 if my memory serves me right. Wallace Wilkinson were the solicitors. One of the material factors was that the Department officers knew of people climbing onto the roof, but did nothing to stop them from so doing.

Damages

Brookland Greens Estate V Casey, a class action case, in Victoria, was settled where the claims were almost all pure economic loss Perre v Apand was one of the cases founding the settlement.

The Casey Brooklands case resulted in a many millions of dollars settlement less than 5 years ago.

Slater Gordon were the lawyers for the claimant.

Out of scope

My efforts over the last few years to get the Wielangta road up graded have fallen upon deaf ears. She is now a principal lawyer for Phi Finney Macdonald , class actions lawyers in Victoria.

The Casey Brooklands estate case is not on all fours, but is very similar to our situation.

Robert Young

Mayor Glamorgan Spring Bay Council

1 December 2020

Regards

Robert

Mayor

whom it is addressed. If you are not such a person, you are warned that any disclosure, copying or dissemination of the information is unauthorised. If you have received the transmission in error, please immediately contact this office by telephone, fax or email, to inform us of the error and to enable arrangements to be made for the destruction of the transmission, or its return at our cost. No liability is accepted for any unauthorised use of the information contained in this transmission.

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Doc 45

pitt&sherry

Specialist Knowledge.
Practical Solutions.

24 November 2020

s 36

Department of State Growth
GPO Box 536
HOBART TAS 7001

s 36

Paradise Gorge Rock Buttress Inspection

Proposal for the Provision of Professional Services

1. Background

A large dolerite boulder is present above the Tasman Highway at Paradise Gorge at approximately 570088E, 5287569N. The boulder was initially noted and inspected in 1998 (personal comment from s 36 and inspected again in 2002 (pitt&sherry, report attached to this proposal) and wire rope support installed by Spidertech (personal comment from s 36). It appears that the boulder and associated support system has not been inspected since then.

The Department have expressed a desire for a permanent solution to this boulder so that no further inspections are required. This proposal is to conduct an inspection and present concept options for a solution.

2. Scope of services

The scope of services to be undertaken by pitt&sherry is as follows:

- Site inspection of the boulder.
- Memorandum style report outlining the results of the inspection and presenting high level options.

Services which are excluded from the scope to be undertaken by pitt&sherry includes:

- No formal design has been requested at this stage.

**Pitt & Sherry
(Operations) Pty Ltd**
ABN 67 140 184 309

Phone 1300 748 874
info@pittsh.com.au
pittsh.com.au

Located nationally —
Melbourne
Sydney
Brisbane
Hobart
Launceston
Newcastle
Devonport
Wagga Wagga



3. Methodology

The following methodology will be adopted in undertaking the above scope of services:

- Traffic management will be provided to allow safe access to the base of the slope.
- Ropes will be set up to allow access up to the rock.
- The inspection will be undertaken by an engineering geologist with appropriate working at heights qualifications.
- Photographs of pertinent details will be taken, and if appropriate, measurements using hand held equipment will be taken.

4. Deliverables

Deliverables to be provided by pitt&sherry include:

- Memorandum outlining the findings of the investigation and high level options.

5. Client responsibilities

The following client supplied products have/or will be provided by the client:

- Any relevant information that is held by the Department would be appreciated.

6. Program

The above deliverables will be provided within four weeks of DSG's advice to proceed. The longer timeframe is due to the fact that the works will need to be included in the Roadworks Roundup, and that subcontractors are involved. It is possible that availability of rope safety personnel may cause other delays, but timely notice of intent to proceed may mitigate this.

7. Project resources

The following project resources will be committed to this Consultancy:

- 
-
-

8. Management systems

pitt&sherry operates within a formal integrated management system (IMS) framework, incorporating quality, OH&S and environmental elements. The system is currently third party certified by International Certifications Ltd.

The IMS is an integral component of the project management process on all of pitt&sherry's services.

9. Insurance

pitt&sherry maintain insurance policies that meet the usual contractual requirements. Evidence is available upon request.

10. Conditions of engagement

It is proposed that this work would be undertaken under the 3100 contract.

11. Fee structure

The following hourly rates and time commitments are envisaged for each of our project resources:

Deliverables	Hours	Cost
Project management and safety		
Spidertech safety		
Traffic management		
Site visit including travel (assumes 1 day on site)		
Kilometres – 120 km		
Report and technical review		
Total Estimated Costs (ex GST)		

Note: pitt&sherry reserves the right to adjust the above rates in line with CPI on the anniversary of the date of acceptance of this proposal.

Change to the scope of services indicated above will be negotiated prior to commencing activities and managed by way of variation to the above fees.

The following rates will apply for variation services:

Resource	Rate (\$/hr exc. GST)

12. Progress payments

Invoices will be submitted by pitt&sherry monthly for services undertaken in arrears.

13. Offer validity period

This offer remains valid for a period of 30 days from the date of this proposal. pitt&sherry reserves the right to vary the offer if this validity period expires prior to the award of a contract for the services.

I trust that the above accurately reflects our discussions and we look forward to working with you on this project.

Should you wish to discuss any aspect of our proposal please do not hesitate to contact **s 36** on **s 36**

Yours sincerely,

s 36

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Doc 46
State Roads Division – File Note

Date:	20 November 2020
File/Record No.:	MR/2748
Subject:	Boulder on Tasman Highway at Orford
Name:	Mayor Robert Young
Email Address:	robert.young@freycinet.tas.gov.au
Phone No.:	s 36
Address:	
Notes:	<p>I spoke to Mayor Young regarding the boulder on the Tasman Highway at Orford and explained to him that State Roads is currently monitoring the boulder as part of routine weekly inspections, but that we are working towards a longer term solution – hopefully removing the boulder. I indicated that while we appreciate the risk of the boulder's current position, we also have to ensure that we can remove the boulder safely or develop a long term plan to manage it.</p> <p>He noted that road closures would cause issues for the community.</p> <p>He was happy with this information and appreciated the call.</p>
Action:	I will let Mayor Young know when we have a long term plan for the boulder.
Action Officer:	s 36

Doc 47

From: s 36
Sent: Thursday, 19 November 2020 10:00 AM
To: s 36
Cc: Colin Howlett
Subject: Fwd: Large Boulder Towering over Tasman Highway.

Follow Up Flag: Follow up
Flag Status: Completed

Hello s 36
Sorry to hear you have been unwell,
Many thanks for the up date, Council will pass your reply on.

It would be helpful if you could keep in touch with removal or audit on the existing
Wire rope, presumably preventing the boulder from being released.

On behalf of Road Safety, Thanks.

Kind regards
Colin

Begin forwarded message:

From: s 36
Subject: FW: Large Boulder Towering over Tasman Highway.
Date: 19 November 2020 at 8:56:16 am AEDT
To: colin Howlett <s 36>

Hi Colin

I'm sorry for the delay in responding to you, but I have been unwell.

We are continuing to monitor the boulder, but are also working on a longer term solution, as the
Department's preference is to remove the risk rather than continue to manage it if possible.

We are seeking to remove the boulder from this location, however we need to ensure that this can
be done safely for both road users and those undertaking the removal.

If removal is not possible, we will need to develop a longer term strategy for monitoring and
stabilisation.

I appreciate that there is concern about the boulder.

