

location *matters*

LandTasmania

A point of reference for Tasmanian Land Information





This newsletter is designed, written, edited and produced by **Land Tasmania**, a Division of the Tasmanian Department of Primary Industries, Parks, Water and Environment (DPIPWE).

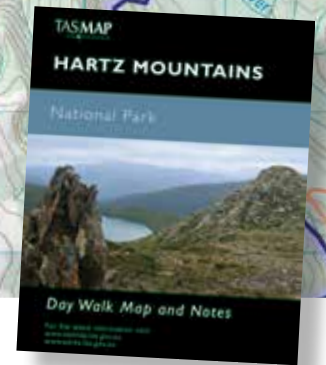
locationmatters aims to keep clients and members of the community informed about new developments and progress with existing projects, as well as introduce you to staff and the work they do.

Please take a few minutes to provide feedback or ideas for future issues by completing the short questionnaire at www.dpipwe.tas.gov.au/locationmatters

An electronic version of this publication can be found at:

www.dpipwe.tas.gov.au/locationmatters

The new edition of Hartz Mountains National Park Map – available for purchase from Service Tasmania shops, TASMAM resellers and agents, and online at www.tasmam.tas.gov.au



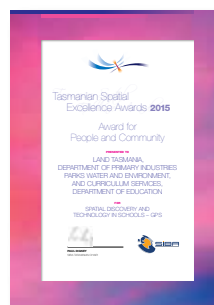
Introducing Robert Cockerell



As the new General Manager

for **Land Tasmania**, I welcome you to the eleventh edition of our biannual newsletter *locationmatters*, showcasing developments in land and spatial related information in Tasmania. I have a background in Information Technology and Accounting and managed the Corporate Services Divisions of several departments within the Tasmanian Public Sector over the past 20 years with my most recent assignment as the Acting Director of the Royal Tasmanian Botanical Gardens. I look forward to playing a key role in the Tasmanian land and spatial information sector.

I was very pleased to note that in September this year the joint Spatial Discovery initiative between the Department of Education and **Land Tasmania** was announced as the winner of the People and Community category of the Tasmanian Spatial Excellence Awards.



In August, the Tasmanian Spatial Information Council (TASSIC) held an executive forum on spatially enabling health and community services and embedding location intelligence into service innovation.

The forum showcased innovative approaches to solving age-old problems and demonstrated ways in which health organisations harness the power of spatial information. It also highlighted emerging global trends in spatial technologies, with a focus on the health and community sector.

These types of industry-related forums help assist sectors that may not have traditionally used spatial information to understand the benefits of utilising this type of information in effective decision making, particularly where location is a factor. The forum was opened by Michael Ferguson, Minister for Information Technology and Innovation and Minister for Health, and was well attended by members of the health sector from across Tasmania.

If you missed the August forum, TASSIC will be holding another on 9 December 2015 on "Unlocking Tasmania's Economic Future using Spatial Information". The forum will focus on how the use of spatial information and location intelligence can deliver tangible economic benefits for Tasmania. More information can be found on the TASSIC website: www.tassiac.org.au.

I hope you enjoy reading this edition of *locationmatters*.

Robert Cockerell
General Manager, **Land Tasmania**

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Cover image

Olive farm near Campania. See story on page 4 about Crop Suitability Mapping.
Photography Graeme Harrington, **Land Tasmania**.



Mapping evolution

provides strong foundation for the future

TASMAP has developed strategies

to modernise its mapping products in response to changing trends, and feedback from the public, stakeholders and clients. As a result, a number of recommendations have been trialled and adopted, and the initiatives from this evolution of mapping are now providing a sound basis for the future.

New Topographic mapping series

TASMAP has launched a new 1:50 000 Topographic Mapping Series to ensure Tasmanian contemporary mapping products are meeting changing trends and public demand. The new look of the series ensures clear and accurate portrayal of topographic information, symbols and map content with enhanced depiction of buildings, hill shading and vegetation. The best features of the existing 1:25 000 and 1:100 000 Topographic Map Series are incorporated, with the 1:50 000 topographic maps to gradually replace both existing map series as stocks expire. Seven new 1:50 000 products are now available in both large format paper and digital. New maps are expected every few months, working towards a statewide coverage.



