



Great South Land Minerals Ltd

**ONSHORE SEISMIC SURVEY
TRAFFIC MANAGEMENT PLAN**

February 2006
Project No. 1377.001



**GREAT SOUTH LAND
MINERALS
LIMITED**



**SCIENTISTS
ENGINEERS
MANAGERS &
FACILITATORS**



PREFACE

LIMITATIONS STATEMENT

This Traffic Management Plan (TMP) has been prepared in accordance with the scope of services agreed upon between SEMF Pty Ltd (SEMF) and Great South Land Minerals Ltd (GSLM) (the client). To the best of SEMF's knowledge, the report presented herein represents the Client's intentions at the time of printing of the report. However, the passage of time, manifestation of latent conditions or impacts of future events may result in the actual project and its impact differing from that described in this report.

In preparing this report SEMF has relied upon data, surveys, analysis, designs, plans and other information provided by the client, and other individuals and organisations referenced herein. Except as otherwise stated in this report, SEMF has not verified the accuracy or completeness of such data, surveys, analysis, designs, plans and other information.

No responsibility is accepted for use of any part of this report in any other context or for any other purpose by third parties.

This report does not purport to provide legal advice. Readers should engage professional legal advisers for this purpose.

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FOREWORD

Function of the Traffic Management Plan

This Traffic Management Plan (TMP) has been prepared to support Great South Land Minerals (GSLM) in their application for approval to the Department of Infrastructure, Energy and Resources (DIER), to undertake an onshore seismic survey over Tasmanian Basin.

The seismic survey will be the largest onshore seismic survey ever conducted in Tasmania. GSLM is committed to ensuring that there are no detrimental impacts on the natural environment resulting from survey operations. The TMP aims to address the requirements of DIER, prior to permits being issued to allow GSLM to undertake the seismic survey.

The TMP also provides information on public contact procedures and the infrastructure and environmental management techniques that will be employed by GSLM during the survey.

The proposed seismic survey and associated activities fall under the jurisdiction of Mineral Resources Tasmania (MRT) and the *Mineral Resources Development Act 1995*.

Role in the Approval Process

The TMP will support GSLM's applications for approval to DPIWE, DIER, and MRT to undertake an extensive seismic survey in Tasmania.



EXECUTIVE SUMMARY

GSLM is planning to undertake an extensive seismic survey in Tasmania utilising approximately 1,446km of existing roads. The seismic survey will use vibroseis trucks to assist in the exploration for onshore oil and gas deposits within the untested Tasmania Basin. A similar survey on a smaller scale was carried out by GSLM in 2001, which indicated the presence of large geological structures that could contain oil and gas. One of the objectives of the proposed 2006 survey is to undertake further research on these geological structures previously identified.

This TMP has been developed to assist GSLM in obtaining permits from DIER to undertake an onshore seismic survey in Tasmania during 2006. The seismic survey is proposed to travel along existing roads within southeastern Tasmania.

This report complies with the conditions of the DIER G2 Contract Management Plan and provides:

- A description of how the seismic survey will be undertaken;
- Information on Public Contact and how this will be managed by GSLM;
- Details of the Environmental Management approach that will be followed by GSLM and Terrex Seismic Pty Ltd;
- A detailed Traffic Management Plan (including signage layouts) to be used during the line surveying and pegging process, and during the seismic survey.



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Appendix B – DIER Conservation Sites

Appendix C – RPT Traffic Control at Work Sites Code of Practice (2004)

Appendix D – RTP Road Hazard Management Guide

Appendix E – DIER G2 Contract Management Plan

Appendix F – TMP Signage Layouts



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ABBREVIATIONS

DIER	Department of Infrastructure, Energy and Resources
DPIWE	Department of Primary Industries, Water and Environment
DTPHA	Department of Tourism, Parks, Heritage and the Arts
EMP	Environmental Management Plan
GSLM	Great South Land Minerals Ltd
km	kilometre
km ²	square kilometre
MRT	Mineral Resources Tasmania
RPT	Roads and Public Transport Division of DIER
SEMF	SEMF Holdings Pty Ltd
TALSC	Tasmanian Aboriginal Land and Sea Council
Terrex	Terrex Seismic Pty Ltd



1 INTRODUCTION

1.1 THE PROPONENT

The proponent is Great South Land Minerals Ltd (GSLM). GSLM is a fully owned subsidiary company of Empire Energy Corporation International (Empire Energy). GSLM is a Tasmania onshore oil and gas exploration company, and holds Special Exploration Licence 13/98 (SEL 13/98), comprising of 15,035km². The exploration licence may be partially relinquished or converted to a retention or mining lease at any time during the period it remains in force.

Great South Land Minerals Ltd
GPO Box 1603
Hobart, Tasmania 7001

Project Manager: Nicole Chesterman

Terrex Seismic Pty Ltd (Terrex) will be contracted by GSLM to undertake the seismic survey.

1.2 HISTORY OF THE PROJECT

The Tasmania Basin is an untested petroliferous (oil and gas producing) basin. The use of seismic surveys to identify prospective geological structures that could contain oil or gas is an established technique.

In 2001, GSLM and Terrex completed an onshore seismic survey covering 660km over the Central Highlands, Northern Midlands, and southeastern Tasmania. The initial interpretation, coupled with prior studies by GSLM, established that large geological structures exist south of Launceston and under the Central Highlands region. These structures are believed to have the potential to be petroleum traps.

In 2006, GSLM will undertake a larger onshore seismic survey, covering approximately 1,446km, which will be based on public roads. Approximately 1,100km of the survey will expand the regional coverage of seismic data, and 300km is aimed at more closely defining geological structures previously identified from the 2001 survey.

1.3 PROJECT TIMEFRAMES

The seismic survey will be undertaken in early in 2006, starting in April. The survey will take approximately 4 months to complete. Data interpretation will occur throughout the survey. A provisional timetable for the survey is outlined in Table 1. The seismic survey is proposed to start in the north of Tasmania, however the order in which the seismic lines are surveyed is subject to several factors e.g. the occurrence of public events such as Targa Tasmania and weather conditions.

Table 1: Proposed seismic survey timetable.

Activity	Duration	Timing
Preparatory works	1 month	Early March 2006
Seismic acquisition	3-4 months	Early April - July 2006
Demobilisation	2 weeks	July 2006



1.4 APPROVALS

The main legislative requirements that apply to the approval of this redevelopment is the *Mineral Resources Development Act 1995*. All operations fall under the jurisdiction of MRT, and will follow the Mineral Exploration Code of Practice and Special Exploration Licence conditions. Furthermore, MRT has also indicated that it is a condition that GSLM liaise with all other relevant authorities, including DPIWE and DIER.

1.5 CONSULTATION

A proactive consultation approach has been adopted with briefings regarding the seismic survey and operations being regularly undertaken with key stakeholders. The major stakeholder groups are as follows:

- State Government Agencies;
- Local Government; and
- The general public.

1.5.1 State Government Consultation

GSLM has consulted with several State Government departments, and the divisions, which have provided comments include but are not limited to:

- Department of Primary Industry, Water and Environment;
- Department of Tourism, Park, Heritage and the Arts; and
- Department of Infrastructure, Energy and Resources.

Other State government agencies and community groups, which have been consulted include:

- Mineral Resources Tasmania; and
- Tasmanian Aboriginal Land and Sea Council.

1.5.2 Local Government Consultation

GSLM has undergone extensive consultation with local Councils, in order to ensure that the councils are informed about the regional seismic survey planned for February 2006. Each council has been briefed regarding the seismic survey, how the survey will be carried out and the possible impacts of the survey. Councils have also been provided with information booklets to be provided to the general public.

1.5.3 Community Consultation

GSLM acknowledges the value of community input into carrying out an extensive exploration program such as a seismic survey. The methods used by GSLM to ensure public awareness of the seismic survey are outlined in Section 2.3.

Wherever practical, GSLM has aligned seismic lines along public roads. In cases where this is not possible, GSLM will consult with private landowners prior to and during the survey.

1.6 STRUCTURE OF THIS REPORT

A brief description of the structure of this report is provided in Table 2 below.



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Table 2: Brief Description of the TMP Report Structure

Section Heading	Brief Description of the Information Provided
Foreword	A brief description of the function of the TMP and the information it contains.
Executive Summary	A summary of the proposed seismic survey and information provided in the report in support of the environmental and planning approvals.
1.0 Introduction	Description of the proponent, the projects history, a list of relevant legislation, and consultation that has been undertaken by the proponent.
2.0 Seismic Survey Logistics	Description of the logistics of the seismic survey, and outlines environmental management measures that will be implemented.
3.0 Traffic Management Plan	Description of the TMP that Terrex and GSLM will follow during the seismic survey.



2 SEISMIC SURVEY LOGISTICS

2.1 INTRODUCTION

GSLM has been granted an approval in principal for the undertaking of the seismic survey in the State Road reservation areas by DIER, with the requirement of GSLM to provide further information regarding public contact, traffic management, environmental management and a list of State roads that will be affected. This section presents the logistics and methods of the seismic survey, and the environmental management measures that will be undertaken by GSLM and Terrex during the seismic survey.

2.2 SEISMIC SURVEY METHODOLOGY

Onshore seismic surveys use seismic energy generated through dropping or vibrating a heavy mass on the earth's surface or through detonation of explosive charges. GSLM will use vibroseis trucks, whereby a vibrating baseplate is lowered to the ground and the weight of the truck is then placed over the vibrating baseplate.

The energy from the vibration radiates outwards in all directions from the vibrating baseplate. When the seismic waves reach geological formations with different structural properties the seismic waves are reflected or refracted. The seismic waves are recorded at the surface by geophones placed on the ground. The structure of subsurface geological structures are mapped by interpreting the variations in the times taken for the seismic waves to return to different points along the surface after reflection from the geological structure.

The vibration plate does not jump on or pound the road surface and as a result, there is no damage to the structural integrity of the road. This is illustrated below; the two photos indicate the lack of damage to both sealed and unsealed roads after the seismic trucks have vibrated the road (Plates 1 and 2). The proposed seismic survey will not have a detrimental impact on roads and this was demonstrated in 2001 during the previous seismic survey conducted by GSLM using the same equipment.

Terrex will adjust the survey point intervals as necessary during the seismic survey to ensure that the survey will not be undertaken directly over culverts or bridges to prevent the possibility of the survey damaging these structures.

Plate 1: Bitumen road after vibrating by seismic survey truck

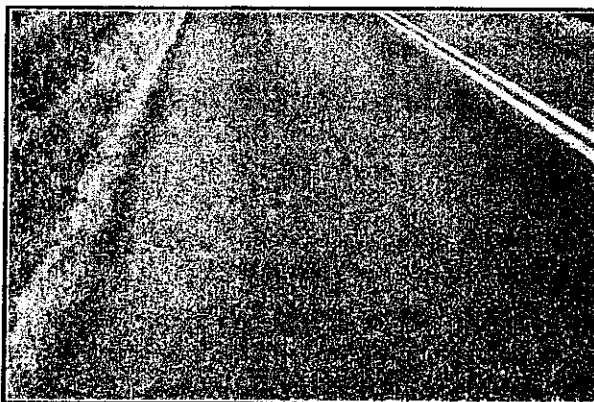


Plate 2: Gravel road after vibrating by seismic survey truck





2.3 PUBLIC CONTACT

2.3.1 Impact on Public Events

The seismic survey will be conducted on public roads, and therefore could affect public events that also utilise the public road system. GSLM is committed to working with local councils and government to identify any public events scheduled for the same time as the survey. The seismic survey has some degree of flexibility and without the need for seismic lines to be surveyed in a specific order, GSLM will coordinate the surveying of seismic lines to avoid clashes with public events.

As of the 6th February, GSLM does not have a confirmed survey schedule and as a result is somewhat limited in identifying public events that are planned to occur at the same time as the survey. Pegging of survey lines is anticipated to begin in mid-March, with the actual survey commencing in early April and finishing in late July. GSLM has been actively liaising with local councils and this will continue in earnest once a survey schedule is confirmed, and throughout the survey process.

Targa Tasmania is a well-known public event that has been identified by GSLM to occur within the proposed survey time period, with the planned route of Targa Tasmania passing along several roads that are included in the seismic survey. GSLM will ensure that any roads that are identified as part of the survey and that also form part of the Targa Tasmania route will not be surveyed during Targa Tasmania operations. GSLM will liaise with Targa Tasmania and relevant local councils to facilitate this process.

2.3.2 Provision of Information

GSLM has undertaken an extensive public contact program to ensure that the general public is well informed of how the survey will be carried out and the significance of the research.

To ensure public awareness and comment prior to and during the survey in 2006, the following measures will be undertaken:

- Information and schedule information in Local Government Gazettes
- Information and schedule information as Public Notices in local newspapers (e.g. The Mercury, The Advocate, The Examiner)
- Articles in local newspapers;
- Extensive media campaign including news interviews following the commencement of the survey;
- Provision of public information brochures available through Local Government Councils and from GSLM; and
- Information provided on website: <http://www.greatsouthlandminerals.com>

2.4 ENVIRONMENTAL MANAGEMENT

2.4.1 Environmental Screening Reports

Seismic lines can be easily deviated to avoid affecting environmental values such as threatened species of plants or animals, or significant native vegetation.

As part of the seismic survey planning process, environmental screening reports for the sections of State roads that the survey is proposed to travel along has been undertaken using the Roads and Public Transport Division (RPT) environmental database. The environmental screening reports provide information regarding threatened species, archaeological sites, habitat values, and environmental threats for the land within the road



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reserve. The reports also clearly identifies any vegetation communities that are managed by DIER.

Threatened Plant Communities

DIER is responsible for the management of a large area of land incorporated in its roadside reserve system. Roadside reserves vary due to factors including their shape and size, variety of users and impacts, tenure and primary use as a transport corridor. Many of DIER's roadsides contain patches of remnant vegetation that present valuable populations of rare and threatened plant species; priority vegetation communities; corridors for wildlife movement; wildlife habitat; and old growth/heritage trees. DIER is obliged to protect and conserve plant and animal species listed under state and federal legislation as threatened species or critical habitat. A number of critical species and habitats have been identified as being a priority for pro-active management in the State roadside reserve network. These occur where roadside populations are important to the conservation of the species, where the adjacent vegetation has been destroyed or is vulnerable to farming practices.

The environmental screening reports indicated that are 7 sites of high conservation priority that are managed by DIER along the State roads that GSLM propose to conduct the seismic survey on. A summary of these sites and the required management approaches is provided in Table 3. Maps showing the location of these sites, detailed information, and the GPS coordinates are provided in Appendix B.