I am awaiting a proposal detailing options, and can provide further advice once that has been
received and a decision on next steps has been made.

I am the contact for this matter.

Cheers

s 36

Salamanca Building, Parliament Square
4 Salamanca Place, Hobart, TAS 7000 | GPO Box 536, Hobart TAS 7001

s 36

www.stategrowth.tas.gov.au

DEPARTMENT OF STATE GROWTH COURAGE TO MAKE A DIFFERENCE THROUGH:



From: colin Howlett s 36
Sent: Tuesday, 10 November 2020 9:09 AM
To: s 36
Cc: Colin Howlett s 36
Subject: Large Bolder lowering over Tasman Highway.

Hello s 36

This matter has been ongoing for some time now.

In the event of this Bolder being released and lodging on Tasman Highway, Lives could be lost.

This is serious, The Tasmanian Transport Council has been asked by Industry & members of the public to ensure they are not being placed at unnecessary Risk.

Would you please provide the Government's delegate's name, responsible and accountable to ensure the Bolder is certified as being safe.

It is asked that the Government delegate's name be returned in seven days.

Kind Regards
Colin H.Howlett OAM
Chair, Tasmanian Transport Council

s 36

On 26 Aug 2020, at 3:44 pm, s 36
<s 36> wrote:

Dear Mr Howlett

Thank you for the clarification. I provide the following information in response to your email:

Tasman Highway, south of Prosser River Bridge – I believe you are referring to the area known as Paradise Gorge. We are aware that there are issues with flooding in this area and continue to maintain the existing culverts. We do not currently have plans to install additional culverts at this location.

Boulder – I am assuming this is in the same area (Tasman Highway at Paradise Gorge) – State Roads' maintenance contractors inspect the road regularly and have been requested to report any movement to us. We are not aware of any recent movement, however an inspection is being conducted and if the maintenance contractors have any concerns, they will take whatever action necessary to make the site safe. We will arrange for a geologist to attend the site to assess the likelihood of future movement. I can provide you with further information once it is available.

Tasman Highway, south of Buckland – I am assuming you are referring to the area where the road shoulder has collapsed where lanes are currently closed. This is related to a slip rather than dewatering. We have investigated the issue and are awaiting engineering designs to determine the appropriate solution.

Risdonvale, Richmond Road – I am assuming you are referring to Grass Tree Hill Road – drainage works are planned in this area later in the year

Drainage inspections are included in our weekly road inspections across the network and entered into our Information Management System for prioritisation, and then programmed and conducted according to budget availability.

The most effective way to report an issue on the State Road Network is to phone our call centre, which is available 24 hours a day, 7 days a week. Issues will then be logged and prioritised and provided directly to our Maintenance contractor if appropriate.

To report an issue on the State Road Network that presents a real or potential risk to road users, or relates to mowing, litter, potholes, trees and vegetation, drainage, abandoned vehicles, roadkill, damaged signs and damage to bridges phone 1300 139 933 (select menu item 2)

Hopefully this clarifies the issues you have raised. Please let me know if you have any further questions

Cheers

s 36

Salamanca Building, Parliament Square
4 Salamanca Place, Hobart, TAS 7000 | GPO Box 536, Hobart TAS 7001

s 36

www.stategrowth.tas.gov.au

<image001.png>

<image002.png>

-----Original Message-----

From: s 36
Sent: Wednesday, 26 August 2020 10:12 AM
To: s 36
Cc: Colin Howlett <colinhowlett11@icloud.com>
Subject: Re: Storm Damage To Tasmanian Roads

Hello s 36

Thanks for your acknowledgement, via contact with s 36

Flooding South of Prosser River Bridge , Tasman Highway. Sections have been flooding for some years & requires additional culverts

Large Bolder Being Restrained By Wire Rope. Some road users are afraid it might let go and kill someone.

Road failure South of Buckland Tasman Highway. Adequate dewatering provision, often prevents road failure.

Risdonvale - Richmond Road. Drainage, Accumulation of sticks & silt effects water flow and in places causes road flooding.

Timely maintenance is likely to minimise expenditure & improve Road safety

Perhaps drainage audits could be combined with other road inspections.

Please acknowledge receipt of this info. by email.

Thanks for you interest.

Kind regards
Colin H.Howlett OAM
Chair, Tasmanian Transport Council
colinhowlett11@gmail.com

> On 25 Aug 2020, at 3:58 pm s 36

< s 36

>

> Colin

>

> s 36 has passed your email onto me in my role in asset management in State Roads.

>

> In order to investigate the issue, it would be useful to have specific locations and instances.

>

> Happy to discuss further

>

> Cheers

>

>

s 36 State

> Roads | Department of State Growth Salamanca Building, Parliament

> Square

> 4 Salamanca Place, Hobart, TAS 7000 | GPO Box 536, Hobart TAS 7001

s 36

s 36

>

.tas.gov.au%7C64bb865f8eac41c99b4608d84954bde1%7C64ebab8accf44b5ca2d32

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> -----Original Message-----

> From: colin Howlett [mailto:colinhowlett11@gmail.com]

> Sent: Monday, 17 August 2020 9:52 PM

> To: s 36

> Cc: colin Howlett <colinhowlett11@icloud.com>

> Subject: Storm Damage To Tasmanian Roads

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> Dear s 36 Storm Damage To Roads. Early Warning.

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> We have received complaints regarding Road flooding, due to accumulated vegetation from elevated terrain and in some cases trees towering over culverts & open drainage systems, State wide.

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> s 36 could you pass this on and advise me the delegated officer, responsible for Road dewatering.

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> Thanks in anticipation.
>
> Kind regards
> Colin Howlett(Chair Tasmanian Transport Council)

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Doc 48

From: s 36
Sent: Thursday, 12 November 2020 7:55 AM
To: s 36
Cc:
Subject: RE: Large Bolder Towering over Tasman Highway.

Follow Up Flag: Follow up
Flag Status: Completed

Morning,

We got the maintenance contractor to check it out. The did no observe any obvious movement.

Ill arrange a assessment by a Geologist.

s 36

s 36

State Roads | Department of State Growth
Level 2 / 4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001

s 36

DEPARTMENT OF STATE GROWTH COURAGE TO MAKE A DIFFERENCE THROUGH:



From: s 36
Sent: Tuesday, 10 November 2020 9:16 AM
To: s 36
Cc: s 36
Subject: FW: Large Bolder Towering over Tasman Highway.

Hi

Can you please remind me if we had someone else look at this? If not, can you please arrange for a geologist/engineer or similar to inspect and assess the risk.

We did talk about the rock blankets and the need to inspect, but as I recall we didn't get any funding for this.

My fault for not getting back to him again.

Cheers

s 36

From: colin Howlett s 36
Sent: Tuesday, 10 November 2020 9:09 AM
To: s 36
Cc: Colin Howlett s 36
Subject: Large Bolder Towering over Tasman Highway.

Hello s 36

This matter has been ongoing for some time now.

In the event of this Bolder being released and lodging on Tasman Highway, Lives could be lost.

This is serious, The Tasmanian Transport Council has been asked by Industry & members of the public to ensure they are not being placed at unnecessary Risk.

Would you please provide the Government's delegate's name, responsible and accountable to ensure the Bolder is certified as being safe.

