

Track Symbols and Access Certainty

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Walking ACCESS Act 2008
“Free, CERTAIN, enduring and practical”

2010
Walking ACCESS Mapping System

2020
“Tracks/roads depicted do not guarantee public ACCESS.
This dataset is indicative of location only.”



Petition of Pete McDonald: Ask LINZ and NZWAC to redesign the track symbols used on NZ Topo50 maps

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Petition request

That the House of Representatives ask Land Information New Zealand (LINZ) and the New Zealand Walking Access Commission (NZWAC) to redesign, in collaboration, the track symbols used on New Zealand's Topo50 maps (both printed and digital).

Petition reason

The present NZ Topo50 track symbols date from 1977, and do not, I believe, adequately serve the information needs of today's wide range of track users. I think the track symbology of the Bavarian Umgebungskarte 50 series is a state-of-the-art model that New Zealand could adapt. Before such a LINZ–NZWAC collaboration can proceed, it may be necessary for the government to amend LINZ's mandate to require LINZ to consider more deeply than at present the mapping needs of recreational track users.

The petition will remain open until 31 December 2020.

https://www.parliament.nz/en/pb/petitions/document/PET_97833/petition-of-pete-mcdonald-ask-linz-and-nzwac-to-redesign

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Abbreviations

DOC	Department of Conservation
GIS	Geographic Information Systems
LINZ	Land Information New Zealand
LGGA	Local Government Geospatial Alliance
MPI	Ministry for Primary Industries
NZWAC	New Zealand Walking Access Commission
WAMS	Walking Access Mapping System

Introduction

In May 2020 I submitted an electronic petition to the House of Representatives. The petition requests the house to ask Land Information New Zealand (LINZ) and the New Zealand Walking Access Commission (NZWAC) to re-design the track symbols used on NZ Topo50 printed and digital maps. It will remain open until 31 December 2020.

This paper provides some context for the petition. It is the third of three closely related papers. The earlier papers were:

- *Next Priority: The Black Tracks*, June 2019;¹ and
- *Track Symbols on 1:50,000 Printed Topographic Maps*, November 2019.²

Section 1 of this paper summarises the long-standing mapping issues behind the petition. Section 2 hopes for an optimistic and determined collaboration between LINZ and the NZWAC (following a successful petition). It also gathers together some questions that LINZ and the NAWAC could jointly consider and answer. It also suggests some immediate priorities. Section 3 offers one way to organise the tracks into types and subtypes. It also anticipates that designing a modern symbology will require experimentation and will not be a job that can be rushed. Sections 4 covers two other mapping aspects that may need considering. Section 5 concludes.

1. The past, 1992–2020

A petition addressed to the New Zealand House of Representatives is supposed to be a last resort, after trying other parliamentary processes. Rather than viewing my petition as a last resort, a more apt description would recognise the petition as being just one step in a decades-long process of improving the information that is available about tracks in New Zealand. The NZWAC has accomplished much in the last ten years. More remains to be done.

I have been long aware of the need for more-informative maps. I could have written a similar petition a month after I arrived in Kaikohe in Northland, in March 1992. The Department of Survey and Land Information 1:50,000 map of that area looked nice. You could have put it on your wall. But it did not provide me with the main information I needed. The map showed some vehicle tracks and some foot-tracks but it did not show which were open to the public and which were private. The area around

Kaikohe had potential for short walks and runs, yet there was little official public access. I eventually discovered an hour's run, across farmland and through radiata pine. This circuit served me well for several years, without my being sure who owned the land, until one day a forestry contractor jumped down from his cab and chased me, hurling stones and obscenities.³

Unknown to me in 1992, at the other end of the country on 10 June 1990, a group of walking enthusiasts had 'opened' some Otago Peninsula tracks based on isolated and random lengths of unformed public roads, shown on cadastral plans. I was to discover this important fragment of access history about eight years later, because in 1999 I moved from Northland to Dunedin. I wanted to explore my new surroundings. The Otago Peninsula was one of these places. Again the 1:50,000 printed topographic map did not distinguish between public and private tracks. Worse than this, most of the Peninsula tracks that had been opened in 1990 were missing off the 1:50,000 topographic map. (They would be added in about 2013.)

I wrote about maps and access to the New Zealand outdoors in 2003, in a diary called *Going Out for a Bike Ride*.⁴ In 2003, Jim Sutton set up the Land Access Ministerial Reference Group. Simon Kennett submitted the diary, on my behalf, to this government group. This was my first experience of 'trying parliamentary processes'.