Table 3: DIER managed conservation sites.

State Road	Location on State Road	Proposed Seismic Line	Conservation Site	DIER Requirements
Midlands Hwy	Link 57 (2.95-2.98)	TB02-EB	14	No operations to occur within this area without consulting DIER Environmental Planner
Tasman Hwy	Link 36 (8.2-9.13)	TB02-FE	39, 40, 41	No operations to occur within this area without consulting DIER Environmental Planner
Tasman Hwy	Link 38 (0.00-0.45)	TB02-FB	42, 43	No operations to occur within this area without consulting DIER Environmental Planner
Tunnack MR	Link 57 (2.67-2.77)	TB02-BG	Population of <i>Lepidium hyssopifolium</i> *	No operations to occur within this area without consulting DIER Environmental Planner

*Note: This site does not have a DIER conservation site number.

Greening Australia has developed a series of markers called 'Enviromark' (Figure 1). These markers have been installed at the start and end of each of the DIER conservation sites. The conservation sites are generally the area from the back of the table drain to the fence boundary, not including any areas maintained for road safety.



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Figure 1: Greening Australia 'Enviromark' sign.

During surveying and pegging out the seismic lines by Terrex, the conservation areas managed by DIER will be clearly marked using a specific flagging tape. GSLM will ensure that the Terrex personnel are aware of the significance of these areas and the required DIER management measures as indicated in Appendix B.

To avoid detrimental environmental impacts on all plant communities present on the sides of the roads, Terrex will ensure that the seismic trucks only pull over for rest breaks etc in established areas such as gravelled pull off areas. These will be clearly identified by the surveyors during the line pegging process.

Aboriginal Heritage

Environmental screening reports also provide information on the location of Aboriginal heritage sites. Several Aboriginal heritage sites were identified in the screening reports that could occur within the areas that the seismic survey will be occurring.

To ensure protection of the Aboriginal heritage sites during the seismic survey, the Aboriginal Heritage Office (Department of Tourism, Parks, Heritage and the Arts, DTPHA) and the Tasmanian Aboriginal Land and Sea Council (TALSC) have been consulted.

An assessment of the possible conflict between heritage sites and the seismic survey DTPHA and TALSC is currently underway and appropriate management measures will be identified. GSLM will continue to liaise with DTPHA and TALSC during survey preparation and during the actual survey

European Heritage

Numerous European heritage sites were identified as occurring within the roadside reserve along State roads that the seismic trucks will be travelling along. However, as the seismic survey operation will remain on the road verge or within areas currently disturbed by road maintenance operations, there will be no impact on these heritage sites.

2.4.2 Environmental Management Plan

The Threatened Species Unit (TSU) of DPIWE has granted GSLM with approval in principal for the undertaking of the seismic survey in the State Road reservation areas, with the requirement for GSLM to identify areas where threatened species could be impacted on by the seismic survey. A consultant botanist has reviewed the seismic lines



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and the possible impacts on known plant communities. A separate Environmental Management Plan (EMP) has been developed to ensure that there will be no detrimental impacts on threatened species during the seismic survey. GSLM will ensure that all personnel associated with the seismic survey are familiar with the EMP and are aware of the importance of protecting threatened species.

2.4.3 DIER Requirements

Once seismic survey operations commence, GSLM will be required to maintain contact with Stephanus Vermaak, DIER, to ensure that the seismic survey does not impact on State roads or the roadside reserve plant communities. It is possible that the seismic lines will change prior to and during the survey. Should this occur, Stephanus Vermaak will be the first point of contact.



3 TRAFFIC MANAGEMENT PLAN

3.1 INTRODUCTION

The utilisation of public roads for the vast majority of the seismic survey results in potential hazards arising related to traffic management. To address the requirements of the Roads and Public Transport Division (RPT) of DIER, a traffic management plan has been developed in conjunction with GSLM and the Traffic Engineering Branch of RPT. The traffic management plan complies with the RPT Traffic Control at Work Sites Code of Practice 2004 (and associated revisions) (Appendix C), refers to the RPT Road Hazard Management Guide (Appendix D), and reference to the specifications detailed in the DIER G2 – Contract Management Plan (Appendix E) are made.

This Traffic Management Plan (TMP) has been prepared for Terrex for survey work to be undertaken along approximately 1400km of State, Local Government, Forestry Tasmania and private roads in the central and southeastern region of Tasmania.

The purpose of the plan is to safely manage the movement of vehicles past the site of survey work.

3.2 REFERENCES

This TMP has been prepared in accordance with the requirements of Australian Standard AS 1742.3-2002 (Manual of Uniform Traffic Control Devices – Traffic Control Devices for Works on Roads) and Traffic Control at Work Sites – Department of Infrastructure, Environment and Resources Code of Practice, June 2004.

3.3 REGULATIONS

All vehicle movements are subject to the relevant laws and legislation governing the use of vehicles on public roads. These include but are not limited to:

- Tasmanian Vehicle and Traffic Act 1999
- Tasmania Traffic (General and Local) Regulations 1956, and relevant amendments
- Australian Standard AS 1742.3-2002
- Traffic Control at Work Sites – DIER Code of Practice, June 2004

3.4 PROPOSED WORK

The work to be undertaken by Terrex comprises a seismic survey associated with the exploration of natural oil and gas deposits.

The seismic survey is carried out using a low energy acoustic source (vibroseis) generated with Hemi 44, 44,000 lb peak force vibrator units. Three units truck mounted units will be used during the survey.

The acoustic source will be placed at 20 metre intervals along predefined seismic source lines. The source will be stopped for approximately 45 seconds at each interval. Where possible, the vibrator units will be positioned off the road.

Cables and geophones required along the source lines for recording of seismic data are positioned and retrieved in multi-phased operations by two separate work crews at the front and rear of the works site.

Prior to the seismic survey being undertaken, a survey crew travels the proposed source line and installs survey pegs for the seismic crew to follow. This will occur at least 2 to 3 weeks in advance of the seismic survey.



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All works will be restricted to one side of the road reserves and survey trucks will not stop at intersections.

3.5 PROPOSED HOURS OF OPERATION

The proposed working hours of the survey crews will be daylight hours for seven days per week.

At the completion of the survey each day, all vehicles will be driven to Terrex's place of accommodation for that evening. Only rarely may the trucks with vibrator units be left in the vicinity of the current area of survey, however, the trucks would only be left in an area safe to do so and not at the side of the road.

3.6 PROPOSED PROGRAM

The survey work is scheduled to commence in early April 2006 (subject to Terrex's operational constraints). The expected completion date, based on surveying approximately 10km of source line per day, is late July 2006.

As the survey work proceeds, the project completion date will be reviewed and updated information provided to DIER and other authorities as required.

3.7 PROPOSED SURVEY VEHICLES

Initial pegging of the source line will require one work vehicle with two other vehicles required for management of traffic movements past the work site (Refer Signage Layouts in Appendix F).

The seismic data survey will involve three active seismic vibrator units, two personnel carriers and six 4WD utilities, as well as one truck used for recording of the seismic survey data. The personnel carriers and recording truck are not shown in the appended Signage Layout plans.

The vibrator unit trucks are all terrain, six wheel drive vehicles approximately 9.5m long, 3.3m high and 2.4m wide.

3.8 TRAINING

Terrex is committed to organising relevant training for the seismic crew with the appropriate State bodies prior to the commencement of the survey. If time does not permit, Terrex will organise for a State contractor to work with the seismic crew.

In order to manage the possible impacts associated with vehicle use during the seismic survey, all vehicles will be maintained in good mechanical condition and carry appropriate State Road Traffic Act Regulation and National Heavy Vehicle Accreditation Scheme (HVAS) Notices. Terrex will also ensure that drivers will take special precautions on road sections where line of sight is limited.

Prior to the commencement of the survey, the key Terrex personnel will undertake the traffic management training course facilitated by the Tasmanian Building and Construction Industry Training Board as required by the Traffic Control at Work Sites Code of Practice.

Inductions for all survey personnel prior to the commencement of work will include traffic management, safety and environmental training.

3.9 TRAFFIC CONTROL EQUIPMENT

Signs and delineators will be installed in accordance with AS1742.3 and the DIER Traffic Control at Work Sites Code of Practice 2004. Signage will be supplied by Terrex.

Signs will be removed at the completion of each days work.



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Signs and devices will be examined each day to ensure they are in good mechanical condition, are clean and will remain effective during the works.

Following erection, personnel will carry out a functional inspection of signs and devices before and after opening to traffic.

All Terrex vehicles will be fitted with flashing yellow lights and an illuminated flashing arrow sign as required.

All personnel within the survey area will be wearing high visibility clothing.

3.10 ROADS AFFECTED BY THE SURVEY

There are 35 proposed survey lines that traverse southeastern Tasmania. The survey will be undertaken along State, Local Government, Forestry Tasmania and private roads.

State roads are categorised into 5 Classes as described in Table 4.

Table 4: Classification of State Roads.

Road Class	Type	Speed Limit	Width	Vehicles per day
Category 1	Trunk Roads	Up to 110 km/hr	3.5m wide lanes min 2.0m wide shoulder	At least 2500 v per day with some sections more than 5000 v per day
2	Regional Freight Roads	100 km/hr	3.5m wide lanes min 1.6m shoulder	Average between 1000 and 5000v per day
3	Regional Access Roads	80 km/hr	3.0m lanes 1.0m wide shoulder	Average between 1000 and 5000v per day
4	Feeder Roads and	60 km/hr	2.75m wide lanes and 0.6m shoulder	Average below 1000 v per day
5	Other State Roads	60 km/hr	Sealed and unsealed	Comprise lower volume roads, forestry and property access roads

The 17 State roads along which the survey will be undertaken have been identified and are presented in Table 5.

Table 5: State roads travelled on during proposed seismic survey.

State Road	Road Class / Category
Midland Highway	1
Tasman Highway	3 / 4
Arthur Highway	3
Channel Highway	3 / 4
Huon Highway	2 / 4
Lyell Highway	2 / 3
Tunnack Main Road	5
Glen Huon Main Road	5



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State Road	Road Class / Category
Lollara Main Road	5
Nicholls Rivulet Main Road	5
Lake Leake Main Road	5
Poatina Main Road	4
Fingerpost Main Road	3
Ranelagh Secondary Road	5
Lake Highway	4
Mud Walls Secondary Road	5
Marlborough Secondary Road	5

The relevant link and chainages for each State road that the survey will pass over are provided in Appendix A. Individual seismic lines may traverse along or across the State roads.

Local government roads vary in formation width and have a speed limit generally of 60 or 80 km/hr. The local government roads comprise both sealed and unsealed pavements and shoulders.

Forestry Tasmania roads are categorised in 4 classes – primary 2 lane access, semi-main 2 lane access, all weather single lane access, or seasonal single lane access.

3.11 DELAYS IN PROPERTY ACCESS

It is not expected property owners will be adversely delayed in gaining access to properties off roads along which the survey is being undertaken. If a seismic test has already started opposite a property entrance point at the time property access is required, the delay should be no longer than 1 minute.

3.12 TERREX SITE SUPERVISORS

The Terrex supervisor nominated for this project is Richard Barnes (08 9434 4388).

Terrex will designate site supervisors prior to the commencement of any survey related operations. The site supervisors will be responsible for the supervision and organisation of the survey crews and vehicles and have on-site responsibility for the implementation of the Traffic Management Plan. The site supervisors will ensure that safety is maintained while achieving best efficiencies and works practices.

3.13 COMMUNICATION

Communication across the site of works between Terrex personnel is available by the use of Mobile telephones, UHF radios and VHF radios, including portable 2-way radios.

3.14 SITE RECORDS

The Site Supervisor or his nominated delegate is responsible for generating and maintaining the following site records.

Site records include:

General

- Site toolbox meetings
- Daily diaries



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Quality

- Procedural checklists
- Inspection records
- Test records
- As constructed details
- Subcontractors quality records
- Site quality audits

Safety

- Site safety assessments
- Daily traffic safety audits
- Site personnel inductions
- Site Safety Audits
- Accident/incident investigations

Environmental

- Environmental site assessments
- Site environmental audits

Daily recording related to the works site will be undertaken in accordance with the requirements of AS 1742.3.

3.15 PUBLIC SAFETY

Public safety will be maintained during the survey work by implementing the following processes:

- Public access to the site will be controlled using relevant signage on footways and cycleways.
- Existing footpaths will be maintained for pedestrian use during the works and protected crossing points provided as required.
- Access past the site will be controlled in accordance with the traffic management plan.
- Lighting for public safety will not be required as the survey work will not be undertaken outside daylight hours.

Whilst it is not expected that there will be any significant lengths of defined footways or cycleways along the majority of the route of the survey any requirement to provide warning to pedestrians or cyclists will be assessed by Terrex's site supervisor.

3.16 TRAFFIC REQUIREMENTS

Wherever possible, two way traffic past the site of work will be maintained.

As part of the general site management, traffic volumes and delay durations will be monitored to minimise problems and determine if there is unreasonable inconvenience caused to road users.

3.17 ROAD CLOSURES

There will not be a need to close any roads to undertake the survey.

3.18 TARGA TASMANIA

Targa Tasmania will be held from the 25th to 30th April.



GSLM will ensure that no seismic survey or initial pegging is undertaken along the stage routes of Targa on the day of racing.

3.19 EMERGENCY SERVICES ACCESS

It is imperative that access is maintained for emergency services vehicles at all times during the works and movement of these vehicles past the site will be given preference over the undertaking of the survey work and also movement of other vehicles. Emergency vehicles will not be impeded by the works.

3.19.1 Emergency Procedures

Constant monitoring of the progress of works and road conditions will be required to avoid potential delays to other road users.

In the event that a traffic delay occurs the process will be:

- Site Supervisor develops Management Plan to control the delay
- Survey Contractor is notified of requirements
- The necessary authorities are advised of the plan
- Site Supervisor instigates plan and works proceed

3.19.2 Accidents

Any transport or traffic emergencies i.e.; vehicle breakdown, vehicle accident, vehicle fire, major environmental incident, serious accident causing injury, or other life threatening situation noticed by Terrex personnel will be actioned by:

- Raising the alarm by informing the Site Supervisor and/or emergency services
- Assisting if able to do so (e.g. First aid treatment)
- Awaiting further instructions from the Site Supervisor
- Only returning to the site when the "all clear " is given by the Site Supervisor
- Only leaving the accident site when the "all clear " is given by the Site Supervisor or the controlling public authority
- All site personnel are responsible to ensure that details of the incident are reported to the Site Supervisor.