TASMAP Digital Products

TASMAP has also made close to 470 mapping products available digitally for use with smart phones, GPS and GIS applications. The complete 1:25 000, 1:50 000, 1:100 000, 1:250 000, and National Park, Walk & Recreation Map series are now available to purchase from the TASMAP eShop. This purchase includes a GeoTIFF and a KMZ file for use within Google Earth.



Our team of experts examine the printed maps of Bathurst and Hartz, part of the new 1:50 000 Topographic Mapping Series.

Your photo on your TASMAP!

LandTasmania

You decide what your maps look like!



TASMAP is calling on keen map users and photographers out there to enter their photos in a competition to find covers for the upcoming Freycinet and Cradle Mountain – Lake St Clair National Park Maps.

The rules of the competition are simple: the photo needs to be interesting, and representative of the area covered by that map.

All entries will be judged by a panel, looking for photos that best represent the look and feel of the area, and make people want to go there.

The lucky winners will have their photos printed on the cover of the upcoming National Park Maps with an acknowledgment on the back. The winners will also receive a complete National Parks Map Set, valued at \$76.

Entries close on 18 December 2015 and can be submitted through the TASMAP eShop:
www.tasmap.tas.gov.au/do/category/NPCOMP

Crop Suitability Maps now available on LISTmap

Statewide Enterprise Suitability Maps have recently been made available by **Land Tasmania** via LISTmap.

Enterprise Suitability Maps are derived from a combination of new digital soil mapping techniques, localised climate data and crop rules. Via the power of Geographic Information Systems (GIS), climate and soil information can be used to match the known soil and climate requirements of a range of crops to a given area. This process allows a farmer or investor to short-list potential crops or enterprises for further investigation. The likely risks or impediments to growing the crops can also be identified.

Importantly at the regional or district level, these maps can help determine the wider

potential for new crops as a guide to the viability of a new enterprise.

Enterprise Suitability Maps have been released for regions across the state after successful pilot studies in the Meander Valley and parts of the Southern Midlands.

Crops included in the current release are: barley, blueberries, carrot seed, carrots, cherries, hazelnuts, industrial hemp, linseed, Lucerne, olives, onions, poppies, potatoes, pyrethrum, raspberries, rye grass, sparkling wine grapes, strawberries, table wine grapes and wheat.

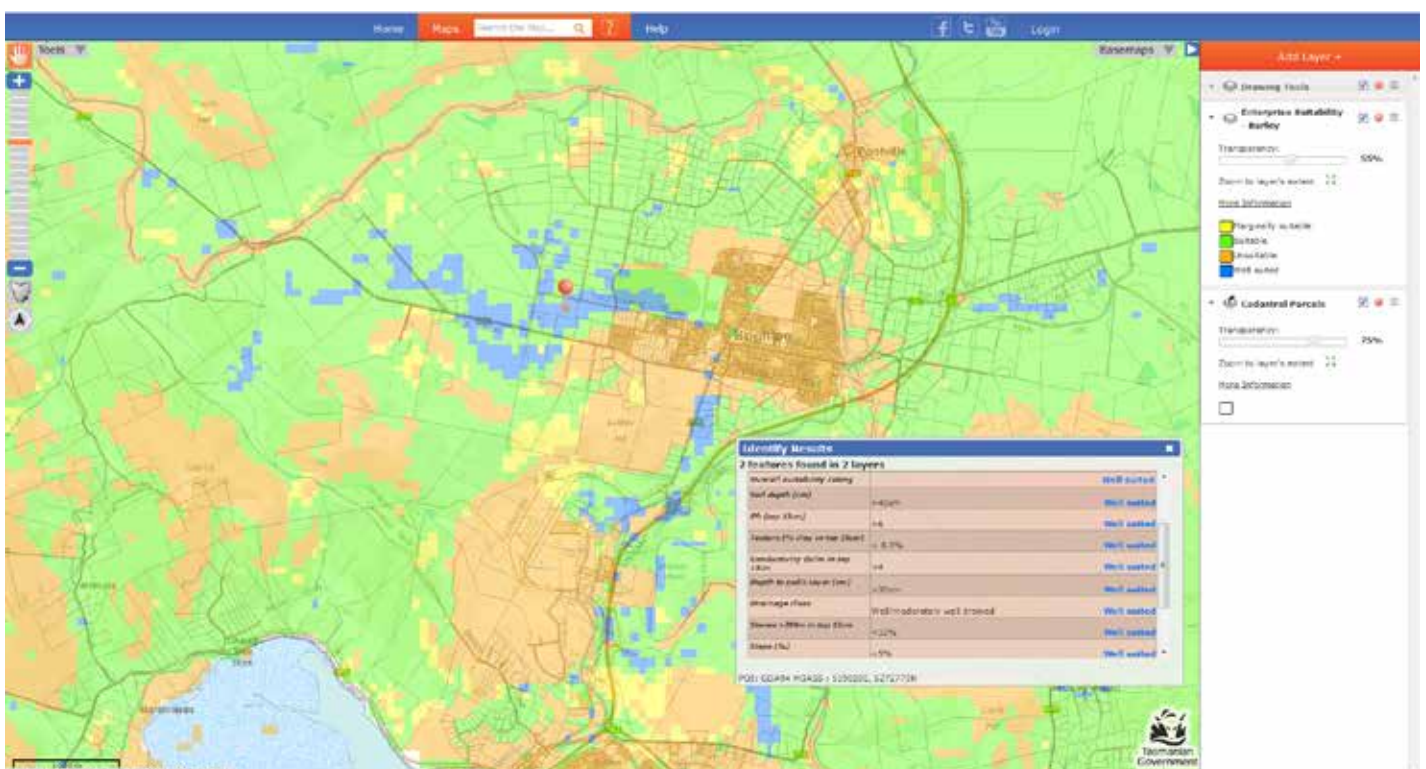
The enterprise suitability mapping data, and the consolidated soil and climate data, is also available from the Department of Primary Industries, Parks, Water and Environment (DPIPWE) for professional advisers and consultants, under a standard data sharing agreement. Behind the