In August 2003, the report of the Land Access Ministerial Reference Group suggested that the proposed access agency could be either an independent organisation or part of an existing government entity.⁵ In my response to the report, I favoured the idea of an independent body, but I also wrote: 'I think that an access agency would need very close links with LINZ, and possibly even work out of adjacent offices'.⁶

How committed was LINZ, back in 2003, to a collaborative approach to improving New Zealand's topographic maps and especially the showing of tracks? It was difficult for me to tell, viewing the situation from the outside. But the few clues I spotted did not auger well for the growth of close links between LINZ and recreational map users. In August 2004 LINZ invited individual users and representatives of user groups to complete an online questionnaire whose results would help LINZ to plan the delivery of topographic information. The main aim of this Topographic Information

User Survey was to enable LINZ to meet the needs of its primary customers in the topographic area, defined by cabinet mandate to be the defence forces, the emergency services, local authorities, and Civil Defence and Emergency Management.⁷ There was some doubt whether this survey of users reached the recreational public as a whole. It became apparent to me that LINZ, when designing its topographic maps, did not have a stated duty to consider the special needs of track-using recreators and tourists.

In October 2005 I wrote to Pete Hodgson, the minister for land information, discussing the design of the proposed new topographic maps. I raised the need for a map symbol demarcating foot-tracks that were open to the public. He replied that

the first edition of the new maps [expected in 2008–9] is not currently intended to include any more information than that depicted on the current NZMS 260 series maps. A subsequent review of primary customer core data requirements ... may result in subsequent inclusions or exclusions of mapping information.

As I explained earlier, ordinary walkers like me were not considered to be LINZ primary customers.

The pressure for change, however, was mounting, thanks to Jim Sutton's resolute perseverance. On Thursday 25 September 2008 parliament passed the Walking Access Bill on a voice vote, the support for the bill being almost unanimous.

In 2009 LINZ released the NZ Topo50 series, replacing the Topographic Map 260 series which had begun in 1977. Reflecting on this change a couple of years later, Geoff Aitken, a retired LINZ cartographer, reportedly said that

many people are unaware that the Topo50 series was almost all based on mapping recycled from the 260 series. The new series utilised the old topo mapping in a new format on the new projection and datum. 'I was looking at a map of Whangapeka the other day and the information on it is virtually the same as was published in 1978 ... People aren't aware of that. They see 2009 and think it's a new edition, that it must be right, but the information on it, about 98 per cent of it, is from 1978.'⁸

In December 2010, the NZWAC's online Walking Access Mapping System (WAMS) became available to the public. Over the following ten years, the WAMS would become well regarded as an authoritative online system for obtaining information on tracks.

Local authority tracks data, 2008–2016

Since 2008, the NZWAC has obtained tracks data from a number of sources, including LINZ, DOC, Te Araroa Trust, the New Zealand Cycle Trail and local authorities. In 2013 the Local Government Geospatial Alliance (LGGA), LINZ, DOC and the NZWAC initiated a national database called NZ Walking and Biking Tracks. By February 2015 this database contained about 25,000 kilometres of tracks, 'proof of a successful collaboration of parties who had a somewhat difficult assignment [because of the number of organisations and local authorities involved]'. I suspect that this was an understatement. New Zealand had sixty-seven territorial authorities (ie, city councils and district councils). All these councils needed contacting. As well as this, the professionals of the small project team set up to start the work had 'to grapple with understanding each other's terminology'.⁹

Looking at the wider topographic context beyond this tracks database development, in March 2015 a five-year LINZ topographic strategy came into effect. Goal 2 of this strategy set objectives connected with keeping topographic data complete, up to date, consistent and accurate. This in-house LINZ document painted a confident and unequivocally positive picture of New Zealand's state topographic mapping: 'The National Topographic Office's processes and techniques for data collection and maintenance have served the current products well. The Topo50 and Topo250 map series are still world class.'¹⁰

Although constructing a national tracks database was a notable achievement for the LGGA, the quality of some of the data varied. An initial intention to collect only 'gold standard' aggregated data changed to a more flexible acceptance of data that was 'fit for purpose'. Also, this database included the familiar LINZ disclaimer stating that the existence of a track did not necessarily indicate a public right of access, thus perpetuating the infuriating uncertainty associated with this disclaimer.¹¹ Maintenance of the NZ Walking and Biking database

ended in 2016 and some of its track information became out of date.