3.20 APPROVALS

The GSLM is responsible for obtaining approval of the TMP from the relevant authority prior to commencing the works. The TMP documentation will shall be supplied to the site supervisors/ team leaders prior to the commencement of works.

Prior to issuing any changes to the TMP, the approval of the relevant authority will be sought.

3.21 TRAFFIC MANAGEMENT SIGNAGE LAYOUT

Traffic Management Signage Layouts have been prepared for both the initial pegging and survey work and the seismic survey work (Appendix F)

As the work being undertaken is treated as short term and low impact work, a risk assessment has been undertaken in accordance with AS1742.3. The risk assessment is provided in Appendix G.



Onshore Seismic Survey Traffic Management Plan Great South Land Minerals Ltd



Five signage layouts have been prepared for each of the initial survey and seismic survey work, representing the 5 state road categories (Category 4 & 5 on the same layout) and also the local government, forestry and private roads.

The signage requirements shown reflect what would be the typical requirement, however, the site supervisor will need to constantly assess traffic volumes, road widths, road conditions and sight distances etc. in order to evaluate whether additional control measures are required.

In the case of 'Other Roads – Private', where there is expected to be no traffic past the work site and therefore signage and warning devices required would only need to be the minimum to ensure the safety of the contractors personnel during works.

The site supervisor will be responsible for coordinating the placement of warning signs on roads intersecting the survey route to provide warning to approaching traffic. In most cases a Workers (T1-5) sign will be appropriate in this instance.



APPENDICES

Appendix A:	
List of State Roads Affected by Seismic Survey.....	
Appendix B:	
DIER Conservation sites	
Appendix C:	
RPT Traffic Control at Work Sites Code of Practice	
Appendix D:	
RPT Road Hazard Management Guide.....	
Appendix E:	
DIER G2 Contract Management Plan	
Appendix F:	
TMP Signage Layouts.....	
Appendix G:.....	
Seismic Survey Risk Assessment	

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Onshore Seismic Survey Traffic Management Plan
Great South Land Minerals Ltd



Appendix A:

List of State Roads Affected by Seismic Survey

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STATE ROADS PROPOSED TO BE USED DURING SEISMIC SURVEY

State Road Name	State Road Number	Link(s) / Drainage Sections	Corresponding Seismic Line
Tunnack MR	1138	5 (0-7.02), 57 (0-11.50), 94 (0-3.79) 5(2.38-5.21)	TB02-BG TB02-EC
Nicholls Rivulet MR	1248	crosses at 94(0.00) 5(0-6.30), 94(0-11.46)	TB02-EA TB02-CG
Lake Leake MR	1442	05(0-4.12), 17(0-11.89), 36 (0-9.63), 48 (0-4.03), 58 (0-7.34), 70 (0-7.05), 84 (0-8.09), 94 (0-5.45) line ends at 36(2.39)	TB02-FA TB02-EL
Pootina MR	1604	05(0-5.80), 12(0-7.41), 25(0-11.52), 40(0-11.17), 54(0-5.03)	TB02-BA
Fingerpost MR	1691	5(0-7.38)	TB02-EQ
Ranelagh SR	2072	5(0.00-2.69)	TB02-CF
Lake Hwy	2100	49 (0.00-0.80) crosses at 18(0.00)	TB02-BA TB02-BB
Mud Walls SR	2290	crosses at 44(1.71)	TB02-BI
Midland Hwy	0087	57(2.96-4.63) 43(5.5-7.11) 49 (5.55-5.73) 49 (5.35-5.55) starts at 57(0.00) crosses at 43(0.04) crosses at 55(4.52) crosses at 57(3.64) crosses at 62(10.11)	TB02-EB TB02-ED TB02-EE TB02-EF TB02-EI TB02-BG TB02-EK TB02-EL TB02-EM
Tasman Hwy	0113	11 (8.82-9.94), 12(0-8.43), 15(0-9.63), 16(0- 11.30), 18(0-5.22) 18 (0-10.54), 20 (0-10.91), 23 (0-8.81), 25 (0- 9.93), 27 (0-10.15), 29 (0-10.36), 31 (0-8.44), 33 (0-10.24), 38 (0-9.13) 38(0-10.29), 40(0-11.77), 42(0-10.16) line ends at 18(5.22)	TB02-EP TB02-FE TB02-FB TB02-EO
Arthur Hwy	0142	5(0-7.27), 9(0-7.00)	TB02-EQ
Channel Hwy	0155	82(0.00-8.77), 94(0.00-8.75) 18(0-10.40), 29(0-1.87) 69(8.90-10.88), 82(0.00-0.43) 9(6.94-7.45) crosses at 18(10.40)	TB02-CF TB02-CH TB02-CG TB02-CI TB02-CG
Huon Hwy	0168	17 (0-9.51), 26 (0.00-2.49)	TB02-CD
Marlborough SR	2443	crosses at 44(9.06)	TB02-AA
Lollara MR	1196	5 (0.00-3.64)	TB02-CD
Lyell Hwy	0197	08 (0-7.69), 12 (0-11.32), 14 (0-7.32), 16 (0-6.58), 20 (0-10.71), 23 (0-0-7.28), 25 (0-7.07), 28 (0- 8.84), 30 (0-6.82), 33 (0-7.30), 35 (0-10.76), 38 (0- 11.50), 43 (0-7.51), 46 (0-7.37) crosses at 28(0.00) crosses at 51(0.00)	TB02-BD TB02-BB TB02-BH

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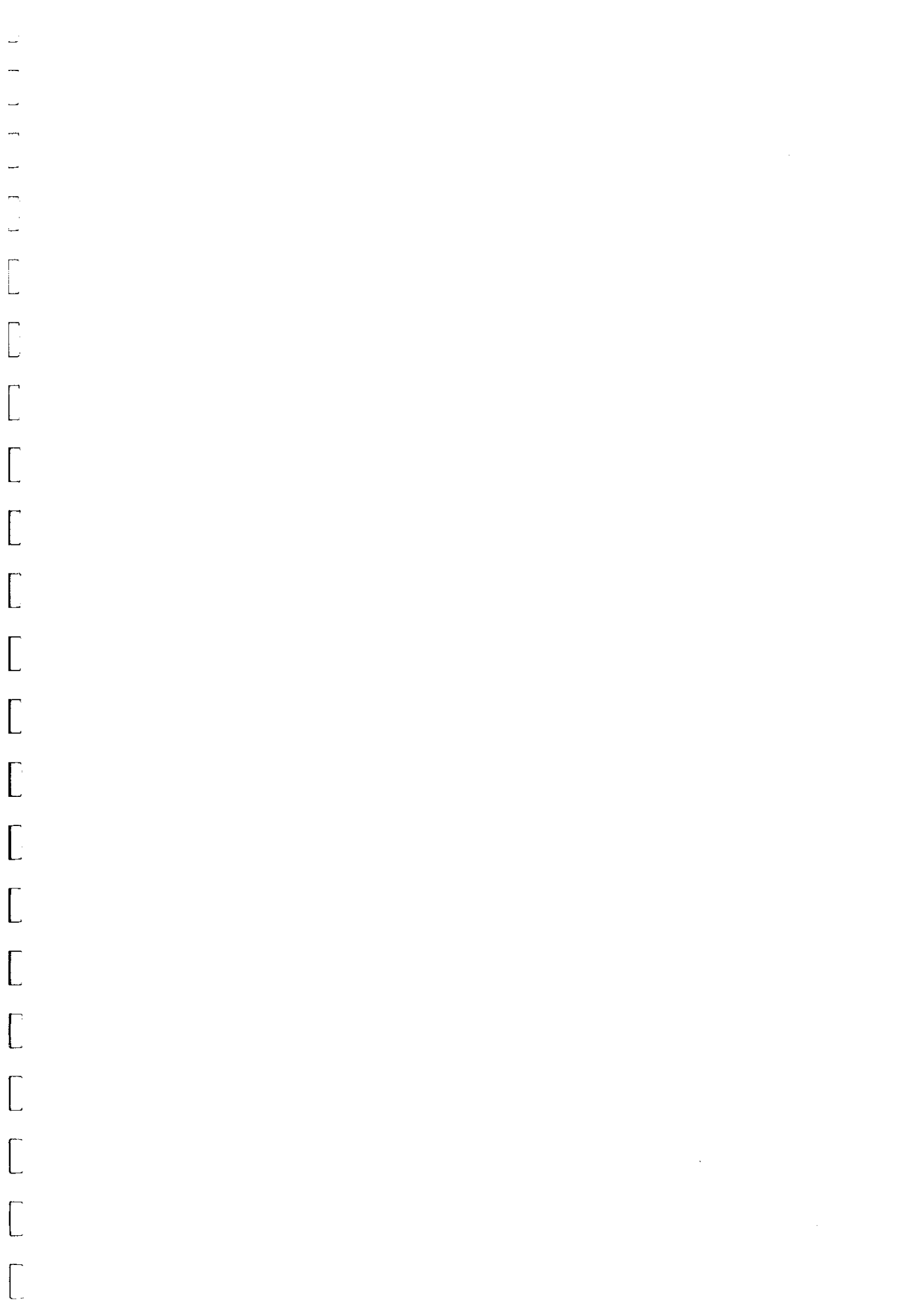
Onshore Seismic Survey Traffic Management Plan
Great South Land Minerals Ltd



Appendix B:
DIER Conservation sites

APPENDIX 1a: Grid Coordinates for Conservation Sites (GDA 94)

Conservation Site No.	Project Management Category	Species Site No.	Side	EASTING START	NORTHING START	EASTING END	NORTHING END
1	Orchids	1	R	571,030.50	5,236,111.40	570,977.80	5,235,971.50
2	Orchids	2	R	573,151.50	5,242,508.70	574,000.30	5,241,300.00
3	Viminaria juncea	1	L+R	601,560.40	5,341,913.10	601,583.90	5,341,816.20
4	Eucalyptus morrisbyi	1	R	541,211.00	5,243,731.50	541,202.30	5,243,682.30
5	Lepidium hyssopifolium	1	R	518,081.59	5,283,089.00	518,044.10	5,283,455.30
6	Lepidium hyssopifolium	2	L	527,560.10	5,259,871.80	527,430.10	5,259,994.40
7	Lepidium hyssopifolium	3	L	517,445.10	5,286,772.60	517,382.30	5,286,850.30
8	Lepidium hyssopifolium	5	L	TBA			
9	Lepidium hyssopifolium	6	L	604,466.40	5,402,346.60	604,506.20	5,402,376.90
10	Austrodanthonia popinensis	1	L	522,123.60	5,272,829.50	522,205.10	5,272,862.10
11	Austrodanthonia popinensis	2	L+R	520,246.10	5,276,816.20	518,924.20	5,278,802.10
12	Austrodanthonia popinensis	3	L+R	516,944.10	5,290,470.80	516,637.30	5,291,478.90
13	Austrodanthonia popinensis	4	L+R	515,782.20	5,292,509.00	514,774.70	5,296,949.10
14	Austrodanthonia popinensis	5	L+R	539,980.50	5,345,892.00	539,975.30	5,345,921.50
15	Tunbridge Grassland	8	R	534,115.60	5,333,542.40	534,280.90	5,333,655.30
16	Tunbridge Grassland	4	L	534,115.60	5,333,542.40	534,280.90	5,333,655.30
17	Tunbridge Grassland	9	L	534,414.20	5,333,803.30	534,493.90	5,333,985.40
18	Tunbridge Grassland	2	L	534,913.70	5,334,891.60	535,218.80	5,335,346.80
19	Tunbridge Grassland	3	R	534,913.70	5,334,891.60	535,048.20	5,335,101.50
20	Tunbridge Grassland	7	L	535,417.00	5,335,571.10	535,551.50	5,335,780.50
21	Tunbridge Grassland	6	R	535,499.60	5,335,695.40	535,524.80	5,335,738.40
22	Tunbridge Grassland	1	L	535,632.70	5,335,906.10	535,820.40	5,336,200.40
23	Tunbridge Grassland	5	R	535,660.30	5,335,947.70	535,768.40	5,336,115.20
24	Holyman Avenue Grassland	1	R	539,186.90	5,257,440.90	539,924.60	5,257,723.40
25	Holyman Avenue Grassland	2	L	539,186.90	5,257,440.90	539,924.60	5,257,723.40
26	Wanstead Grassland	1	L	538,476.40	5,363,596.50	538,426.50	5,363,737.60
27	Wanstead Grassland	2	R	538,459.40	5,363,643.40	538,426.50	5,363,737.60
28	Wanstead Grassland	3	L	538,239.30	5,364,306.30	538,040.60	5,364,923.60
29	Wanstead Grassland	4	R	538,161.50	5,364,543.40	538,070.60	5,364,828.60
30	Avoca Grasslands	1	R	549,158.90	5,371,044.90	549,541.60	5,371,152.60
31	Avoca Grasslands	2	R	549,791.30	5,371,135.10	549,890.70	5,371,125.30
32	Avoca Grasslands	3	R	550,135.40	5,371,080.30	550,309.80	5,370,983.20
33	Avoca Grasslands	4	R	550,828.50	5,370,872.30	550,928.20	5,370,887.10
34	Avoca Grasslands	5	R	551,125.60	5,370,916.90	551,869.80	5,370,968.10
35	Avoca Grasslands	6	R	552,266.30	5,370,918.00	552,363.90	5,370,895.66
36	Avoca Grasslands	7	R	552,809.20	5,370,888.40	553,059.00	5,370,898.10
37	Avoca Grasslands	8	R	553,158.80	5,370,905.00	553,743.90	5,371,035.70
38	Avoca Grasslands	9	R	554,383.00	5,371,136.30	555,482.50	5,371,111.30
39	Tasman Highway Lake Leake Junction	1	R	587,669.00	5,343,311.60	587,416.10	5,343,730.30
40	Tasman Highway Lake Leake Junction	2	L	587,416.10	5,343,730.30	587,124.20	5,344,048.50
41	Tasman Highway Lake Leake Junction	3	L	587,594.40	5,343,442.00	587,470.10	5,343,659.50
42	Tasman Highway Lake Leake Junction	4	L	587,124.20	5,344,048.50	587,140.00	5,344,243.50
43	Tasman Highway Lake Leake Junction	5	R	587,165.40	5,344,368.30	587,134.70	5,344,483.90