It is asked that the Government delegate's name be returned in seven days.

Kind Regards
Colin H.Howlett OAM
Chair, Tasmanian Transport Council

s 36

On 26 Aug 2020, at 3:44 pm s 36 wrote:

Dear Mr Howlett

Thank you for the clarification. I provide the following information in response to your email:

Tasman Highway, south of Prosser River Bridge – I believe you are referring to the area known as Paradise Gorge. We are aware that there are issues with flooding in this area and continue to maintain the existing culverts. We do not currently have plans to install additional culverts at this location.

Boulder – I am assuming this is in the same area (Tasman Highway at Paradise Gorge) – State Roads' maintenance contractors inspect the road regularly and have been requested to report any movement to us. We are not aware of any recent movement, however an inspection is being conducted and if the maintenance contractors have any concerns, they will take whatever action necessary to make the site safe. We will arrange for a geologist to attend the site to assess the likelihood of future movement. I can provide you with further information once it is available.

Tasman Highway, south of Buckland – I am assuming you are referring to the area where the road shoulder has collapsed where lanes are currently closed. This is related to a slip rather than dewatering. We have investigated the issue and are awaiting engineering designs to determine the appropriate solution.

Risdonvale, Richmond Road – I am assuming you are referring to Grass Tree Hill Road – drainage works are planned in this area later in the year

Drainage inspections are included in our weekly road inspections across the network and entered into our Information Management System for prioritisation, and then programmed and conducted according to budget availability.

The most effective way to report an issue on the State Road Network is to phone our call centre, which is available 24 hours a day, 7 days a week. Issues will then be logged and prioritised and provided directly to our Maintenance contractor if appropriate.

To report an issue on the State Road Network that presents a real or potential risk to road users, or relates to mowing, litter, potholes, trees and vegetation, drainage, abandoned vehicles, roadkill, damaged signs and damage to bridges phone 1300 139 933 (select menu item 2)

Hopefully this clarifies the issues you have raised. Please let me know if you have any further questions

Cheers

s 36

Salamanca Building, Parliament Square
4 Salamanca Place, Hobart, TAS 7000 | GPO Box 536, Hobart TAS 7001

s 36

www.stategrowth.tas.gov.au

<image001.png>

<image002.png>

-----Original Message-----

From: colin Howlett [mailto:s 36]
Sent: Wednesday, 26 August 2020 10:12 AM
To: s 36
Cc: Colin Howlett s 36
Subject: Re: Storm Damage To Tasmanian Roads

Hello s 36

Thanks for your acknowledgement, via contact with s 36

Flooding South of Prosser River Bridge , Tasman Highway. Sections have been flooding for some years & requires additional culverts

Large Bolder Being Restrained By Wire Rope. Some road users are afraid it might let go and kill someone.

Road failure South of Buckland Tasman Highway. Adequate dewatering provision, often prevents road failure.

Risdonvale - Richmond Road. Drainage, Accumulation of sticks & silt effects water flow and in places causes road flooding.

Timely maintenance is likely to minimise expenditure & improve Road safety

Perhaps drainage audits could be combined with other road inspections.

Please acknowledge receipt of this info. by email.

Thanks for you interest.

Kind regards
Colin H.Howlett OAM
Chair, Tasmanian Transport Council
s 36

> On 25 Aug 2020, at 3:58 pm, s 36 wrote:

>

> Colin

>

> s 36 has passed your email onto me in my role in asset management in State Roads.

>

> In order to investigate the issue, it would be useful to have specific locations and instances.

>

> Happy to discuss further

>

> Cheers

>

>

> s 36 State

> Roads | Department of State Growth Salamanca Building, Parliament

> Square

> 4 Salamanca Place, Hobart, TAS 7000 | GPO Box 536, Hobart TAS 7001

> s 36

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> -----Original Message-----
> From: colin Howlett [mailto:s 36]
> Sent: Monday, 17 August 2020 9:52 PM
> To: s 36
> Cc: colin Howlett <s 36>
> Subject: Storm Damage To Tasmanian Roads
>
> Dear s 36 Storm Damage To Roads. Early Warning.
>
> We have received complaints regarding Road flooding, due to accumulated vegetation from
elevated terrain and in some cases trees towering over culverts & open drainage systems, State
wide.
>
> It is clearly accepted that adequate drainage, provides safer Roads & minimises remedial works.
>
> s 36 could you pass this on and advise me the delegated officer, responsible for Road
dewatering.
>
> Thanks in anticipation.
>
> Kind regards
> Colin Howlett(Chair Tasmanian Transport Council)
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Doc 49

From: Ferguson, Minister <Minister.Ferguson@dpac.tas.gov.au>
Sent: Wednesday, 11 November 2020 1:08 PM
To: secretariat
Subject: MIN20/41257 : ELECTORATE - HOWLETT - Robert Young Mayor Glamorgan Spring Bay Council regarding Tasman Highway Orford - Rock on Cliff
Attachments: ELECTORATE - HOWLETT - Robert Young Mayor Glamorgan Spring Bay Council regarding Tasman Highway Orford - Rock on Cliff.MSG

Categories:

s 36

Good Afternoon

Can contact please be made with the Mayor and a file note provided.

Due date 18.11.2020

Thanks

s 36

-----< Content Manager record Information >-----

Record Number:MIN20/41257

Title:ELECTORATE - HOWLETT - Robert Young Mayor Glamorgan Spring Bay Council regarding Tasman Highway Orford - Rock on Cliff

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Doc 49:1

From: s 36
Sent: Friday, 6 November 2020 6:07 PM
To: Howlett, Minister
Subject: ISSUE - Tasman Highway Orford - Rock on Cliff

Categories: Purple Category

Dear s 36

Minister Howlett met with the Mayor of Glamorgan-Spring Bay Council, Robert Young, on 05-11.

At the meeting Mayor Young advised that on the section of the Tasman Highway coming out of Orford (following the Prosser River) a large rock on the cliff face has been dislodged by the recent heavy rains. He said that the rock is being supported by a metal cable to prevent it from falling, however it has moved from its original location and now appears to pose the risk of falling on to the highway below.

He said that he is concerned about the risk that the rock poses to motorists on the highway and would like State Roads to inspect the rock to either remove it or ensure that it is safe.

Mayor Young was unable to state the rock's precise location and I advise State Roads to contact him or the GSB Council to determine what rock the Mayor is referring to.

Mayor Robert Young can be contacted on –

Mob: s 36

Email: robert.young@freycinet.tas.gov.au

Minister Howlett has requested that this issue please be sent to the Minister for Infrastructure and Transport.

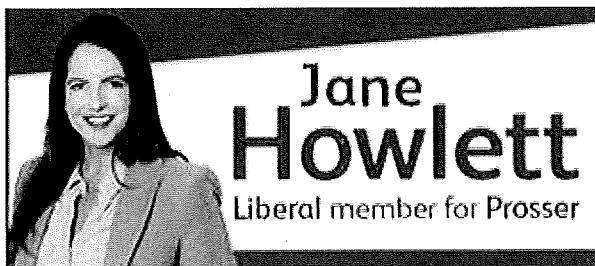
Kind regards

s 36

s 36

Minister for Sport and Recreation
Minister for Racing
Deputy Leader for Government Business in the Legislative Council
Liberal Member for Prosser
Legislative Council
Parliament of Tasmania
Shop 1/31 Cole Street, Sorell 7172

s 36



Doc 50

From: s 36
Sent: Thursday, 30 April 2020 11:45 AM
To: Consultants
Cc: s 36
Subject: 2220-3-TBA - Paradise Gorge Rockfall and Flood Damage Assessment
Attachments: HB20149H001 pro 03P Rev 00.pdf

Good Morning,

Apologies for the delay in sending this through.