In about 2017 the NZWAC began building a new tracks database called Find My Adventure. The commission is working directly with individual councils to get very high-quality data and to slowly expand this new database. This large project will take some time to complete. At present the Find My Adventure map is rather like an online version of a traditional guidebook to walks, a mixture of map extracts, text and landscape photographs. The commission's GIS team also aims to use some of the high-specification track data on its other WAMS maps, such as Tracks and Trails.

The Find My Adventure database is an important national tracks database. Section 4 will ask some questions about it.

Review (2019) of the Walking Access Act 2008.

In June 2019 I submitted a short paper to the review of the Walking Access Act 2008. The main section of *Next Priority: The Black Tracks* described what I called the black-tracks problem, which I had been aware of for twenty-seven years.¹²

In September 2019 the MPI report on the findings of the review of the Walking Access Act 2008 acknowledged the success of the WAMS.¹³ This much praised mapping system, specifically designed for New Zealand circumstances, was (and is) still a work in progress. The online Tracks and Trails map was beginning to differentiate between public tracks and private tracks, thus tackling head-on the vital job that NZ Topo50 avoided. The Tracks and Trails map was already a significant technological achievement, but it needed to become more complete.

The review of the Walking Access Act 2008 recommended an increase to the commission's funding, which had not increased since the commission's establishment in 2008. The review described this funding as 'minuscule'.

In December 2019 my study *Track Symbols on 1:50,000 Printed Topographic Maps* emphasised that the digital version of NZ Topo50 was a crucial part of the WAMS, being the primary topographic basemap for the national online Tracks and Trails map. I argued that Topo50 was not designed for this role and was poorly suited for it. I suggested that 'discussing and clarifying the content and design of Topo50 for the immediate future would helpfully inform and consolidate the Commission's decision-

making as it develops the 'Tracks and Trails module of the WAMS'.¹⁴

Although some aspects of the online Tracks and Trails map's track symbols were more utilitarian than aesthetic, this was through no fault of the Commission's map-makers. The lack of access information on the NZ Topo50 base-map forced the designers of the Tracks and Trails map to resort to overlaying the black tracks with coloured lines, an unavoidable stop-gap solution rather than an ideal one.

The Covid-19 pandemic then intervened, delaying most parliamentary business for three months. A formal policy process, scheduled to respond in 2020 to the findings of the review of the Walking Access Act 2008, was pushed back to early 2021. However, the May 2020 budget, delivered while the country was still in Level 2 lockdown, allocated to the NZWAC an extra \$1.8 million for the 2020/2021 and 2021/2022 budget years, doubling the commission's annual budget. Ric Cullinane, the commission's chief executive, said the money was crucial: 'Over recent years, we have been drawing down on cash reserves to do our important work securing and promoting public outdoor access. This budget funding gives us the certainty we need to keep doing our work, for the benefit of all New Zealanders.'¹⁵

In May 2020 I lodged the electronic petition to reinforce the arguments laid out in *Next Priority: The Black Tracks* and in *Track Symbols on 1:50,000 Printed Topographic Maps*. If successful, the petition will strengthen those arguments by

- supporting the proposed increased collaboration between LINZ and the NZWAC; and by
- encouraging LINZ to move slightly away from its orthodox core-geographic model of 1:50,000 topographic mapping and towards a model that differentiates between public and private tracks.