APPENDIX 1b: Road Link Map Locations for Conservation Sites (DIER)

Conservation Site No.	Project Management Category	Species Site No.	Road No.	Side	Start Link No	Start Chainage	End Link No.	End Chainage
1	Orchids	1	A0142	R	73	4.65	73	4.8
2	Orchids	2	A0142	R	56	3.5	56	5.05
3	Viminaria juncea	1	A2632	L+R	51	8.45	51	8.55
4	Eucalyptus morrisbyi	1	A2069	R	5	10	5	10.05
5	Lepidium hyssopifolium	1	A0087	R	20	0.45	20	0.81
6	Lepidium hyssopifolium	2	A0029	L	5	6.2	5	6.39
7	Lepidium hyssopifolium	3	A0087	L	20	5	20	5.1
8	Lepidium hyssopifolium	5	A1125	L	47	6.49	47	6.5
9	Lepidium hyssopifolium	6	A0113	L	53	10.22	53	10.37
10	Austrodanthonia popinensis	1	A2289	L	5	1.96	5	2.05
11	Austrodanthonia popinensis	2	A0087	L+R	15	2.6	15	5
12	Austrodanthonia popinensis	3	A0087	L+R	20	8.85	20	9.91
13	Austrodanthonia popinensis	4	A0087	L+R	24	1.35	24	5.95
14	Austrodanthonia popinensis	5	A0087	L+R	57	2.95	57	2.98
15	Tunbridge Grassland	8	A0087	R	49	9.10	49	9.30
16	Tunbridge Grassland	4	A0087	L	49	9.10	49	9.30
17	Tunbridge Grassland	9	A0087	L	49	9.50	49	9.70
18	Tunbridge Grassland	2	A0087	L	55	0.20	55	0.75
19	Tunbridge Grassland	3	A0087	R	55	0.20	55	0.45
20	Tunbridge Grassland	7	A0087	L	55	1.05	55	1.30
21	Tunbridge Grassland	6	A0087	R	55	1.20	55	1.25
22	Tunbridge Grassland	1	A0087	L	55	1.45	55	1.80
23	Tunbridge Grassland	5	A0087	R	55	1.50	55	1.70
24	Holyman Avenue Grassland	1	A0113	R	7	12.00	7	12.80
25	Holyman Avenue Grassland	2	A0113	L	7	12.00	7	12.80
26	Wanstead Grassland	1	A0087	L	68	7.10	68	7.25
27	Wanstead Grassland	2	A0087	R	68	7.15	68	7.25
28	Wanstead Grassland	3	A0087	L	68	7.85	68	8.50
29	Wanstead Grassland	4	A0087	R	68	8.10	68	8.40
30	Avoca Grasslands	1	A1125	R	21	1.15	21	1.55
31	Avoca Grasslands	2	A1125	R	21	1.80	21	1.90
32	Avoca Grasslands	3	A1125	R	21	2.15	21	2.35
33	Avoca Grasslands	4	A1125	R	21	2.90	21	3.00
34	Avoca Grasslands	5	A1125	R	21	3.20	21	3.95
35	Avoca Grasslands	6	A1125	R	21	4.35	21	4.45
36	Avoca Grasslands	7	A1125	R	21	4.90	21	5.15
37	Avoca Grasslands	8	A1125	R	21	5.25	21	5.85
38	Avoca Grasslands	9	A1125	R	21	6.50	21	7.60
39	Tasman Highway Lake Leake Junction	1	A0113	R	36	8.20	36	8.69
40	Tasman Highway Lake Leake Junction	2	A0113	L	36	8.69	36	9.13
41	Tasman Highway Lake Leake Junction	3	A0113	L	36	8.35	36	8.60
42	Tasman Highway Lake Leake Junction	4	A0113	L	38	0.00	38	0.20
43	Tasman Highway Lake Leake Junction	5	A0113	R	38	0.33	38	0.45

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THREATENED SPECIES HABITAT

TIME RESTRICTED SLASHING

Mowing/ Slashing

DO NOT MOW OR SLASH during November, December or January.
Mow or slash this area between February and October only.
Do not mow or slash with wet ground.

Drain cleaning

Clean drains as required but minimise the disturbed area. Remove spoil from the site and dispose of in a designated area (not on native vegetation).

Scraping /Grading

DO NOT scrape or grade beyond the table drain in this area.

Removal of material

DO NOT remove any material from this area, apart from drain spoil, unless it is essential. This material is likely to contain threatened plants, bulbs or seeds.

Stockpile & Parking

DO NOT stockpile materials or park within this area.

Pruning

DO NOT prune any plants here unless it is essential for safety or sightlines.

Clearing, Digging & Construction

ABSOLUTELY NO construction, clearing or digging is to occur within this area.

Weeding

DO NOT spray herbicide behind the furniture in this area. No other weed control actions to be done in this area.

Machinery and Equipment

Avoid bringing machinery into road reserves in Threatened Species Habitat areas. If machinery has to be brought in it must be cleaned of any soil contamination before entering to avoid weed transport.

Where is it

Site 14 is on the Midland Highway around the southern turn-off to Ross.

Description of Values

Rare native grasses occur in this area. There may be specific active management at this site but it also requires some modification of routine maintenance activities to protect and encourage rare native plants.

Management

Work in Threatened Species Habitat Areas is permitted by a Public Authority Management Agreement. Placement of Enviromark field markers assists in identification of these areas. Please report any damaged or apparently missing Enviromark field markers to the DIER Environmental Planner ph 6233 8753.

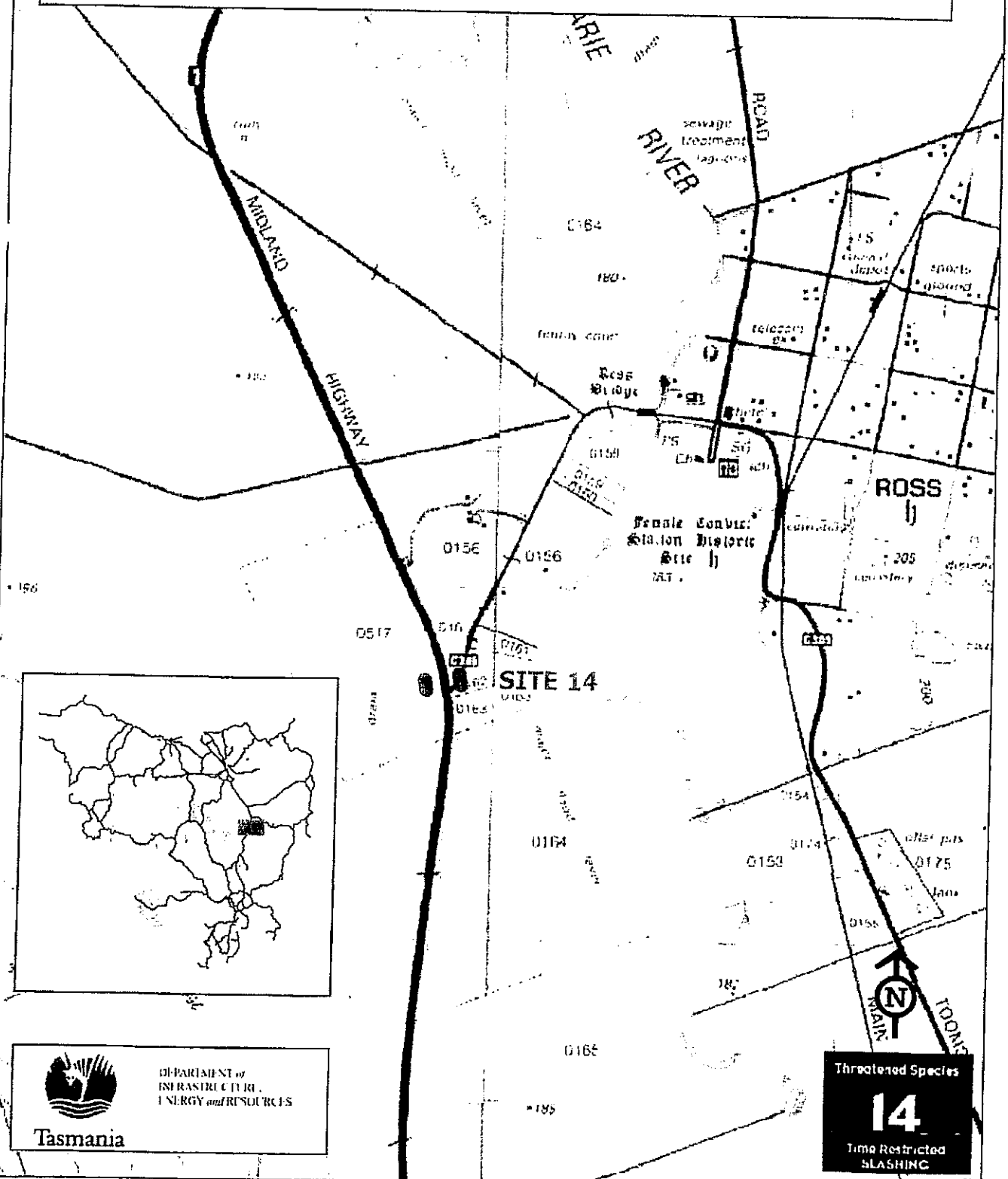
Threatened Species

14

Time Restricted SLASHING

Site 14 is on the Midland Highway around the southern turn-off to Ross.

Rare native grasses occur in this area.



THREATENED SPECIES HABITAT

DISTANCE RESTRICTED SLASHING

- Mowing/ Slashing** DO NOT MOW OR SLASH behind the furniture. Slash between the pavement and furniture only. Do not mow or slash when the ground is wet.
- Drain cleaning** Clean drains as required but minimise the disturbed area. Remove spoil from the site and dispose of in a designated area (not on native vegetation).
- Scraping /Grading** DO NOT scrape or grade beyond the table drain in this area.
- Removal of material** DO NOT remove any material from this area, apart from drain spoil, unless it is essential. This material is likely to contain threatened plants, bulbs or seeds.
- Stockpile & Parking** DO NOT stockpile materials or park within this area.
- Pruning** DO NOT prune any plants here unless it is essential for safety or sightlines.
- Clearing, Digging & Construction** ABSOLUTELY NO construction, clearing or digging is to occur within this area.
- Weeding** DO NOT spray herbicide behind the furniture in this area. No other weed control actions to be done in this area.
- Machinery and Equipment** Avoid bringing machinery into road reserves in Threatened Species Habitat areas. If machinery has to be brought in it must be cleaned of any soil contamination before entering to avoid weed transport.
- Where is it** Site 39 is on the Tasman Highway at the Lake Leake Road junction.
- Description of Values** Rare native shrubs occur in this area. There may be specific active management at this site but it also requires some modification of routine maintenance activities to protect and encourage rare native plants.
- Management** Work in Threatened Species Habitat Areas is permitted by a Public Authority Management Agreement. Placement of Enviromark field markers assists in identification of these areas. Please report any damaged or apparently missing Enviromark field markers to the DIER Environmental Planner ph 6233 8753.

Threatened Species

39

Distance Restricted
SLASHING

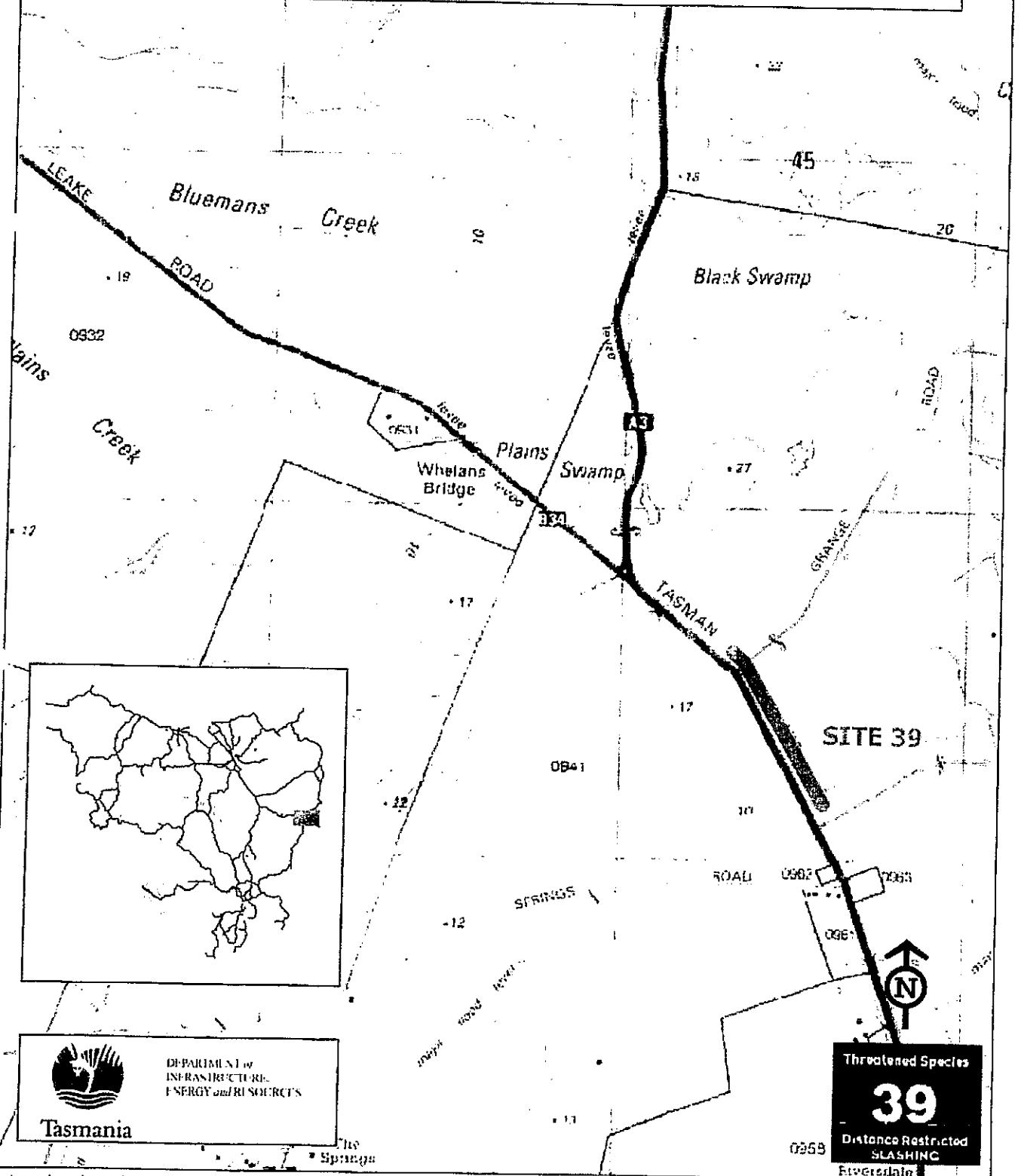
HIGH PRIORITY CONSERVATION SITES **SITE NUMBER 39**

Where it is:

Site 39 is on the Tasman Highway south of the Lake Leake Main Road junction.