Please find attached pitt&sherry's proposal for the subject project. If the proposal is acceptable to the Department of State Growth, could you please process it under the requirements of Contract 2220 at your earliest convenience.

If there are any queries regarding the attached please do not hesitate to contact me.

Kind regards,

s 36

pitt&sherry

s 36

Hobart Office — Level 1, 199 Macquarie Street
GPO Box 94 Hobart Tasmania 7001 | Phone +61 3 6210 1400
pittsh.com.au

COVID-19: Read about pitt&sherry's measures to Flatten the Curve.

Doc 50:1

pitt&sherry

Specialist Knowledge.
Practical Solutions.

30 April 2020

s 36

Department of State Growth
GPO Box 536
HOBART TAS 7001

Dear **s 36**

HB20149 – Paradise Gorge Rockfall and Flood Damage Assessment

Proposal for the Provision of Professional Services

I refer to our phone conversation on 03 April 2020 and confirm details of discussions regarding professional services as follows:

1. Background

A significant rockfall occurred in the Paradise Gorge area on the 2nd of April 2020. Other areas of the road were flooded and scouring is understood to have occurred on the lower side of the road in places. Initial remediation works and road clearing have already been undertaken, but an inspection is required to identify any further urgent works in the area.

2. Scope of services

The scope of services to be undertaken by pitt&sherry is as follows:

- Site inspection of the area with traffic management to be supplied by Stornoway contractors.
- Email report to identify any further work required and make comment on the stability of the area.

Services which are excluded from the scope to be undertaken by pitt&sherry includes:

- No formal report or design has been requested at this stage.

3. Methodology

The following methodology will be adopted in undertaking the above scope of services:

- The area understood to have suffered the most significant flooding and rockfalls is to be inspected on foot in the company of Stornoway contractors who will provide traffic management.

**Pitt & Sherry
(Operations) Pty Ltd**
ABN 67 140 184 309

Phone 1300 748 874
info@pittsh.com.au
pittsh.com.au

Located nationally —
Melbourne
Sydney
Brisbane
Hobart
Launceston
Newcastle
Devonport
Wagga Wagga



- Photographs of pertinent details will be taken, and if appropriate, measurements using hand held equipment will be taken.
- Areas of interest will be identified by chainages provided by Stornoway personnel

4. Deliverables

Deliverables to be provided by pitt&sherry include:

- Email report outlining the findings of the investigation

5. Client responsibilities

The following client supplied products have/or will be provided by the client:

- Stornoway representatives on site to provide traffic management and identify areas of concern.

6. Program

The above deliverables will be provided within one week of DSG's advice to proceed.

7. Project resources

The following project resources will be committed to this Consultancy:

- s 36
- [REDACTED]

8. Management systems

pitt&sherry operates within a formal integrated management system (IMS) framework, incorporating quality, OH&S and environmental elements. The system is currently third party certified by International Certifications Ltd.

The IMS is an integral component of the project management process on all of pitt&sherry's services.

9. Insurance

pitt&sherry maintain insurance policies that meet the usual contractual requirements. Evidence is available upon request.

10. Conditions of engagement

Contract 2220-3.

11. Fee structure

Time basis

It is proposed that this Consultancy be undertaken on a time basis as the scope of services is currently not fully defined.

The following hourly rates and time commitments are envisaged for each of our project resources:

Resource	Estimated hours	Hourly rate	Amount
s 36			
Kilometres – 163km			
Total Estimated Costs (ex GST)			

*Rounded to nearest dollar

Note: pitt&sherry reserves the right to adjust the above rates in line with CPI on the anniversary of the date of acceptance of this proposal.

Change to the scope of services indicated above will be negotiated prior to commencing activities and managed by way of variation to the above fees.

The following rates will apply for variation services:

Resource	Rate (\$/hr exc. GST)
Andrew Tyson	s 38

Note: pitt&sherry reserves the right to adjust the above rates in line with CPI on the anniversary of the date of acceptance of this proposal.

12. Progress payments

Invoices will be submitted by pitt&sherry monthly for services undertaken in arrears.

13. Offer validity period

This offer remains valid for a period of 30 days from the date of this proposal. pitt&sherry reserves the right to vary the offer if this validity period expires prior to the award of a contract for the services.

I trust that the above accurately reflects our discussions and we look forward to working with you on this project.

Should you wish to discuss any aspect of our proposal please do not hesitate to contact **s 36** on **s 36**

Yours sincerely,

s 36

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Released under RTI

Doc 51

From: s 36
Sent: Thursday, 10 June 2021 10:31 AM
To: s 36
Subject: FW: Paradise Gorge Inspection

Hi s 36

Here is the email report from the Paradise Gorge inspection that started the HB20149 Paradise Gorge Rockfall inspection job.

Cheers, s 36

pitt&sherry

s 36

Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | Phone +61 3 6210 1400
pittsh.com.au

Celebrating pitt&sherry's first Reflect Reconciliation Action Plan.

[Click to learn more.](#)

pitt&sherry acknowledge the Aboriginal and Torres Strait Islander people as the Traditional Custodians of country on which we live and work. We pay our respects to the Traditional Custodians and Elders past, present and emerging, and recognize their continuing connection to land, water and community.

From: s 36
Sent: Monday, 6 April 2020 8:15 PM
To: s 35
Cc: s 36
Subject: Paradise Gorge Inspection

Hi s 36

Here is an expanded version of the results of my inspection today ... please let me know if this email is sufficient or if you would like it formalised into a memorandum or a report.

The main inspection covered the area from approximate chainages 9.00km to 9.50km on Link 20 of A0113. Chainages were taken from sprayed markings on the road or the rock wall where available, otherwise from the tablet used by the Stornoway personnel. In some areas a stable chainage could not be obtained. The observations are as follows:

- First culvert east of inspection start (approximate chainage 9.06km): There is scour on the lower side of the road for approximately 8m length finishing at the culvert outlet. This scour is approximately one metre from the edge of the seal. There are also some depressions immediately adjacent to the seal which appear to be

associated with cleanup from an earlier event. Both these issues should be fixed to avoid further damage if another flood occurs, but neither is considered urgent.

- Second culvert east of inspection start (approximate chainage 9.07km): The inlet to this culvert is partially blocked by fine sand and rocks. In addition, part of the steel liner has been bent in and will further restrict water flow in the event of another major rain event.



Both issues should be fixed, but are not considered urgent.
The outlet has suffered extensive scour on each side of the headwall.



This requires remediation but is not considered urgent.

- Third culvert east of inspection start (approximate chainage 9.13km): This culvert is clear but there is an overhang that has formed in the material adjacent to the inlet of the culvert. It is recommended that this material is battered back to avoid the possibility of a collapse into the culvert and subsequent blockage.



This is not considered urgent.