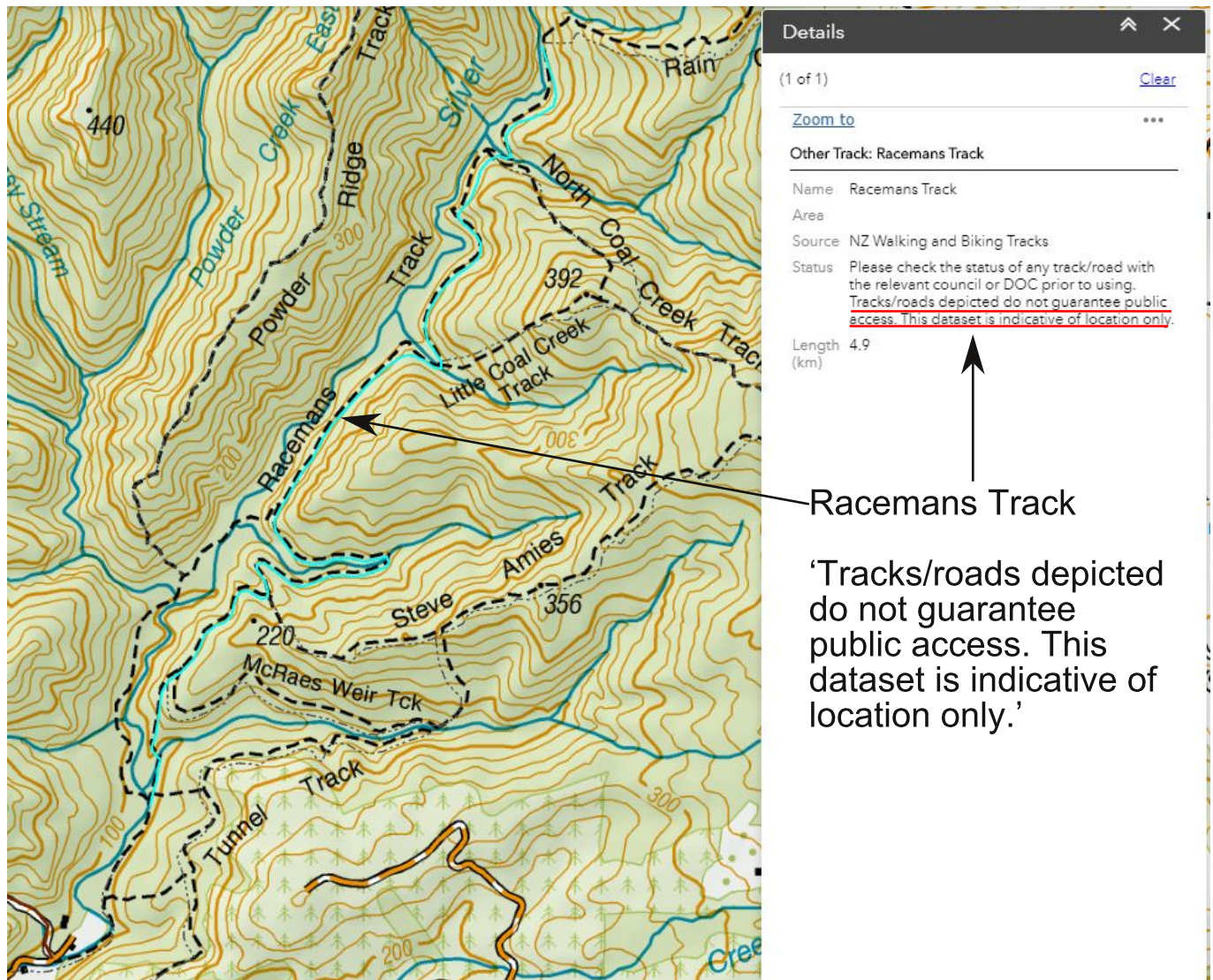
The rules on the brevity of electronic petitions are clear: a petitioner can put up to 300 characters in the Request field and up to 500 characters in the Reason field. The petitioner may need to distil an ocean of details into just a few drops. A full story about the track symbols of NZ Topo50 mapping would be more than a few paragraphs. But the essence is straightforward: the track symbols do not indicate which tracks are public and which are private. The 451 printed NZ Topo50 sheets that cover New Zealand fail to provide this vital information. A

post by someone on NZ Trumper in June 2020
bluntly stated the problem:

madpom commented 17 hours ago, 6 June
2020.

LINZ paper maps indicating which roads
and tracks have public access vs which are
private would be my first request. OS
[Ordnance Survey] manage it on paper
[and digitally] in the UK. WAMS do it (un-
tidily) online here. So why can't LINZ?
Anything else beyond that would be a
bonus.