Description:

Rare native shrubs occur in this area.



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Tasmania

Threatened Species

39

Distance Restricted
 SLASHING

Everedale

THREATENED SPECIES HABITAT

TIME RESTRICTED SLASHING

Mowing/ Slashing

DO NOT MOW OR SLASH during November, December or January.
Mow or slash this area between February and October only.
Do not mow or slash when the ground is wet.

Drain cleaning

Clean drains as required but minimise the disturbed area. Remove spoil from the site and dispose of in a designated area (not on native vegetation).

Scraping /Grading

DO NOT scrape or grade beyond the table drain in this area.

Removal of material

DO NOT remove any material from this area, apart from drain spoil, unless it is essential. This material is likely to contain threatened plants, bulbs or seeds.

Stockpile & Parking

DO NOT stockpile materials or park within this area.

Pruning

DO NOT prune any plants here unless it is essential for safety or sightlines.

Clearing, Digging & Construction

ABSOLUTELY NO construction, clearing or digging is to occur within this area.

Weeding

DO NOT spray herbicide behind the furniture in this area. No other weed control actions to be done in this area.

Machinery and Equipment

Avoid bringing machinery into road reserves in Threatened Species Habitat areas. If machinery has to be brought in it must be cleaned of any soil contamination before entering to avoid weed transport.

Where is it

Site 40 is near the Tasman Highway/Lake Leake Rd junction.

Description of Values

Rare plants occur in this area. There may be specific active management at this site but it also requires some modification of routine maintenance activities to protect and encourage rare native plants.

Management

Work in Threatened Species Habitat Areas is permitted by a Public Authority Management Agreement. Placement of Enviromark field markers assists in identification of these areas. Please report any damaged or apparently missing Enviromark field markers to the DIER Environmental Planner ph 6233 8753.

Threatened Species

40

Time Restricted
SLASHING



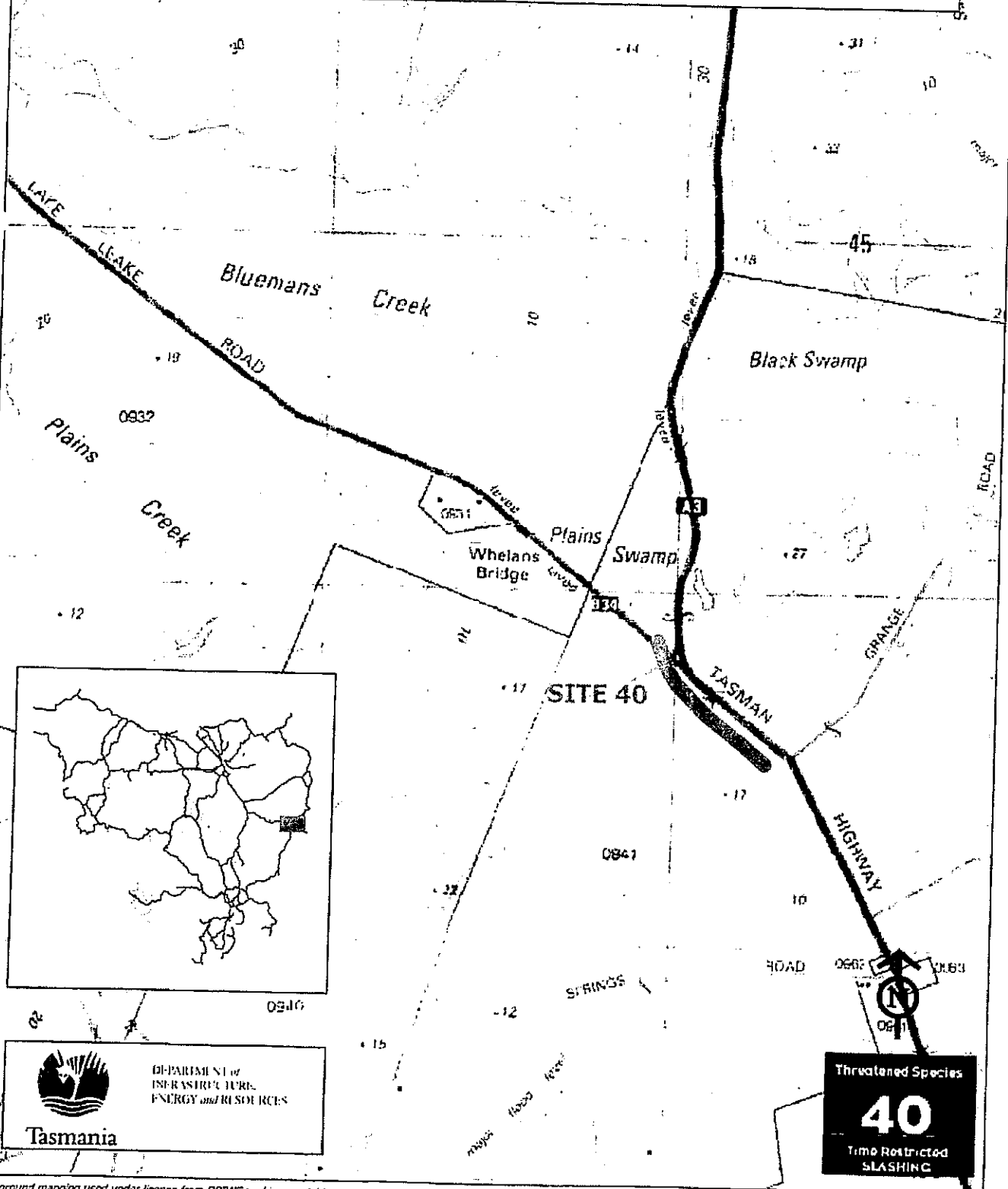
HIGH PRIORITY CONSERVATION SITES **SITE NUMBER 40**

Where it is:

Site 40 is near the Tasman Highway and Lake Leake Main Road junction.

Description:

Rare plants occur in this area.



THREATENED SPECIES HABITAT

DISTANCE RESTRICTED SLASHING

- Mowing/ Slashing** DO NOT MOW OR SLASH behind the furniture. Slash between the pavement and furniture only. Do not mow or slash when the ground is wet.
- Drain cleaning** Clean drains as required but minimise the disturbed area. Remove spoil from the site and dispose of in a designated area (not on native vegetation).
- Scraping /Grading** DO NOT scrape or grade beyond the table drain in this area.
- Removal of material** DO NOT remove any material from this area, apart from drain spoil, unless it is essential. This material is likely to contain threatened plants, bulbs or seeds.
- Stockpile & Parking** DO NOT stockpile materials or park within this area.
- Pruning** DO NOT prune any plants here unless it is essential for safety or sightlines.
- Clearing, Digging & Construction** ABSOLUTELY NO construction, clearing or digging is to occur within this area.
- Weeding** DO NOT spray herbicide behind the furniture in this area. No other weed control actions to be done in this area.
- Machinery and Equipment** Avoid bringing machinery into road reserves in Threatened Species Habitat areas. If machinery has to be brought in it must be cleaned of any soil contamination before entering to avoid weed transport.
- Where is it** Site 41 is on the Tasman Highway at the Lake Leake Road junction.
- Description of Values** Rare native shrubs occur in this area. There may be specific active management at this site but it also requires some modification of routine maintenance activities to protect and encourage rare native plants.
- Management** Work in Threatened Species Habitat Areas is permitted by a Public Authority Management Agreement. Placement of Enviromark field markers assists in identification of these areas. Please report any damaged or apparently missing Enviromark field markers to the DIER Environmental Planner ph 6233 8753.

Threatened Species

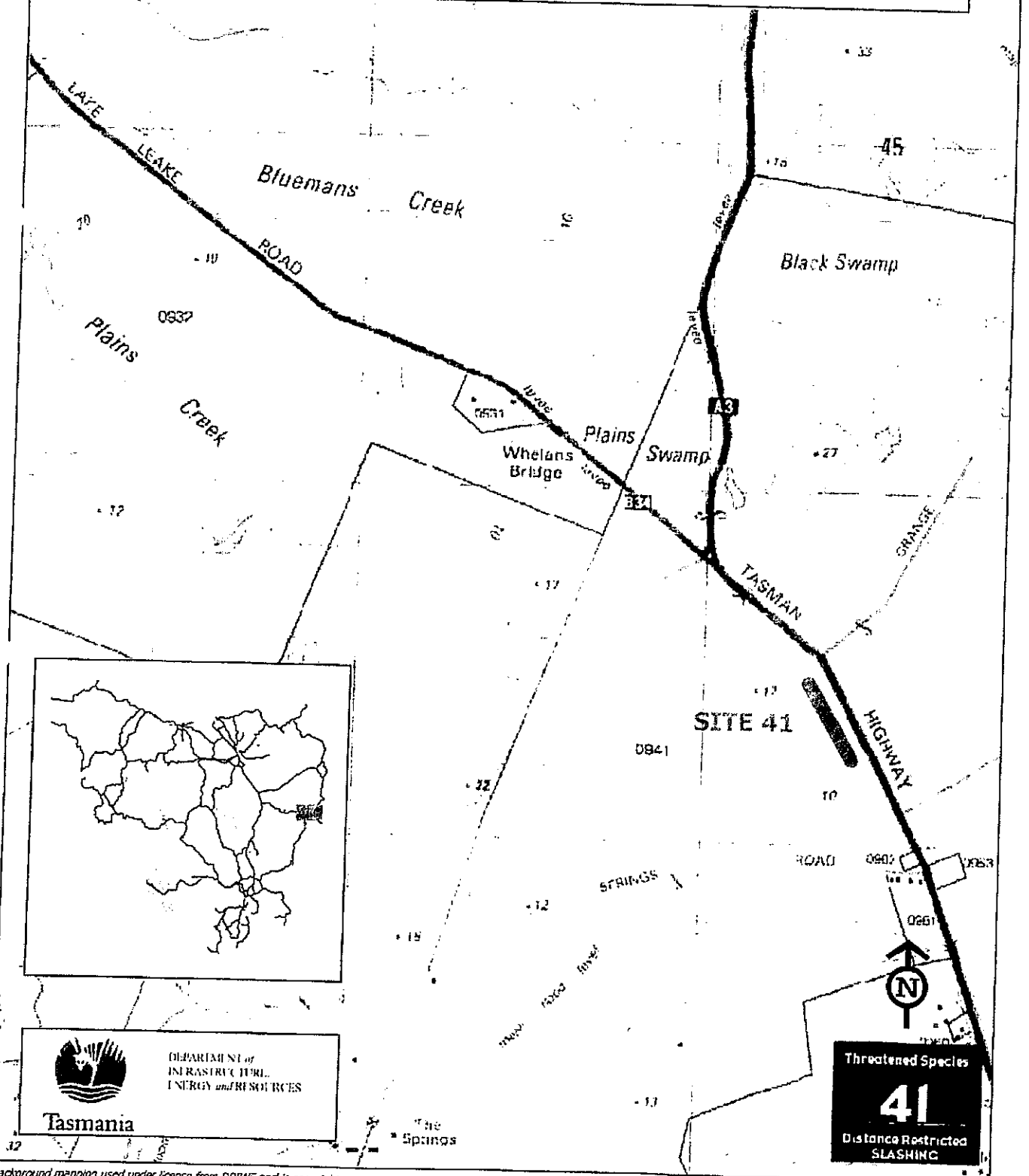
41

Distance Restricted SLASHING

Site 41 is on the Tasman Highway south of the Lake Leake Main Road junction.

Rare native shrubs occur in this area.

Major



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THREATENED SPECIES HABITAT

DISTANCE RESTRICTED SLASHING

- Mowing/ Slashing** DO NOT MOW OR SLASH behind the furniture. Slash between the pavement and furniture only. Do not mow or slash when the ground is wet.
- Drain cleaning** Clean drains as required but minimise the disturbed area. Remove spoil from the site and dispose of in a designated area (not on native vegetation).
- Scraping /Grading** DO NOT scrape or grade beyond the table drain in this area.
- Removal of material** DO NOT remove any material from this area, apart from drain spoil, unless it is essential. This material is likely to contain threatened plants, bulbs or seeds.
- Stockpile & Parking** DO NOT stockpile materials or park within this area.
- Pruning** DO NOT prune any plants here unless it is essential for safety or sightlines.
- Clearing, Digging & Construction** ABSOLUTELY NO construction, clearing or digging is to occur within this area.
- Weeding** DO NOT spray herbicide behind the furniture in this area. No other weed control actions to be done in this area.
- Machinery and Equipment** Avoid bringing machinery into road reserves in Threatened Species Habitat areas. If machinery has to be brought in it must be cleaned of any soil contamination before entering to avoid weed transport.
- Where Is It** Site 42 is on the Tasman Highway at the Lake Leake Road junction.
- Description of Values** Rare native shrubs occur in this area. There may be specific active management at this site but it also requires some modification of routine maintenance activities to protect and encourage rare native plants.
- Management** Work in Threatened Species Habitat Areas is permitted by a Public Authority Management Agreement. Placement of Enviromark field markers assists in identification of these areas. Please report any damaged or apparently missing Enviromark field markers to the DIER Environmental Planner ph 6233 8753.