- Fourth culvert east of inspection start (approximate chainage 9.18km): This inlet to this culvert is completely blocked. It is recommended that this is cleared.



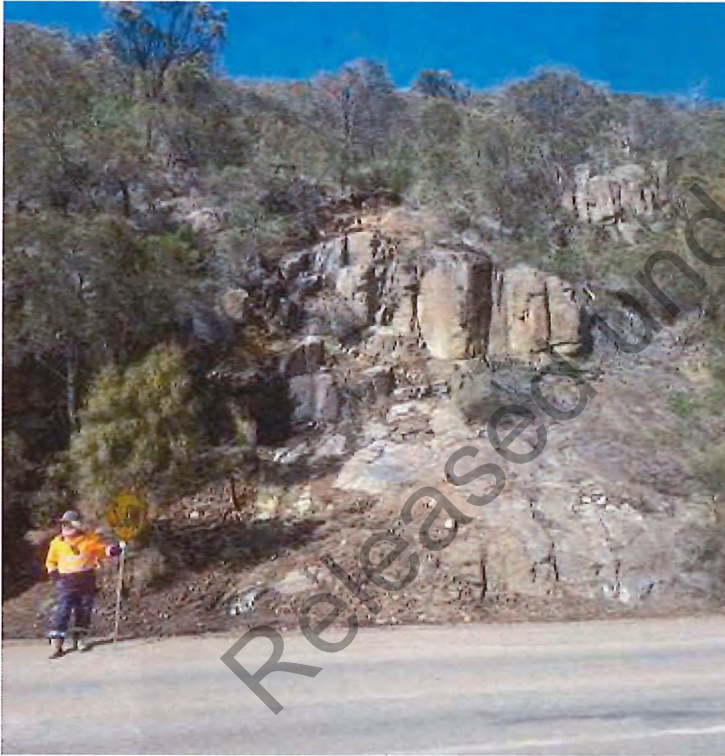
- Fifth culvert east of inspection start (chainage painted on rock wall 9.23km): The inlet to this culvert is blocked, and there is loose rock and a dangerous tree above the inlet. It is recommended that the tree above this culvert be brought down, and the loose rocks scaled, then the culvert be cleared.



- Sixth culvert east of inspection start (chainage painted on rock wall 9.36km): The inlet to this culvert is partially blocked with rock fragments and vegetation, though the culvert is still running. The asphalt seal beside the headwall has become undermined. Clearing this culvert and repairing the seal is considered not to be urgent.



- Seventh culvert east of inspection start (estimated chainage 9.38km): This culvert appears to be in good condition.
- Main fall area (estimated chainage 9.43km): A major defect dips at between 28° and 30° towards the road; some 10-15m back from the road edge is a cliff line, and the material that failed onto the road was sourced from above this cliff line. The area appears quite clean, with no visible loose rocks that might present a risk to the road in the short term. No urgent work is recommended at this site.



A possible long term solution at this site might be the construction of a catch fence at the top of the cliff line; this could link into drape mesh to the base of the cliff to guide rocks to the sloping defect at the base. A secondary (lower energy rated) fence would then be required near the base of this slope to capture fallen material. Further investigation would be required to generate other options or provide design advice.

- Eighth culvert east of inspection start (estimated chainage 9.48km): This culvert is almost completely blocked by clay.



- Netting (estimated chainage 9.45km and beyond): The netting that was installed on the slope appears to be performing as intended by guiding falling material to the base of the slope at low velocity. Some regression of the headscarp of a colluvial failure appears to have occurred, but other boulders in the area appear to be held in place by the passive support of the netting.



- In general it is observed that between chainages 9.00km and 9.23km there is a substantial amount of loose colluvium in the top of the cuttings, and as such, frequent small rock falls can be expected in these areas.
- In other parts of Paradise Gorge it is observed there have been several areas where water has washed over the road, many blocked culverts and much damage to the batters on the lower side of the road. Some of these areas have had temporary repair work undertaken. One other notable feature on the road are a pair of gabion sections at around chainage 7km. Neither of these sections of gabions appears to have remained stable after construction, though the damage to the seal and edge of road around these sections appears old, likely more than 10 years old.

A final recommendation is that the full length of the Paradise Gorge section of road be inspected by personnel experienced with slope failures and water damage. There are many sections where the outer seal edge is crumbling and voids are forming between the trafficable sections and the safety rail; this is the situation that preceded the construction of shotcrete walls on the lower side of the road a few years ago. There may well be other problem areas developing that a quick drive-through inspection cannot identify.

As mentioned above, please let us know if you would like this formalised into a standard report. Also, please contact me if you would like any further detail on any of the areas mentioned.

Cheers, s 36

s 36

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PO Box 94 Hobart Tasmania 7001 | Phone +61 3 6210 1400

pittsh.com.au

COVID-19: Read about pitt&sherry's measures to Flatten the Curve.

Released under RTI

From: s 36
Sent: Thursday, 2 April 2020 7:47 PM
To: s 36
Subject: Tasman Highway closure - photos
Attachments: IMG_4147.JPG; IMG_4146.JPG; IMG_4145.JPG; IMG_4144.jpg

Evening

FYI, some photos of the site.

Police are now controlling the site. Stornoway are on their way with machinery to remove but it is expected to take some time and conditions may continue till morning. As police control this site, they will provide advice to Stornoway when they deem enough has been cleared for re-opening.

In regards to the rock. This is at the very start of the cliff section. From the advice provided, it looks to be that this rock was at the bottom of the slope and has tipped over with the force of the water and debris from higher up. Stornoway will remove any objects that are suspect to fall but this area is a gradual slope into the trees. I will take a look in the morning, when the they have cleared and reopened the road.