enterprise suitability mapping sits extensive digital soil attribute modelling, soil profile sampling, and 24 months of continuous on-farm temperature and climate sampling correlated against the state's historical weather records.

Through the Water for Profit Program over the next three years, 400 more soil cores will be taken, further temperatures recorded at 30 minute intervals at 280 locations across the state and the crop rules updated. A range of different crops will be explored during this time to add to existing 20 crops available at this time.

For more information on the Water for Profit Program, go to: www.utas.edu.au/tia/centres/irrigation/projects-new/projects-new/irrigation-rd-and-e

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Enterprise suitability mapping for barley, shown in LISTmap. Blue and green areas indicate most suitable conditions.

Addressing the world in three words

Have you ever had to relay your location to somebody and grappled with the complexities of coordinate systems, grid references, and latitude and longitude? In populated areas, telling someone where you are is relatively easy – you just give them an address. However, if you are out in the south-west of the state, for instance, addresses are non-existent. At times like this you'd traditionally need to relay your location using a grid reference, latitude and longitude, or possibly the name of a prominent feature. The problem is that prominent features may be few and far between, and coordinates tend to be difficult to remember and prone to transcription errors. So is there an alternative?

what3words is a global addressing system based on a grid of 57 trillion 3m x 3m squares. Each square has been allocated a unique, fixed three-word address. The algorithm turns latitude and longitude coordinate pairs into these three words and vice-versa.



Words are easier to remember and use than any other available system. *what3words* has its own mobile app and web service but also provides an Application Programming Interface (API) & Software Development Kit (SDK) for businesses and developers to integrate

the *what3words* technology. Individuals, companies and organisations around the world are using it to enhance their own products and services with simple and precise addressing. With *what3words*, everyone and everywhere now has a simple address.

How is *Land Tasmania* using *what3words*?

Land Tasmania has recently integrated *what3words* search capability into LISTmap. You can also find the three-word address for anywhere in Tasmania using the 'Locate Me' tool, available under **Tools > Other Tools**.

As an example, enter the following three words into the search bar within LISTmap: **undisputed.slightest.honesty** (including the full stops). This will centre and zoom the map to the top of Federation Peak.

To find out more about *what3words*, go to: www.what3words.com

Publishing TasWater's Serviced Land Information

Land Tasmania has partnered with TasWater to publish information identifying titles that are serviced by TasWater, and made this information available online via LISTmap.