Threatened Species

42

Distance Restricted SLASHING

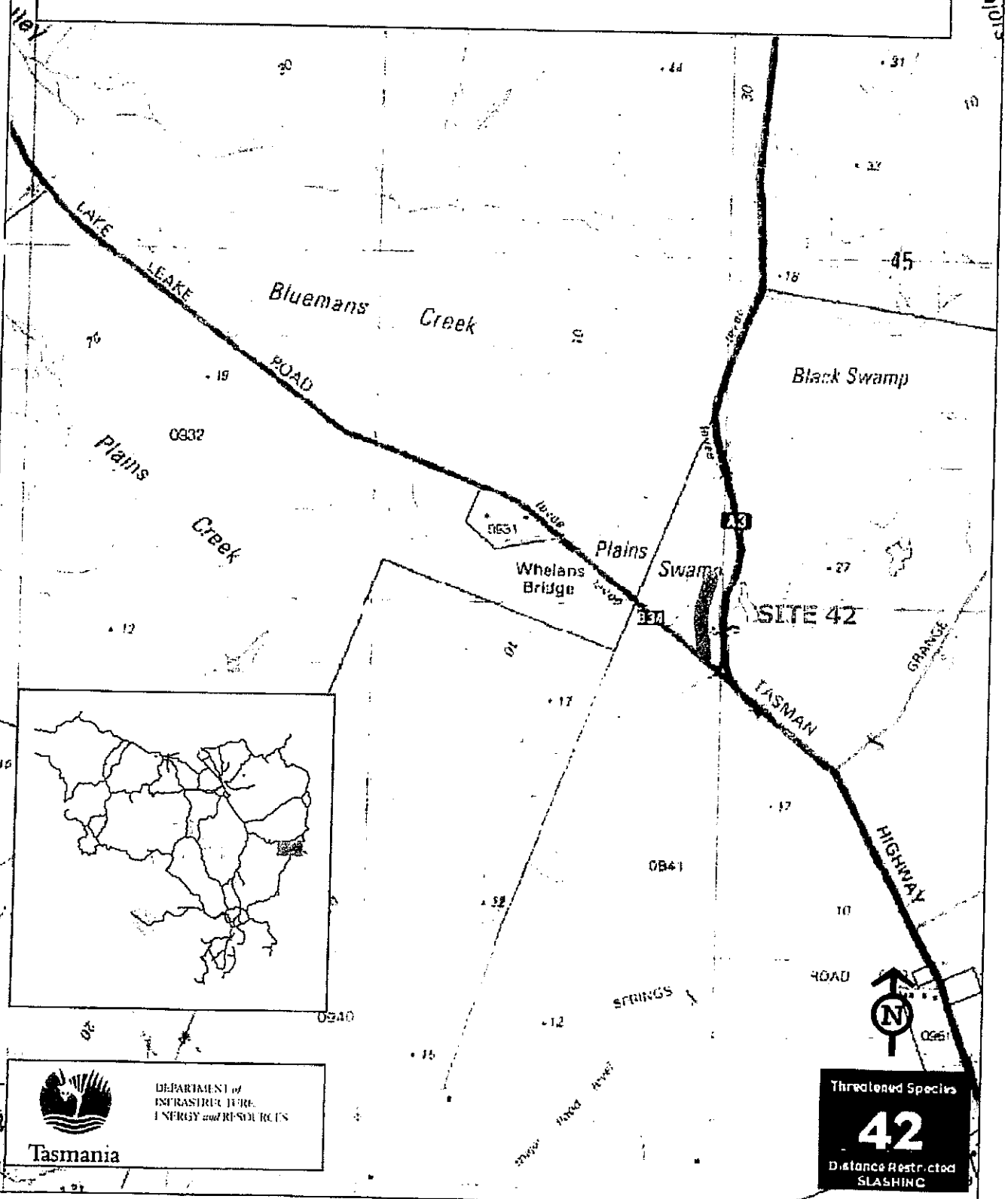
HIGH PRIORITY CONSERVATION SITES **SITE NUMBER 42**

Where it is:

Site 42 is on the Tasman Highway near the Lake Leake Main Road junction.

Description:

Rare native shrubs occur in this area.



THREATENED SPECIES HABITAT

NO SLASHING

Mowing/ Slashing

DO NOT MOW OR SLASH this area.

Drain cleaning

Clean drains as required but minimise the disturbed area. Remove spoil from the site and dispose of in a designated area (not on native vegetation).

Scraping /Grading

DO NOT scrape or grade beyond the table drain in this area.

Removal of material

DO NOT remove any material from this area, apart from drain spoil, unless it is essential. This material is likely to contain threatened plants, bulbs or seeds.

Stockpile & Parking

DO NOT stockpile materials or park within this area.

Pruning

DO NOT prune any plants here unless it is essential for safety or sightlines.

Clearing, Digging & Construction

ABSOLUTELY NO construction, clearing or digging is to occur within this area.

Weeding

DO NOT spray herbicide behind the furniture in this area. No other weed control actions to be done in this area.

Machinery and Equipment

Avoid bringing machinery into road reserves in Threatened Species Habitat areas. If machinery has to be brought in it must be cleaned of any soil contamination before entering to avoid weed transport.

Where is it

Site 43 is on the Tasman Highway south of the Lake Leake road junction.

Description of Values

A range of rare shrubs and herbs grow in this area. There may be specific active management at this site but it also requires some modification of routine maintenance activities to protect and encourage rare native plants.

Management

Work in Threatened Species Habitat Areas is permitted by a Public Authority Management Agreement. Placement of Enviromark field markers assists in identification of these areas. Please report any damaged or apparently missing Enviromark field markers to the DIER Environmental Planner ph 6233 8753.

Threatened Species

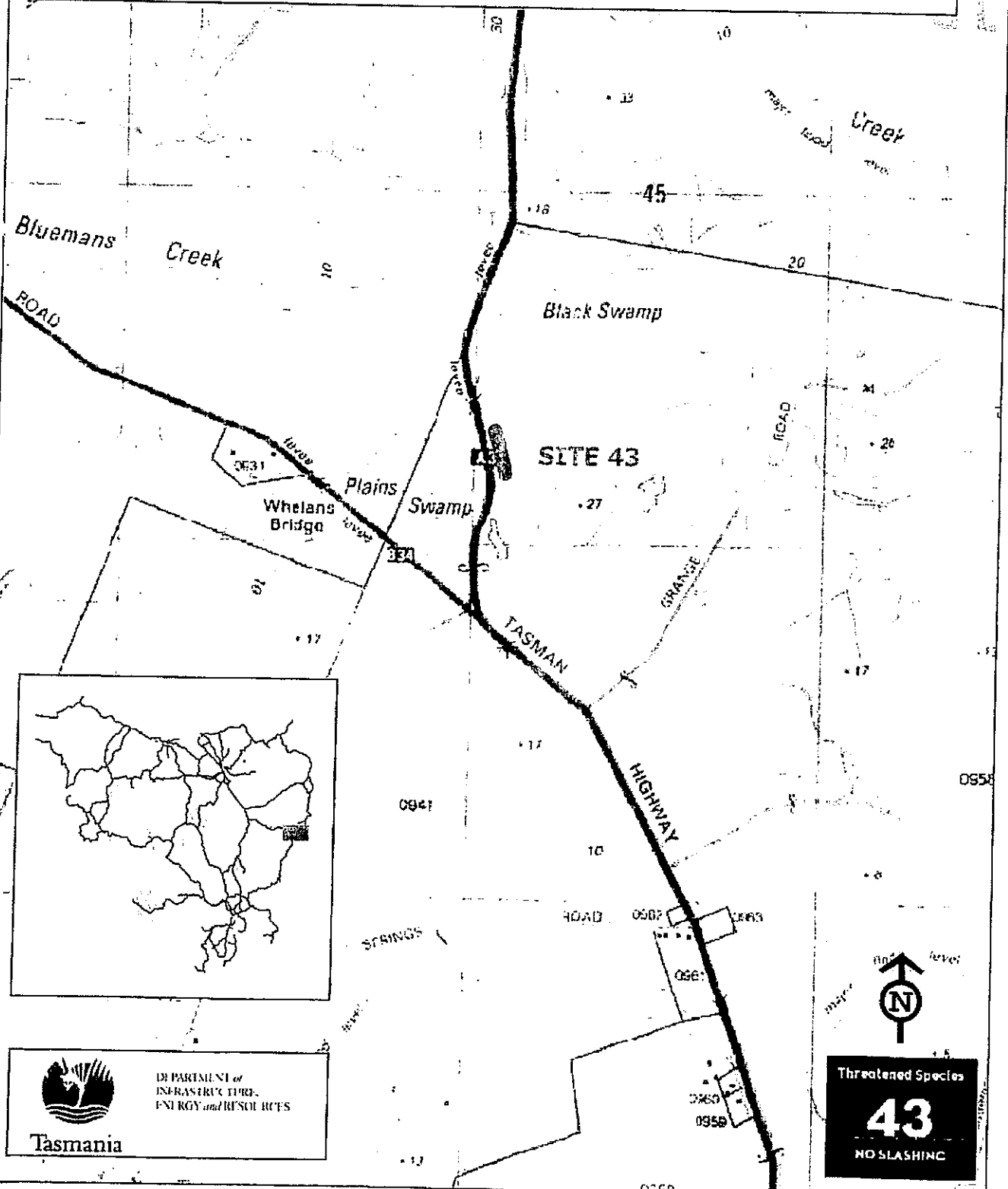
43

NO SLASHING



Site 43 is on the Tasman Highway north of the Lake Leake Main Road junction.

A range of shrubs and herbs grow in this area.





**Onshore Seismic Survey Traffic Management Plan
Great South Land Minerals Ltd**



Appendix C:
RPT Traffic Control at Work Sites Code of Practice

[illegible]

**DEPARTMENT OF INFRASTRUCTURE,
ENERGY AND RESOURCES**

**TRAFFIC CONTROL
AT
WORK SITES**

CODE OF PRACTICE

JUNE 2004

TRAFFIC CONTROL AT WORK SITES

CODE OF PRACTICE

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1. INTRODUCTION

This Code of Practice describes the minimum level of traffic control to be provided when establishing and maintaining work sites on roads in Tasmania. By following the requirements of the Code safe road environments can be provided for all workers and all road users whether they are motorists, cyclists or pedestrians including people with disabilities. This Code must be used as the primary reference by road owners, contractors, utility providers and individual persons who work on roads and manage a work site.

To comply with this Code, workers who are responsible for work sites require training to set levels of accreditation. Training courses are available to ensure the required signage standard is achieved that complies with this Code, relevant Tasmanian legislation and Australian Standard 1742.3 – “Traffic Control Devices for Works on Roads”

In recent times the AS 1742.3 has been revised. It is accompanied by a collection of Field Guides to illustrate the layout of signs and devices at typical work sites in order to provide a simplified and uniform interpretation of signing procedures for use at work sites.

The Department of Infrastructure, Energy and Resources (DIER), in conjunction with the Tasmanian Building and Construction Industry Training Board (TBCITB), has an accredited training course ‘Safety at Roadworks’. It is mandatory for all workers responsible for traffic control at work sites to be trained before working on the roads. The names of the current training providers can be obtained from the TBCITB.

Under Section 8(1) of the *Roads and Jetties Act 1935*, all State highways and subsidiary roads are under the control and direction of the Minister for Infrastructure, Energy and Resources. The Minister has the responsibility for the construction and maintenance of a highway or main road as declared. To ensure the meeting of obligations under the Act and to provide for the safety of persons lawfully using the highways and main roads it is a requirement that all persons, organisations and utility providers obtain approval prior to commencing work within the road reserve of any highway or main road.

Under Section 59 of the *Traffic Act 1925*, the Transport Commission is responsible for the approval of all traffic signs and traffic control signals used on the Tasmanian road network (State and Council roads). Where the work will be on a State highway or main road, that approval will be given on the condition that work site traffic control is carried out in accordance with this Code.

The Transport Commission’s responsibility for approval of traffic control devices also extends to traffic control on all other roads and it is able to authorise Local Councils and prescribed authorities to erect, establish, display, alter or take down particular traffic signs or traffic control signals on Council roads and other roads open to and used by the public. Consequently, all road owners and prescribed authorities must carry out traffic control at work sites in accordance with this Code. Any contractor or other person carrying out works on a road must obtain approval for this from the road owner.

This Code has been produced as a stand alone document for use in the field. It is also covered in a chapter of the Tasmanian Code of Practice for the Installation of Traffic Control Devices. The Tasmanian Code of Practice describes the required use of all types of traffic control devices and required traffic management practices.

2. AUTHORITY TO ERECT SIGNAGE AT WORK SITES

Legislative Provisions

Section 59 of the *Traffic Act 1925* gives the Transport Commission the authority to issue directions to any highway authority or prescribed authority to erect, establish or display any traffic sign or traffic control signal.

Schedule 6 – Part 4 (1) of the *Traffic (Road Rules) Regulations 1999* lists the Prescribed Authorities for the purpose of Section 59 of the *Traffic Act 1925*.

Under section 21(3) of the *Local Government (Highways) Act 1982* the Councils have a responsibility subject to the *Traffic Act 1925*, for the care, control, and management of their roads.

The *Traffic (Road Rules) Regulations 1999* set out the laws that all road users, including workers, must comply with. Road Rule 310 sets out provisions where workers on a road may not need to comply with the road rules in certain circumstances.

For the purpose of the Road Rules: “roadworks” means:

- (a) Construction or maintenance of a road; or
- (b) Road cleaning; or
- (c) Installation or maintenance work authorised under another law of this jurisdiction on, above, below or alongside a road; or
- (d) Installation or maintenance of a traffic control device, traffic-related item or traffic monitoring device; or
- (e) A traffic survey authorised under another law of this jurisdiction; or
- (f) A road survey test.

For the purpose of this Code, works that require traffic control shall not be limited to this definition and include any works on a road.

A duty of care under common law, as well as statute law applies to anyone who is carrying out works on a road which is open to traffic, to take all reasonable measures to prevent accident or injury to persons carrying out the operations and also to members of the public lawfully using the road. Part of this duty of care involves the implementation of appropriate traffic control to alert road users of possible danger for as long as the works are being carried out.

Authorisation to Road Authorities or Prescribed Authorities

In accordance with Section 59 of the *Traffic Act 1925*, the Department’s Chief Traffic Engineer, through delegation from the Transport Commission, provides DIER and all Councils within Tasmania the authority to erect, establish and display traffic signs and traffic-control signals for roadworks in accordance with this Code of Practice. Prescribed Authorities as set out in Schedule 6 Part 4 (1) of the *Traffic (Road Rules) Regulations 1999* can also be provided with similar authority.

Traffic Control at Work Sites Code of Practice

Authorisation to Others

All contractors and other organisations that need to carry out works on a road must have approval to do so, either from DIER, the various local Councils as the road owner, or the Prescribed Authority.

A MANDATORY CONDITION OF ANY APPROVAL ISSUED BY DIER, LOCAL COUNCILS OR PRESCRIBED AUTHORITIES FOR WORK TO BE CARRIED OUT BY ITS STAFF OR OTHERS WILL BE THAT TRAFFIC CONTROL MUST BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THIS CODE.