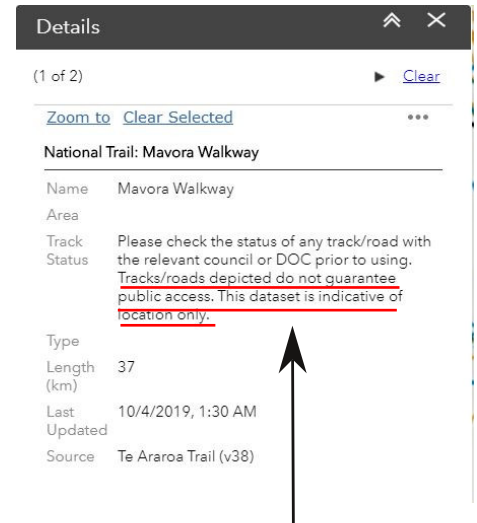
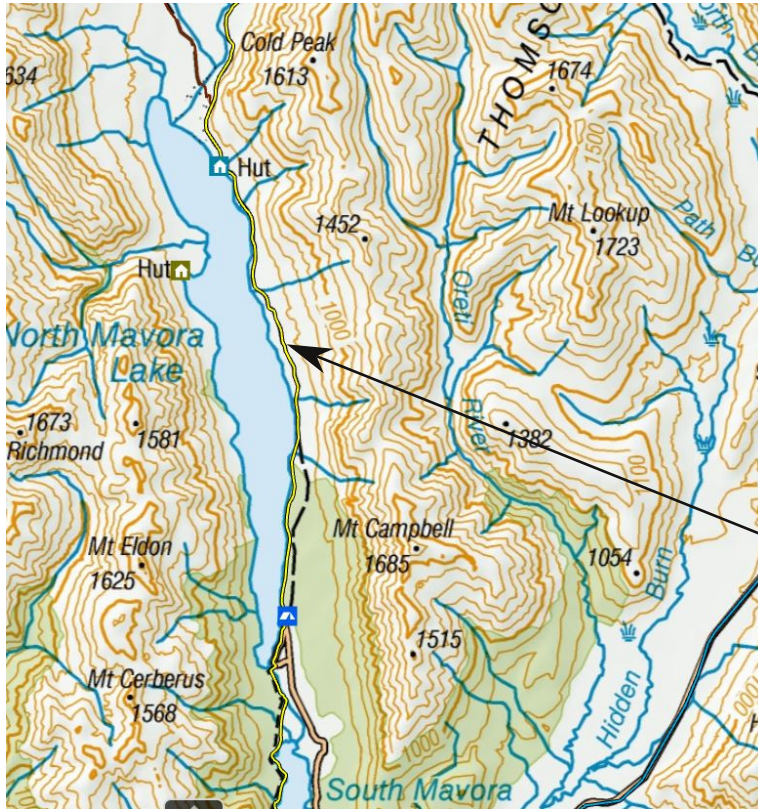
Track Symbols and Access Uncertainty: A Silver Peaks (Dunedin) Example



Extract from the online Tracks and Trails map, using the NZ Topo50-CE17 Dunedin basemap. Enlarged. 8 June 2020.

The data source for Racemans Track on this map is the NZ Walking and Biking Tracks dataset. A higher-specification data source, called Find My Adventure, is under construction.

Track Symbols and Access Uncertainty: A Te Araroa Trail Example



Te Araroa Trail

‘Tracks/roads depicted do not guarantee public access. This dataset is indicative of location only.’

Extract from the online Tracks and Trails map, using the NZ Topo50 basemap. 29 June 2020.

Te Araroa Trail runs along the east side of the lake. On this online map, the broken black line of the basemap has been overlaid with a yellow line symbol, signifying the national trail. But the disclaimer precludes the map user from assuming that this track is open to the public. The pop-up advises map users to ‘check the status of any track/road with the relevant council or DOC prior to using’.

Some submitters to the 2019 MPI review of the Walking Access Act 2008 asked for an authoritative and complete one-stop shop for track information. Plenty of information about the Mavora Lakes section of Te Araroa is available elsewhere, such as on the WAMS Outdoor Access Map or on the DOC website. But if everyone tolerates this shopping around for information, an authoritative national one-stop shop may never eventuate. Tracks that are freely open to the public should be recognised as such and ought not to be accompanied by the disclaimer.

A higher-specification data source for the section of Te Araroa on this map, called Find My Adventure, is under construction.

2. The immediate future (following a successful petition)

Collaboration between LINZ and the NZWAC

The 2019 MPI report on the findings of the review of the Walking Access Act 2008 talks about ‘the importance of the Commission’s ability to be involved in cross-government work’.¹⁶ This ability is vital. As well as requiring LINZ and NZWAC to redesign the track symbols used on the Topo50 maps, my petition asks that these government bodies collaborate in this work. An optimistic problem-solving approach is needed. Given determined collaboration, plus Kiwi creativity and a few ideas from Europe, LINZ and the NZWAC would be in a position to combine professional cartography with modern GIS sources to produce high-quality maps that provide the track information needed.