Serviced Land refers to property that TasWater will permit to be connected to its water and sewerage infrastructure. The identification of Serviced Land is important as it determines TasWater's obligation to connect and supply customers. Serviced Land also underpins policies and arrangements with respect to service extension and expansion, service charges, service introduction, service replacement and developer charges.

In preparation for the 2015-18 regulatory period, TasWater adopted a desktop-

based approach to the identification of its Serviced Land area, guided by a statewide set of business rules that address issues such as minimum flow, static pressure and proximity to infrastructure mains.

TasWater has identified Serviced Land based on individual land titles. Each title has been assessed for a single tenement

connection. In the event that multiple tenements are required, additional assessments will need to be undertaken.

For further information about Serviced Land, and preconfigured links to LISTmap, go to: www.taswater.com.au/Customers/Serviced-Land



TasWater information indicating land with full sewerage services, shown in LISTmap.

Modernising Australia's national datum

Land Tasmania is responsible for the Tasmanian implementation of a project to modernise Australia's national datum, which will affect all spatial stakeholders over the coming years.

A datum is a reference surface that provides "known" locations used to determine the locations of other features. A geodetic datum is a mathematical model of the earth, and a set of reference points, that enables the location of any feature to be expressed in coordinates at a national or international scale.

The Geocentric Datum of Australia 1994 (GDA94) is the current datum recommended for recording the horizontal location of all spatial information in Australia. GDA94 is a static coordinate reference framework – that is, the framework is effectively "fixed" to the Australian tectonic plate.

Australia officially adopted GDA94 on 1 January 2000 in response to changes in spatial technology and user requirements for the national datum that applied at that time – primarily, the desire to align spatial information with the geocentric reference framework used by Global Positioning System (GPS) receivers. It is important to note that in January 2000 the measurement accuracy achieved by stand-alone GPS receivers was approximately 100 metres.

Global Navigation Satellite System (GNSS) receivers, including GPS, don't directly refer to the static GDA94 datum. By necessity, the global coordinate reference frameworks supporting GNSS locations, such as the World Geodetic System 1984 (WGS84), deliver coordinates that vary over time, reflecting tectonic motion. In the time period since GDA94 was defined and "fixed" to the Indo-Australian tectonic plate that motion has resulted in Australia moving approximately 1.5 metres in a north-easterly direction. In 2015, this means locations reported on the GDA94 datum differ by this amount from coordinate locations represented

on GNSS reference frameworks. By 2020 the difference will be approximately 1.8 metres.

It is inevitable affordable consumer-grade GNSS receivers will become capable of determining their location in real time, relative to GNSS reference frames, at decimetre accuracy. This could happen as soon as 2020. GDA94 will be unable to support all Australian positioning and navigation requirements under this paradigm.

In response, the Australian Intergovernmental Committee on Surveying and Mapping (ICSM) has proposed a datum modernisation roadmap that recommends a two-stage implementation, nominally commencing