3. GENERAL SAFETY CONSIDERATIONS

Working on a road is an activity that creates potential hazard to both road users and workers. Road users are at risk when adequate precautions are not taken to enable them to safely negotiate work sites. Workers are often exposed to potential hazards due to the close proximity of traffic. Consequently, working on a road is an activity that can give rise to danger and prosecution if reasonable care is not taken to protect the road users and the workers.

The aim of this Code is to:

- establish standardised procedures for traffic control at work sites on Tasmanian roads,
- provide for the safety of road users and workers, and
- minimise the disruption and inconvenience to road users as a result of the works.

When undertaking works on a road, particular attention must be given to addressing the needs and expectations of all road users. Road users are not limited to motorists and can include the following:

- pedestrians, including school children and people with disabilities;
- cyclists;
- emergency vehicles.

The requirements of road users other than motorists can often be overlooked when undertaking works with much of the attention being focused on the management of vehicles through and around the work site.

All road users expect a minimum level of inconvenience as they negotiate works sites. For this reason traffic control at work sites is of paramount importance and the signage at all work sites must be as simple as possible, interpreted uniformly throughout Tasmania and in accordance with this Code.

The selection and use of the correct signs and devices associated with traffic control at work sites is also important to ensure the safety of road users and the workers. It is essential the signs and devices are in good condition and are not displayed inappropriately when there is no activity at a work site.

4. RESPONSIBILITY FOR TRAFFIC CONTROL

This section of the Code refers to the various levels of planning described in AS 1742.3 for all work sites. It is the responsibility of the person, organisation or utility provider undertaking works on a road to ensure traffic management plans adequately provide for the safety of road users and workers. **However, the ultimate responsibility for this lies with the road owner (or its delegated officer) or the Prescribed Authority.**

4.1 Responsibility of the Road Owner or Prescribed Authority (Agencies)

The agency that is responsible for undertaking or authorising construction or maintenance on roads (or bridges) shall ensure that reasonable care is taken to:

- minimise the risk or injury to all road users or the damage to their property as a result of such operations;
- warn the public of the prevailing conditions;
- guard and delineate and where necessary illuminate, works which may pose a hazard; and
- avoid unnecessary long delays or detours which could inconvenience the public.

There is also a statutory obligation on the agencies and its contractors to provide a working environment and a system of work that is safe for its employees.

4.2 Responsibilities of Supervisory Personnel

Supervisory personnel employed by the agency or agency contractors carrying out construction, maintenance or other works which require the use of traffic control devices need to observe the following principles:

- be mindful of their agency's and their own personal responsibilities to provide safe and convenient travelling conditions for all road users and safe working conditions for personnel and plant under their control;
- they and personnel under their control must at all times be courteous to and considerate of the needs of the travelling public;
- ensure that the personnel assigned to place, maintain and remove signs and devices are aware of and meet their responsibilities;
- ensure that the personnel under their control have a safe and appropriately managed work environment;
- maintain an up-to-date practical knowledge of the requirements of work site traffic management; and
- be prepared to seek expert assistance in planning the management of major roadworks that are likely to be outside of their expertise.

4.3 Responsibilities of Workers

All employees have an obligation under the *Workplace Health and Safety Act 1995* to ensure that the workplace is safe. In relation to the management of work sites, workers:

- need to be mindful of their agency's and their own personal responsibilities to provide safe and convenient travelling conditions for all road users and safe working conditions for personnel and plant under their control;
- must at all times be courteous to and considerate of the needs of the travelling public;
- when assigned to place, maintain and remove signs and devices, need to be aware of and meet their responsibilities;
- must maintain an up-to-date practical knowledge of the requirements of work site traffic control; and
- should be prepared to seek expert assistance for the application of the management of any works that are likely to be outside of their expertise.

Traffic Control at Work Sites Code of Practice

4.4 Principles of Work Site Management

No matter how brief the occupation of a work site may be, proper consideration must be given to the management of the site to:

- provide adequate warning of changes in the road surface or in driving conditions and of personnel and/or plant engaged in work on the road; and
- adequately instruct and guide road users safely through, around or past the work site.

Three basic principles which must be observed when using signs and devices for the management of works are:

- **erect and display** before work commences
- **regularly check** for effectiveness and maintenance in a satisfactory condition; and
- **remove from the work site** as soon as practicable. However, appropriate signs must remain in place until all work (including any bituminous surfacing, removal of loose stones and line marking) has been completed and any obliterated pavement markings have been reinstated.

Similar principles shall be applied to the signing of a road hazard caused by circumstances outside of the control of the road authority.

Inappropriate use of signs and devices can lead to road users disregarding signs that are displayed legitimately at other sites and on other occasions. Inappropriate use of speed limit signs may result in the unnecessary prosecution of drivers for failing to comply with a regulatory requirement.

5. TRAFFIC CONTROL DEVICES FOR USE AT WORK SITES

This section of the Code sets out the application of AS 1742.3 throughout Tasmania for the effective implementation of and compliance with Acts and Regulations relating to works on roads, having regard to both proper traffic control, the safety of road users and those engaged in works.

It also provides a means of ensuring all workers, with the appropriate approval to erect, establish, display, alter or take down traffic control devices (traffic signs or traffic-control signals) will do so in a uniform manner throughout the State and to a standard that is acceptable to DIER.

In general the provisions of AS 1742.3 and its associated Field Guides shall be applied to all work sites throughout Tasmania, subject to the specific requirements or variations set out in this Code.

Published field guides for traffic control at works on roads include:

HB 81.1	Part 1:	Short-term urban works, daytime only
HB 81.2	Part 2:	Short-term rural works, daytime only
HB 81.3	Part 3:	Mobile works
HB 81.4	Part 4:	Short-term night works
HB 81.5	Part 5:	Works on unsealed roads
HB 81.6	Part 6:	Bituminous surfacing works
HB 81.7	Part 7:	Short-term works on freeways
HB 81.8	Part 8:	Long-term partial closures and detours on urban roads
HB 81.9	Part 9:	Long-term partial closures and detours on rural roads

Traffic Control at Work Sites Code of Practice

The principles established in AS 1742.3 must be adapted to suit each particular work site. AS 1742.3 sets out minimum requirements to provide for the safety of road users and workers. In some situations it may be necessary to carry out additional action not covered by AS 1742.3 to ensure the requirements of relevant state legislation such as the *Disability Service Act 1993* and the *Workplace Health and Safety Act 1995* are adequately addressed.

This Code must be complied with unless, in a particular case, circumstances arise calling for a departure from the Code in the interests of better traffic management or safety. In such cases approval from DIER - Traffic Standards Branch shall be given to any variation to this Code before the work is commenced.

6. SPECIFIC REQUIREMENTS FOR TRAFFIC CONTROL DEVICES

It is a current requirement that all signs used at work sites are to have Class 1 retroreflective material. A phase-in period for this requirement is as follows:

- from 31 December 2003, all road signs at work sites displayed at night shall have Class 1 material
- from 31 December 2004, all road signs at all work sites shall have Class 1 material.

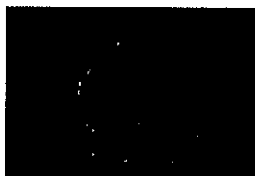
6.1 Traffic Signs

Specific requirements for the use of certain regulatory and associated road works signing are set out below:

- (a) **“Roadwork Ahead” (T1-1) sign.** This sign must be used to give advance warning of all long term work sites (where the works occur day and night and may be left unattended. If the works are on a bridge a ‘Bridgework Ahead’ sign shall be used. The sign may be used at short term works where additional warning is considered necessary.



- (b) **“Workers Ahead” (T1-5) sign.** This sign must be used to warn of the presence of personnel. This sign must only be displayed when personnel are actually working or are visible to traffic and must be removed when workers have left the work area or there is no visible work activity.



Traffic Control at Work Sites Code of Practice

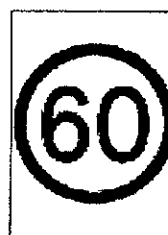
- (c) **“Prepare to Stop” (T1-18) sign.** This sign must only be used where traffic may be required to stop in compliance with a portable or temporary fixed traffic signal, or a direction by a traffic controller. When portable signals are not being used, or traffic controllers are not controlling traffic, the signs must be removed. This sign is **not to be used as part of a multi message sign or with any other sign** except a signals ahead (T1-30) sign.



- (d) **“Traffic Hazard Ahead” (T1-10) sign.** This sign can be used for EMERGENCY SITUATIONS ONLY when an unexpected event causes a hazard. It is to be replaced with more appropriate signs, generally within 24 hours.



- (e) **“Speed Limit” (R4-1) sign.** Reduced speed limits can be applied to a work site only while the conditions requiring changed driving speeds exist. They must be removed immediately the need no longer exists. The speed limits must reflect the level of activity, reduced road space and proximity of potential hazards. They must be consistent with driver expectations and must not be unrealistic to the extent that a significant number of motorists do not comply. In situations where speed limits have been created during short-term works, the speed limit signs are to be covered or removed after working hours. The use of 40 km/h limits should be avoided, but where this is not possible, they must be kept to the minimum length sufficient to allow a safe working area.



Traffic Control at Work Sites Code of Practice
GUIDE TO SELECTION OF APPROPRIATE WORK SITE SPEED LIMIT

Speed Limit	Criteria
40 km/h	Used where the normal speed limit is 60 or 70 km/h and where: <ul style="list-style-type: none"> • traffic is required to mingle with operating plant, or • workers are within 1.2 metres of the trafficable area and no physical barrier exists and MINIMUM LENGTH OF ZONE MUST BE 200 METRES.
60 km/h	Used where the normal speed limit is 80 km/h, and where: <ul style="list-style-type: none"> • workers on foot or plant are operating within 3 metres but not less than 1.2metres of the trafficable area, and no physical barrier exists, or • a traffic controller is being used, or • a traffic hazard exists, e.g. unsealed section of a sealed road, or fresh bituminous seal has just been laid, or MINIMUM LENGTH OF ZONE MUST BE 300 METRES.
60 km/h buffer	Used on the approach to a 40km/h speed zone where approach speeds would otherwise be 80km/h or greater, and: <ul style="list-style-type: none"> • the buffer zone is normally to be 200 metres in length, and the buffer zone only applies in the one direction with the permanent, or a higher speed limit applying in the reverse direction.
80 km/h	Used where the need for a lower speed limit does not exist, but: <ul style="list-style-type: none"> • there is some significant disturbance to alignment or pavement surface, which makes unrestricted high rural speeds undesirable on safety grounds, or • in advance of temporary traffic signals, and MINIMUM LENGTH OF ZONE MUST BE 400 METRES.
80 km/h buffer	Used on the approach to a 60 km/h speed zone where approach speeds would otherwise be 100 km/h or greater, and <ul style="list-style-type: none"> • the buffer zone is normally to be 300 metres in length but no longer than 400 metres, and the buffer zone only applies in the one direction with the permanent speed limit applying in the reverse direction.

APPLICATION REQUIREMENTS:

- All speed limit signs at work sites shall be 'B' size (600mm x 800mm), but where special circumstances warrant on rural highways, 'C' size (900mm x 1200mm) signs may need to be used as the first speed limit sign.
- Speed restriction signs (R4-1) shall not be attached to a "Roadwork Ahead" sign (T1-1). Where the speed limit sign is necessary it is always to be placed at least 50 metres beyond the "Roadworks Ahead" sign. An exception to this is in rural situations where the first 80km/h speed limit sign together with a "Road Work" sign is to be placed some 250metres in advance of the "Roadwork Ahead" sign..
- Overnight use of 40 km/h speed limits in permanent 60 or 70 km/h speed zones and 60 km/h speed limits within permanent 100 and 110 km/h speed zones shall only be permitted in exceptional cases with the specific approval of the road owner. Overnight use of 40 km/h speed zones, once work has ceased for the day is not permitted in permanent speed zones of 80 km/h or greater.

Traffic Control at Work Sites Code of Practice

- **Repeater speed limit signs** are to be used over longer work sites or where side road traffic entering the works site needs to be advised of the speed limit. The spacing of repeater signs is to be no greater than 500 metres. However, if speed limit signs are required for very short term and low impact maintenance works the spacing of signs may be increased to one kilometre apart on roads where the works speed limit is 80 km/h.

Speed limits set at work sites only apply to the road upon which the signs indicating the limit are erected. The limits do not apply to any side or intersecting roads unless a speed-limit sign is also erected on those roads. The permanent speed limits of any side and intersecting roads may, however, be coincidentally the same as the limit set at the work site.

- **Roads marked with a centre line** must have speed limit signs and "workers ahead" signs (when these signs are required) placed on both sides of the road. However, signing on these roads may be limited only to the left-hand side where the unobstructed width of the right-hand side of the road is less than 2.5 metres. The decision to reduce the number of signs must be made after a risk assessment by a person accredited in General Work Site Traffic Management, having due regard for the safety of workers and road users.
 - **Speed Limit signs and other traffic signs must not be installed** as a matter of course or days before actual commencement of works. Signs covering the work site should normally be installed immediately before the work commences or on longer term works a day or two before the work commences. They also must be changed as the work site changes over the day or from day to day.
 - **The end of a work site speed limit** should occur as soon as practical after the work area, allowing for any merge/diverge tapers. Signs indicating the return to the permanent speed limit should normally be placed no more than 50 metres (on low speed roads) and 100 metres (on high speed roads) beyond the work site or end of taper.
- (f) **"Road Work" (R4-3) sign.** This sign must be used at all long term work sites where a speed limit is required during periods when works are unattended. The sign is used where it is necessary to establish a speed limit zone (used only on first reducing speed limit sign) but there is no need to display a 'Workers Ahead' (T1-5) sign. The sign clarifies that the speed limit zone has been established due to the presence of roadworks.



Traffic Control at Work Sites Code of Practice

6.2 Detours, Side-Tracks and Crossovers

AS 1742.3 sets out the requirements for Detours, Side-Tracks and Crossovers. The following specific requirements shall be observed in relation to the surface condition of detours, side-tracks and crossovers:

- Unsealed pavements shall not be used in built up areas
- Unsealed pavements should not be used in rural areas on roads that carry more than 500 vehicles per day for periods longer than 5 days, or more than 200 vehicles per day for periods longer than 4 weeks.

6.3 Record Keeping

Appendix A of AS 1742.3 sets out requirements for daily recording of the location and type of signs erected. This is a mandatory requirement of this Code.

7. VARIATIONS TO PRACTICE

This Code sets out the minimum requirements for the control of traffic at work sites. Additional precautions may at times be required to achieve the necessary full traffic control at a work site.