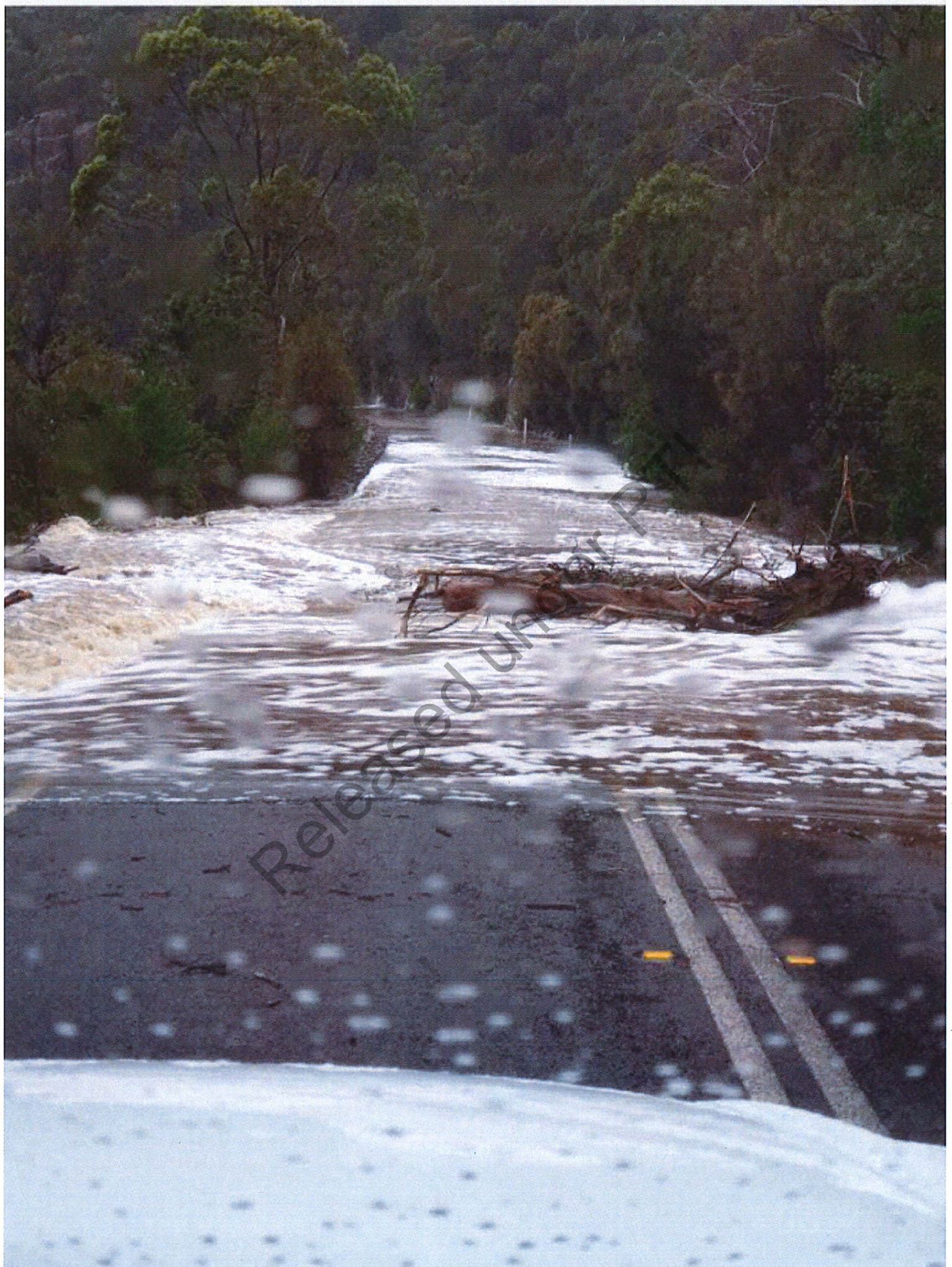
Regards

s 36

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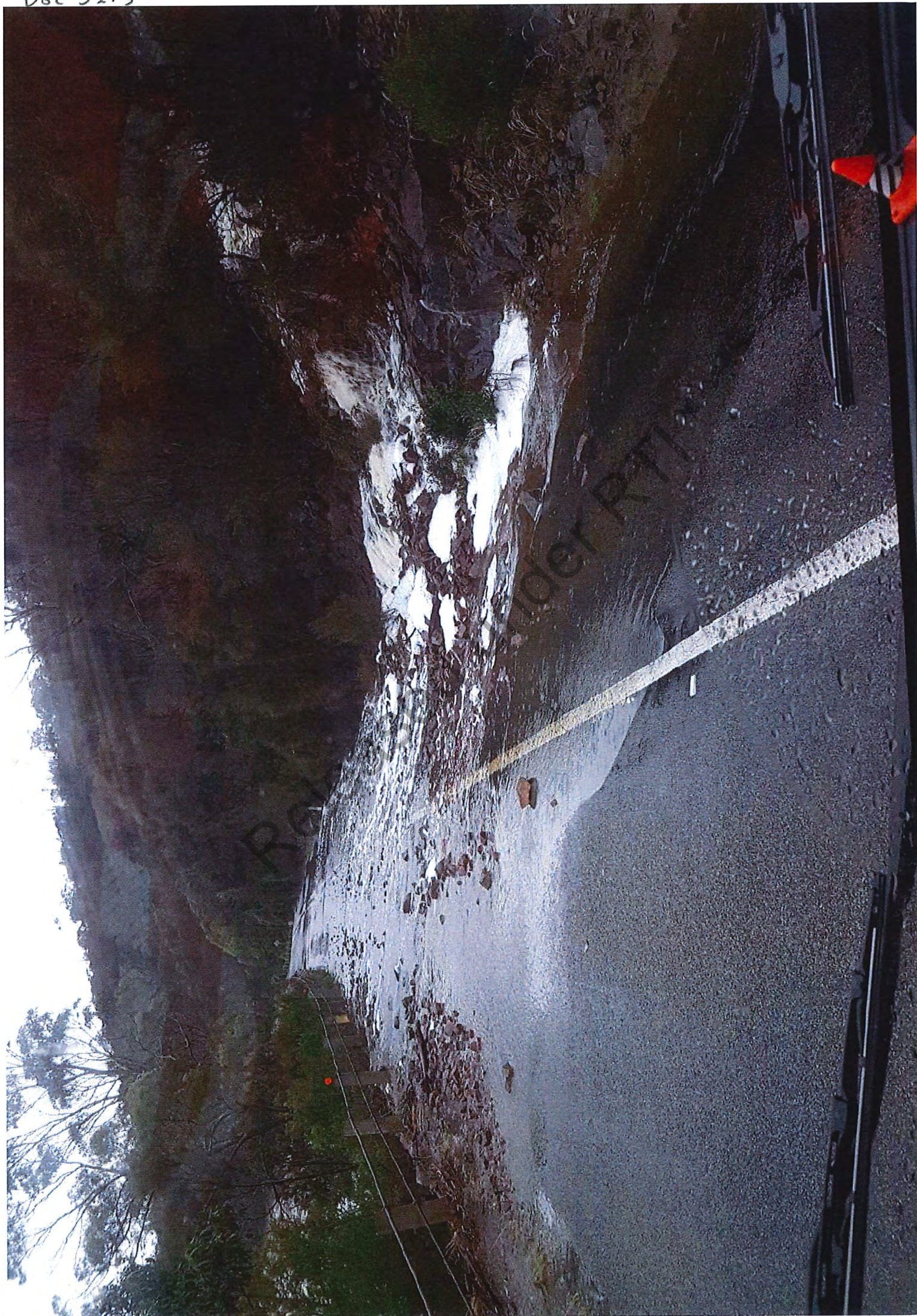
Doc 52:1