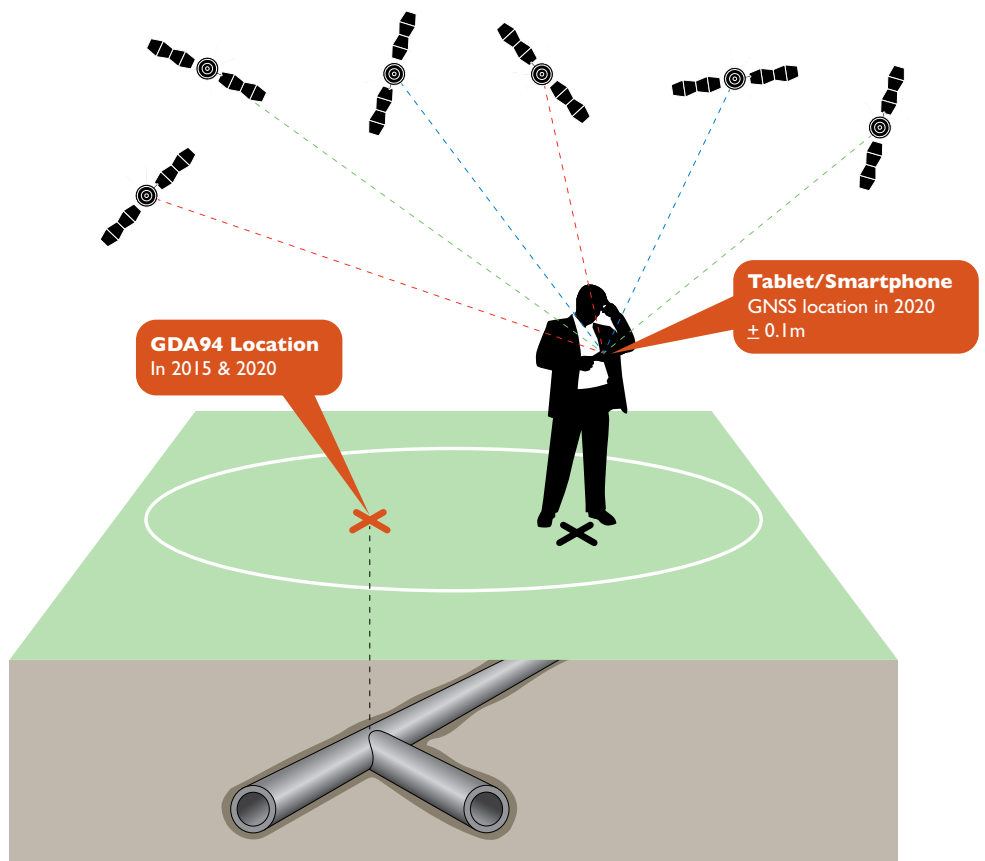
1 January 2017 and concluding 1 January 2023, of a "two-frame" national spatial reference system that more closely aligns with GNSS reference coordinate systems.

Information about the datum modernisation proposal, including detailed background to the decision to modernise, is available on the ICSM website at:

www.icsm.gov.au/geodesy/index.html.

A national implementation working group is currently being formed with representatives from all Australian jurisdictions, including Julian Gill and Scott Strong from **Land Tasmania**.

The Tasmanian community can expect to hear a lot more about this important initiative in the coming months.



Coordinate locations reported on the current national datum, GDA94, are not equivalent to the locations reported by GPS receivers. Currently they differ by approximately 1.5m and this difference is increasing by around 7cm every year.

Find what you need!

Land Information
System Tasmania

the **List**

Providing *all* the information
about *your property*



Tasmanian
Government

www.thelist.tas.gov.au

Client Services contact details

Normal operating hours for all client enquiries are:

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LIST Helpdesk

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Stage one

towards the online lodgement of plans

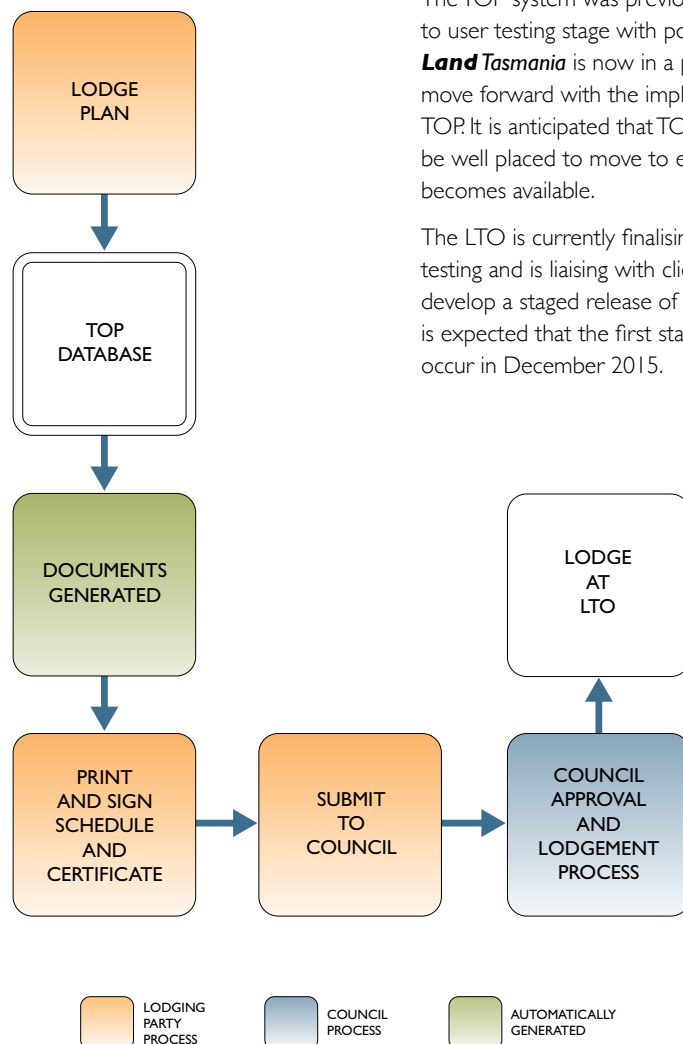
Land Tasmania is implementing the Tasmanian Online Plan (TOP) system as the first stage towards enabling the acceptance of online lodgement of plans to the Land Titles Office (LTO). The TOP system is seen as a method to introduce clients to online plan lodgement. It also provides a platform that is compatible with ePlan, which is a more sophisticated system for the electronic lodgement of survey information.