Due care must be paid to the *Traffic (Road Rules) Regulations 1999*, the general “duty of care” under common law, the provision of a safe place to work and system of work under the *Workplace, Health and Safety Act 1995*, accessibility for persons with disabilities under the *Workers Compensation Act 1998* and other relevant legislation.

Any variance from the Code of Practice for the sole purpose of enhancing workplace health and safety or to mitigate a workplace hazard or risk must be documented and be in accordance with the requirements of Regulations 17 to 19 inclusive, of the *Workplace Health and Safety Regulations 1988*.

Notwithstanding the need for approval of any variations from the requirements of this Code (see Section 5), specific variations to be followed are:

7.1 Multi Message Signs

Up to three linked messages are permitted on one 1200 x 900mm (minimum) sign provided one of the messages is symbolic and 600 x 600mm in size. The messages must not be conflicting with one another. Where a speed plate is used on such a sign, it must always be closest to traffic and be a full B size annulus and numerals.

7.2 Electronic Message Boards (Variable Message Signs)

There is a requirement to limit the number of components to a message to allow comprehension by passing traffic. To meet this requirement, the message must be limited to the following:

Screen displays -

- The whole message should be contained to one screen display, but it must be no more than two in any situation, and
- On each screen -
 - there must be no more than three lines of words displayed, and
 - the display must be static to allow for motorists' easy comprehension.

Traffic Control at Work Sites Code of Practice

7.3 Bituminous Surfacing Works

Field guide SAA HB81.6 – 1998 'Bituminous surfacing works' should be adapted to meet the requirements of the work site, having consideration for traffic flow, road geometry and terrain affecting visibility and other prevailing conditions. The following describes arrangements that are to be followed:

(a) Advance warning

Immediately prior to the commencement of the bituminous surfacing works, appropriate warning signs are to be applied to provide adequate warning to motorists of the works.

Roadwork Ahead (T1-1) sign

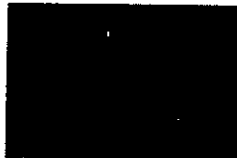
Used for long-term works, when leaving the work uncompleted overnight. This sign remains in place until all works are completed, including pavement markings.



Workers Ahead (T1-5) sign (Symbolic)

Always used where workers or plant are

ACTUALLY on site.



(b) Creating a safe work site and delineating a safe path for users

The work site and the path for traffic to take must be delineated clearly. The field guide SAA HB81.6 should be used to assist with adequately instructing and guiding road user safety through, around or past the work site.

(c) Road condition signs and temporary reflective pavement markers

Loose stones (T3-9) sign (Symbolic)

This sign is to be used either during preparation work when there may be loose material on the running surface, or when opening the road to traffic after sealing. The signs are to be left in position until all loose material has been removed.



Traffic Control at Work Sites Code of Practice

No lines

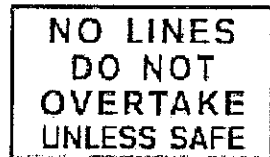
(T3-12) Sign

(T3-11) Sign

These signs are to be used wherever pavement markings have been removed or will need to be reinstated on a new pavement. The signs are to be left in position until the permanent markings have been reinstated.

The "No lines do not overtake unless safe" sign is to be used on two lane roads in situations where the barrier or centreline is missing.

The "New work no lines marked" sign is to be used on multi-lane roads where lane line or lines are missing.



Delineation markers There is a need to temporarily mark centre lines or lane lines, or both, using temporary raised reflective pavement markers at maximum 24 metre intervals.

(d) Using speed limit signs effectively

Work site speed limits must reflect the level of activity, reduced road space and proximity of potential hazards. These need to be consistent with driver expectations and must not be unrealistic to the extent that a significant number of motorists do not comply.

In bituminous surfacing works, speed limit signs must only be introduced and operated whilst the work is being undertaken and where one or more of the following criteria is satisfied:

- the safety of workers may be compromised by the proximity of high speed traffic, and/or
- moving plant shares the road through the work site, and/or
- during sprayed seal works on heavily trafficked roads, and/or
- protection of the seal, until all the loose material has been removed from the running surface [see (e) below], and/or
- the standard of the vertical or horizontal road geometry at the work site is reduced below that of the adjacent sections of the road, and/or
- the safety of vehicles travelling through the work site is otherwise compromised with the permanent speed limit.

Work site speed limit signs must not be used alone but introduced with other signs and devices required by site conditions. They shall be removed or covered immediately work has been completed. They must not remain in place once loose material has been removed even if the permanent pavement markings have not been reinstated.

Guide to the selection of appropriate work site speed limit is set out in Section 6.1 (e) of this Code.

Notwithstanding this, during the period between completion of sealing work and sweeping of loose aggregate, a speed limit of 60 km/h may be applied to the section of newly sealed road. This variation is conditional on the exposure time of traffic to loose aggregate being no longer than that which is set out in Section 7(e)(i) of the Code.

Traffic Control at Work Sites Code of Practice

(e) Minimising the exposure time of works

The aim in any sealing or asphalt work should be to complete the work, remove all loose materials from the road and reinstate all road markings in the minimum possible time.

It is not acceptable practice to impose reduced speed limits, while relying on traffic bedding the aggregate over many days or weeks. Where practicable, a suitable, rolling device should be used to minimise this time.

If the work cannot be completed on the same day then the following should be aimed for:

- (i) remove all loose materials from the running surface, **within one calendar day of sealing**, if the traffic volume is more than 1,000 vehicles per day. Otherwise, remove all loose materials **within five calendar days of sealing**;
- (ii) temporary pavement markers must be installed at the end of each day's work and removed when permanent pavement markings are installed;
- (iii) arrange to have all permanent linemarking and raised pavement markers reinstated:
 - within the **next 3 calendar days**, if the traffic volume is more than 1,000 vehicles per day, or
 - Within the **next week** if the traffic volume is less than 1,000 vehicles per day.

8. TRAINING REQUIREMENTS

To ensure the effective implementation of this Code, nationally accredited training courses are available. One such course has been established by the Tasmanian Building and Construction Industry Training Board.

The course consists of the following modules:

- *Basic Work Site Traffic Management*
- *Traffic Controller*
- *General Work Site Traffic Management*
- *Advanced Work Site Traffic Management*

The following personnel involved in traffic control at work sites must have completed and passed the training modules indicated:

- (a) There must be a site supervisory person accredited in '*Basic Work Site Traffic Management*' on site where the work is being undertaken on the road or road shoulders.
- (b) Where manual traffic control is required, it shall be performed by persons who have been accredited as a '*Traffic Controller*'.
- (c) As a minimum, traffic management plans such as those covered in the SAA handbooks must be certified as appropriate by a person accredited in '*General Work Site Traffic Management*'.
- (d) For works involving more complex traffic arrangements, or staging, or both, i.e. situations requiring more complex traffic control to that covered in the SAA handbooks, traffic management plans shall be prepared by an experienced traffic engineer or person qualified and experienced in '*Advanced Work Site Traffic Management*'.

Re-accreditation is required every three years to keep up with ongoing changes to this Code, AS1742.3 and the SAA field guides.

Traffic Control at Work Sites Code of Practice

9. WORK SITE AUDITS

The road owners and prescribed authorities have responsibility to ensure that work sites are managed in accordance with this Code.

Random safety audits of the traffic control at work sites are, therefore, to be conducted by the road owner or prescribed authority to ensure compliance with this Code in regard to the traffic control devices as well as training accreditation of workers.

Where contractors have been engaged in longer term works, i.e. over one week, it is strongly recommended that a safety audit be conducted within the first two days of the commencement of the works, and again each month if the works extend over several months.

Audits must be conducted by an experienced traffic engineer or person qualified in *'Advanced Work Site Traffic Management'* and also independent of the contractor undertaking the works.

10. CONTACT DETAILS

FOR FURTHER INFORMATION CONTACT:

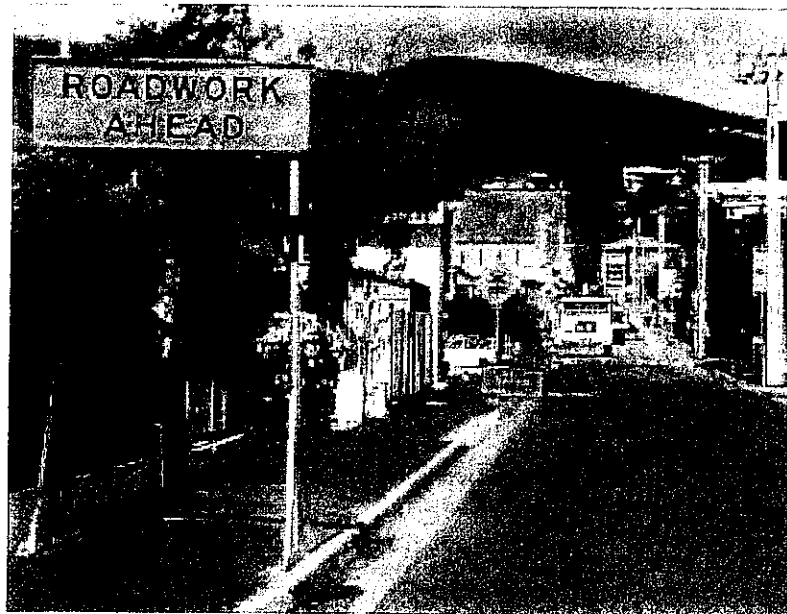
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Technical Advice Sheet

No. 10

TRAFFIC CONTROL AT WORK SITES



1. Introduction

In June 2002 the *Tasmanian Code of Practice for Traffic Control at Work Sites* (the Code) was released.

Since that time there have been large scale improvements to the control of traffic at Tasmanian work sites. It is considered a great deal of learning has occurred on the part of all authorities and contractors involved, and numerous site specific issues have been addressed.

Feedback received from workers in the field has allowed certain variations to the Code, for specific operational issues, to be considered. Feedback has also identified the need for some clarification of the current revision of AS1742.3.

This Technical Advice Sheet describes some new requirements and variations that are to apply to the Code.

2. New Requirements

The following requirements must apply to road signs used at work sites:

(a) Sign Sheeting Material

The latest revision of AS1742.3, published in September 2002, requires all road signs at work sites to meet at least the requirements for Class 1 material as specified in AS/NZS1906.1.

Normal procedure following the introduction of a revised standard requires that it be adopted as effective almost immediately. However, a phase-in period in meeting this particular requirement, has been allowed for as follows:

- from 31 December 2003, all road signs at work sites displayed at night shall have Class 1 material;
- from 31 December 2004, all road signs at all work sites shall have Class 1 material.

(b) Speed-Limit and Other Sign Sizes

All *speed-limit* signs including repeater signs at work sites must be a minimum 'B' size as specified in the Code.

There are no allowances for a size reduction for signs that are displayed individually.

On multi-message sign displays, the *speed-limit* sign size may be reduced, but the size of the annulus and numerals must remain the same as specified for a 'B' size sign. This same requirement (ie: reducing the sign size but not the symbols and legend) on other multi-message signs, must also be applied in accordance with Section 3.3.2 of AS1742.3.

3. Variations to the Code of Practice

Road authorities and contractors should be aware that the new edition of the Field Guides Part 1 and Part 2, complementing AS1742.3, have recently been released by Standards Australia. Road authorities and contractors must be aware that diagrams in each of the Field Guides are a **guide** only and traffic control that is installed at the work site must meet the standard required by the Code of Practice.

Road authorities may allow the following variations to the Code at appropriate locations:

(a) **Roads Marked with a Centre Line**

Section 6 of the Code requires the placement of *speed limit* signs and *workers ahead* signs on both sides of roads marked with a centre line.

Signing on the roads may be limited only to the left-hand side where the unobstructed width of the right-hand side of the road is less than 2.5 metres. The decision to reduce the number of signs must be made after a risk assessment by a person accredited in General Work Site Traffic Management, having due regard for the safety of workers and road users.

(b) **Repeater *Speed Limit* Signs**

Section 6 of the Code requires repeater *speed limit* signs to be placed no more than 500 metres apart. If *speed limit* signs are required for very short term and low impact maintenance works (see AS1742.3 – Section 4.8), the spacing of signs may be increased to one kilometre apart on roads where the works speed limit is 80 km/h. However, where side-road traffic can enter the road on which work is being carried out, additional *speed limit* signs must be placed on both sides of the junction, to inform both left and right turning motorists of the temporary speed limit.

Speed limits set at work sites only apply to the road upon which the signs indicating the limit are erected. The limits do not apply to any side or intersecting roads unless a *speed limit* sign is also erected on those roads. The permanent speed limits of any side and intersecting roads may, however, be coincidentally the same as the limit set at the work site.

(c) Speed Limits at Very Short Term and Low Impact Works

With reference to Section 4.8 of AS1742.3 where the work is being undertaken entirely by a vehicle or machinery, ie: shoulder grading, mowing, etc. and there is no impact upon workers on foot:

- no change to the permanent speed limit is necessary provided the vehicle or machinery can operate clear of moving traffic and use gaps in the traffic to pass any obstructions;
- an 80 km/h speed limit is to be applied where the vehicle or machinery is operating from a traffic lane on a road where the permanent speed limit is 90 km/h or greater;
- a 60 km/h speed limit is to be applied where the vehicle or machinery is operating from a traffic lane on a road where the permanent speed limit is 70 or 80 km/h.

Notwithstanding these provisions, the *workers ahead* sign and other appropriate warning signs, including vehicle mounted warning devices, must be displayed.

(d) Speed Limit on Newly Sealed Roads

Notwithstanding the requirement for setting speed limits described in Section 6(e) of the Code, during the period between completion of sealing work and sweeping of loose aggregate, a speed limit of 60 km/h may be applied to the section of newly sealed road. This variation is conditional on the exposure time of traffic to loose aggregate being no longer than that which is set out in Section 7(e)(i) of the Code.

4. Legal Authorisation

I, Milan Prodanovic, Chief Traffic Engineer in the Department of Infrastructure, Energy and Resources ("the Department") acting under Section 59(1) of the Traffic Act 1925 pursuant to a delegation from the Transport Commission under Section 10 of the Transport Act 1981, hereby direct the Department and each highway authority to comply with this Technical Advice Sheet in so far as it relates to the installation of signs at work sites on public streets.

Expressions used in this direction have the same meaning as in the Traffic Act.

Milan Prodanovic
CHIEF TRAFFIC ENGINEER

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