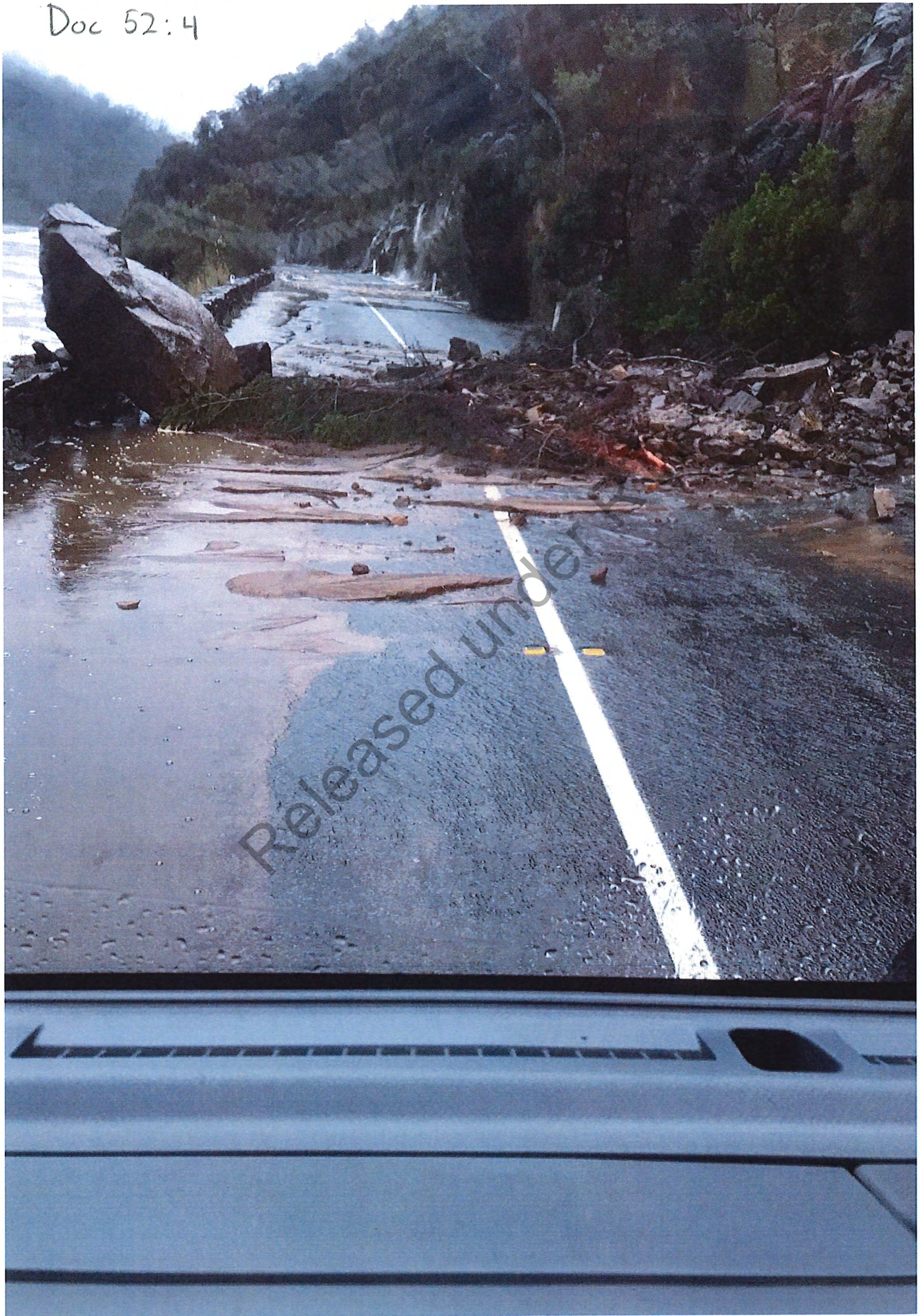


Doc 52:2


Doc 52:3



Doc 52:4



Doc 53

Request Number	Callback Required	Responsibility Of	Request Source	Request Type	Incident Date	Date Raised
RN08999	FALSE		Telephone call	ROAD OBSTRUCTION - CALL OUT	26/Oct/2020	16/Aug/2020
RN09751	FALSE		Telephone call	ROAD OBSTRUCTION - CALL OUT	16/Dec/2020	26/Oct/2020
RN10253	FALSE		police	ROAD OBSTRUCTION - CALL OUT	06/Feb/2021	06/Feb/2021
RN10744	FALSE		Telephone call	ROAD OBSTRUCTION - CALL OUT	12/Mar/2021	12/Mar/2021
RN10742	FALSE		Email - Info@stategrowth	ROAD OBSTRUCTION - CALL OUT	28/May/2021	28/May/2021
RN11056	FALSE		Corporate Mailbox - Email	TREES - NON URGENT	10/May/2021	10/May/2021
RN11742	FALSE					
RN11590	FALSE					

Released under P

Time Received	Target Date	Primary Location Description	Received By	Entered By	Requestors First Name	Requestors Surname
0.215972222	26/Aug/2020	Tasman Hwy				
0.5875	05/Nov/2020	Tasman Hwy				
0.399305556	26/Dec/2020	Tasman Hwy				
0.474305556	16/Feb/2021	Tasman Hwy				
0.435416667	16/Feb/2021	Tasman Hwy				
0.586805556	01/Apr/2021	Tasman Hwy				
0.36875	07/Jun/2021	Tasman Hwy				
0.653472222	28/Jun/2021	Tasman Hwy				

s 36

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Released under RTI

Requestors Phone Requestors Address

s 36

Glamorgan/Spring Bay Council

Requestors Town Location Type 1

South
South
South
South
South
South
South
South

Released under RTI

Requestors Postcode	Location Type 2	Location Type 3	Completion Date	Location Type 4	Primary Location Type	Location Type 5
			16/Aug/2020			
			28/Oct/2020			
			16/Dec/2020			
			09/Feb/2021			
			09/Feb/2021			
			12/Mar/2021			
			31/May/2021			
			03/Jun/2021			

Released under RTI

Primary Location	Location	Sub Location	Carriageway Number	Chainage From	Chainage To	Priority	Status
A0113	20			6.73	6.73		
A0113	20			9.26	9.26		
A0113	20			4.00	4.00		
A0113	20			10.05	10.05		
A0113	20			7.12	7.12		
A0113	20			7.97	7.97		
A0113	20			9.58	9.58		
A0113	20			9.73	9.73		

Released under RTI

Comments

TAS POL 88-16082020 advised of fallen rocks/landslip onto the Tasman hwy. Advised at paradise gorge, described as at the end of the twisty part of just before Orford.

Advised the large rock that is held by a cable at Paradise Gorge Tasman High coming from Orford towards Buckland appears that it has moved and unstable.

Advised large rock has fallen on Tasman Hwy between Buckland and Orford unable to give clear location.

Report of boulder on Tasman Highway, 3km from Orford on the lane heading north REPEAT CALL, DISREGARD

Tas Police advised that on the Orford side of the Tasman Hwy there is a large rock on the road, ref: 186-6/2/2021

Advised Tasman Hwy Orford up from Orford Town heading to Buckland near large bend on left hand side large rock has chain around it appears it has moved and boulder is unstable. [see F21/1438] Hi. Any possibility of using the closure time on the Paradise Gorge stretch of road to remove the overhanging vegetation which makes an already narrow road even narrower. The trees around Paradise (The Prosser River) were trimmed recently but only the Buckland end. The Orford end is still a problem. F21/1262 - Hi, Not sure who to contact regarding this.