The system enables the creation of plan-related documents and the lodgement of digital images. The features of TOP include:

- the early allocation of plan numbers;
- pre-population of supporting systems stored data;
- email notifications to relevant parties (including TasWater);
- ease of tracking workflow requirements;
- ease of tracking plan status; and
- the opportunity to familiarise clients with online processing.

The TOP system was previously advanced to user testing stage with positive feedback. **Land Tasmania** is now in a position to move forward with the implementation of TOP. It is anticipated that TOP clients will be well placed to move to ePlan when it becomes available.

The LTO is currently finalising internal testing and is liaising with clients to develop a staged release of the system. It is expected that the first stage release will occur in December 2015.



The online plan lodgement process where the council lodges the plan.



Redefining Australia's coastline

Land Tasmania's Geodata Services Branch (GSB) has been involved in a project with Geoscience Australia (GA) to redefine areas of Australia's coastline. Initially it was a joint program of work for the Tasmanian coast that arose from the Australian Government's need to more accurately define, place and police the territorial seaward limits of both the states and the Commonwealth. The project utilised **Land Tasmania's** capability to undertake photogrammetric work and stereo data capture.

Impressed by the results achieved for the Tasmanian capture, GA extended the project to include a number of other states and territories – one of which is South Australia (SA). The SA work involves complete capture of the Lowest Astronomical Tide (LAT) limit for the state's coast, and High Water Mark (HWM) for certain sections.

The photography used was supplied by SA and they are a joint partner with GA in the project. The LAT aspects of the work are around 55 per cent completed and the data captured has been well received. In fact, SA was so impressed that it has requested that the GSB complete the areas of HWM not included in the initial project. The quality of the work has been promoted at a number of forums, including the Permanent Committee on Topographic Information (PCTI) meeting and Surveying and Spatial Sciences Institute (SSSI) conference.

Land Tasmania is one of the few remaining organisations to have the photogrammetric resources to undertake this type of work. Our capability and quality of work is recognised Australia wide.

Place Names Review

Tasmania's current system for the official naming of places was established more than 60 years ago within the *Survey Co-ordination Act 1944*. This Act was developed for the depiction of place names on topographic maps of the day. There is now a need for a responsive process for managing the assignment of place names within a digital environment.

To respond to these requirements, **Land Tasmania** has commenced the process to introduce a new *Place Names Act*. An Issues Paper has been distributed to stakeholder groups to discuss a number of issues and associated proposals that will inform the drafting of the proposed new Act.

Above: The Wellington 1:50 000 Topographic digital map in a number of variations; within a GIS package, within Google Earth and on a smartphone.

New TASMAM products

Recently released map products are now available for purchase online at www.tasmap.tas.gov.au or from Service Tasmania shops, TASMAM resellers and agents.

1:50 000 Topographic Maps

- Jerusalem
- Denison Range
- Green Ponds
- Wellington
- Hartz
- Bathurst



National Park, Walk and Recreation Maps

- Hartz Mountains Day Walk Map
- Cradle Mountain Day Walk Map
- Bruny Island Walks



NEW PRODUCTS

- DIGITAL DOWNLOADS

- National Park, Walk and Recreation Maps
- 1:50 000 Topographic Maps - 7 maps



DIGITAL DOWNLOADS

Now available online at www.tasmap.tas.gov.au

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