Released under RMA

Inspector	Responsibility Email	Master Request	CreatedOn	CreatedBy	ModifiedOn	ModifiedBy
ord. - Contr	[REDACTED]		16/Aug/2020 05:15	[REDACTED]	17/Aug/2020 09:41	[REDACTED]
			26/Oct/2020 14:11		28/Oct/2020 13:11	
			16/Dec/2020 09:37		16/Dec/2020 11:34	
			06/Feb/2021 11:27		09/Feb/2021 08:14	
			06/Feb/2021 10:30		09/Feb/2021 08:14	
			12/Mar/2021 14:12		26/Mar/2021 14:14	
			28/May/2021 08:58		31/May/2021 13:11	
			10/May/2021 15:43		03/Jun/2021 10:13	

Released under R

SiteName	External Reference	Asset ID	Longitude	Location Type 6	Location Type 7	Location Type 8	Location Type 9
DIER_SOUTH_STATEROADS			147.82745400				
DIER_SOUTH_STATEROADS			147.85252900				
DIER_SOUTH_STATEROADS			147.81509399				
DIER_SOUTH_STATEROADS			147.86132660				
DIER_SOUTH_STATEROADS			147.83094100				
DIER_SOUTH_STATEROADS			147.83976266				
DIER_SOUTH_STATEROADS			147.85659800				
DIER_SOUTH_STATEROADS			147.85767331				

Released under RTI

Location Type 10	Latitude	Callback Date	Locked On	Locked By	Locked Reason	Response Time	Location Description
	-42.55798800					10.00	Link 20 South
	-42.56107900					10.00	Link 20 South
	-42.58038347					10.00	Link 20 South
	-42.55886230					10.00	Link 20 South
	-42.55609100					10.00	Link 20 South
	-42.55974983					10.00	Link 20 South
	-42.55975000					10.00	Link 20 South
	-42.55944567					10.00	Link 20 South

Released under RTI

Original Request Number	Suburb	Region	Location Category	Action Required
RN08999				s 36 contractor call out
RN09751				Contractor call out.
RN10253				Contractor attended - 1A02946 (nothing found).
RN10744				Call out
RN10742				call out
RN11056				
RN11742				
RN11590				

Released under RTI

ID

8bce2be1-b966-40a8-ab49-76bab1d98909
6793701d-ad13-47d9-b716-9c062c8c54d4
baa6c6a3-4fcb-439d-9143-a3e8c6e9baab
5db677e9-988f-4018-9de5-fde4a5fa6976
0ef91d34-4316-4088-8c23-f1cddb5f54
3404e213-b84b-4c12-9002-92744856f84a
f43b9eb4-213c-4af8-b0e7-e678a93f778b
b278df1d-554c-4f1b-8b75-d0a9f0c5b559

Released under RTI

Employee

s 36

Date Of Incident

Time Of Incident

Advice Received From

Date Call Received

s 36

05/Mar/2020
02/Apr/2020
02/Apr/2020
23/Jun/2020
16/Aug/2020
16/Dec/2020
06/Feb/2021

Released under RTI

Time Call Received	Date Arrival At Site	Time Arrival At Site	Conforms With Response Time	Incident Location	Primary Location	Location
0.591666667	05/Mar/2020	0.628472222	TRUE		A0113	20
0.65625	02/Apr/2020	0.676388889	TRUE		A0113	20
0.666666667	02/Apr/2020	0.701388889	TRUE	Tasman hwy	A0113	20
0.350694444	23/Jun/2020	0.365277778	TRUE	Tasman hwy	A0113	20
0.21875	16/Aug/2020	0.274305556	TRUE		A0113	20
0.429166667	16/Dec/2020	0.456944444	TRUE		A0113	20
0.458333333	06/Feb/2021	0.515277778	TRUE		A0113	20

Released under RTI

Sub Location	Chainage From	Chainage To	Carriageway Number	Nonconformance Number	Traffic Management Centre Advised Safe
	5.10	9.92 A			
	7.26	7.26 A			
	9.04	9.04 A			
	10.87	5.40 A			
	6.03	6.03 A			
	10.61	10.61 A			
	9.18	9.18 A			

Released under RTI

Incident Description

Rocks and water over road.

Flooding and landslide

Road flooded debris and trees blocking road

Water over road

Land slip and water over road

Call out for large rock on road. Nothing found RN10253

Rock on road

Released under RTI

Condition At Time Of Incident

Damage To Property

Police Officer Attending

Police Station

Owner Of Vehicle

Owner Phone Number

Rain

Released under RTI

Owner Address Driver Of Vehicle Driver Phone Number Driver Address Driver Licence Number Vehicle Registration Insurance Details

Released under RTI

Witness Details	Completion Date	Police Event Number	Vehicle Make	Vehicle Model	Work Done Onsite	CreatedOn
	05/Mar/2020					05/Mar/2020 15:17
	03/Apr/2020					03/Apr/2020 12:14
	02/Apr/2020					02/Apr/2020 17:35
	23/Jun/2020					23/Jun/2020 08:46
	16/Aug/2020					16/Aug/2020 06:35
	16/Dec/2020					16/Dec/2020 10:58
	06/Feb/2021					06/Feb/2021 12:22

Released under RTI

CreatedBy
S 36

ModifiedOn
05/Mar/2020 15:56
17/Apr/2020 08:57
02/Apr/2020 17:55
23/Jun/2020 14:49
16/Aug/2020 17:44
16/Dec/2020 10:59
06/Feb/2021 12:31

ModifiedBy
S 36

SiteName
DIER_SOUTH_STATEROADS
DIER_SOUTH_STATEROADS
DIER_SOUTH_STATEROADS
DIER_SOUTH_STATEROADS
DIER_SOUTH_STATEROADS
DIER_SOUTH_STATEROADS
DIER_SOUTH_STATEROADS
DIER_SOUTH_STATEROADS

Total Cost Total Amount Claimed Total Amount Paid

Released under RTI

Total Claim Paid	Longitude	Latitude	Date Proposed	Team Leader Contacted	Follow Up Work Required	Response Time
FALSE	147.85975400	-42.55910800		FALSE	FALSE	0.063
FALSE	147.83235300	-42.55681600		FALSE	FALSE	0.063
FALSE	147.85045120	-42.55986340		FALSE	FALSE	0.063
FALSE	147.87097870	-42.55911100		FALSE	FALSE	0.063
FALSE	147.82474400	-42.56382900		FALSE	FALSE	0.063
FALSE	147.86820200	-42.55883000		FALSE	FALSE	0.063
FALSE	147.85000500	-42.55946600		FALSE	FALSE	0.063

Released under RTI

Primary Location Description	Lane Code	Lane Code Description	Locked On	Locked By	Locked Reason	Incident Type	Location Type 1
Tasman Hwy	PD-CD					FLOODING	South
Tasman Hwy						FLOODING	South
Tasman Hwy	PD-CD					FLOODING	South
Tasman Hwy	PD-CD					FLOODING	South
Tasman Hwy						DEBRIS ON ROAD	South
Tasman Hwy						OTHER	South
Tasman Hwy						DEBRIS ON ROAD	South

Released under RTI

Location Type 2 Location Type 3 Location Type 4 Location Type 5 Location Type 6 Location Type 7 Location Type 8 Location Type 9

Released under RTI

Location Type 10 Asset ID External Reference Suburb Region Job Number Location Category Work Order Date Work Order Number

02/Apr/2020

Released under RTI

Incident ID

IA02396 057711ab-489a-4ec5-bc20-b262e012462b
IA02455 7cecc549-1167-4e2b-a1d1-2d1de8eb0396
IA02448 c14dd50b-734b-4ad1-8c52-3f33f0f5519c
IA02578 8dc5f18e-2fdc-4ada-a893-fc5de759463c
IA02684 a8063136-8979-4196-b3d5-5bdeba05e098
IA02946 3d57187f-38cc-434f-bc96-a1a5750bc467
IA03060 54bf8652-4e5c-4c27-a5aa-5278a5944022

Released under RTIA