Now, sixteen years after I first questioned LINZ’s mandate, it may still be limiting LINZ’s commitment to meeting the needs of recreational map users. The mandate may also be limiting LINZ’s freedom to spend money on such a function. Hence the reference in my petition to the possible necessity for the government to amend LINZ’s mandate.

Now and again during national debate about the mapping of tracks, some well-informed people have praised the Torrens system that underpins land registration in New Zealand. This praise may be justified. But the great accuracy and the absolute authority of the Torrens system sometimes results in discrepancies between the legal location of a track and the actual physical location of the track. One of the questions below will mention this issue again.

Questions for discussion

Questions about the future of NZ Topo50

Some casual discussion about the content and design of NZ Topo50 has appeared in 2020 on social media. As far as I know, no formally arranged public discussion on the same topic has taken place recently. When I try to see where NZ Topo50 and the online Tracks and Trails map are heading, I stop suddenly, foiled by unknowns about the future of NZ Topo50. The petition requests the House to ask LINZ and the NZWAC to collaborate in redesigning NZ Topo50’s track symbols. I assume that this collaborative redesign would be preceded by some general discussion about the future of NZ Topo50. The following questions are ones that, it seems to me, would need discussing and

answering before a redesign of NZ Topo50’s track symbols could start:

- How long does the government expect the present NZ Topo50 series to remain in place, subject only to minor revisions and minor evolutionary improvements?
- Are any plans being made for a substantially redesigned national 1:50,000 series, to replace NZ Topo50?
- If a substantially redesigned national 1:50,000 series is envisaged, will the new series remain an orthodox core-geographic map or will it become a dual-purpose map like the UK Landranger, which is core-geographic enhanced with public footpaths and public bridleways?
- If a redesigned national 1:50,000 series is envisaged, will its design take into account its role as the primary basemap for the national online Tracks and Trails map?
- Does New Zealand possess enough skilled cartographers and GIS professionals to cope with the work involved in replacing NZ Topo50 with a substantially redesigned 1:50,000 series?
- If a redesigned national 1:50,000 series is envisaged, will all the sheets remain pre-printed (by offset or plot)? Or will some sheets become only available by print-on-demand?
- Would there be a possibility of printing the sheets on plastic instead of paper?

Answering these questions would give everyone involved a better idea on whether Topo50’s track symbology (or that of its successor) will remain limited, similar to the present symbology, or will be redesigned to carry more information.

Questions about local authority tracks data

Section 1 described how the NZ Walking and Cycling Tracks database was an important data source from 2013 to 2016, to then be replaced in 2017 by the commission’s Find My Adventure database, which is still under development. A few questions come to mind, whose answering could help the public to understand the situation and to contribute to any public consultation that might take place.

- Is the building-up of the Find My Adventure database proceeding well?
- One of the issues that complicates the collection of authoritative data on tracks is the occasional discrepancies between theoretical track locations on cadastral plans and actual

track locations on the ground. What steps are being taken to eliminate these misalignments?

- Have any other snags emerged affecting the collection of tracks data?
- Is every local authority obliged to contribute tracks data to the Find My Adventure database?
- If yes, are all local authorities doing so? If no, who will be responsible for collecting the high-specification data for the tracks unsurveyed by the local authority?
- Is the system of data collection foolproof, so that it captures nationally all tracks that are free, certain, practical and enduring? If no, can it be made so?
- Will the Find My Adventure database include authoritative information about whether a track is private or freely open to the public?
- What steps could be taken to minimise the cost of collecting track data?
- When will the Find My Adventure database be complete?
- What steps are being taken to provide for the database's routine maintenance at minimal cost?
- At what stage will the Find My Adventure high-specification tracks data be used to update the older and less accurate Tracks and Trails tracks data?

Candidates to be shown as public tracks

The walking-access debate of 2003–8 took place at different levels of understanding, ranging from the passionate thoughts of trampers and farmers to the authoritative scholarship of an ex-registrar-general of land. Similarly, any debate about track symbols that distinguish between public and private tracks will occur at different levels, ranging from the plain English of grassroots walkers and cyclists to geospatial data management and easements in gross.

A day after his brief 6 June post on NZ Trumper, madpom suggested a direction in which to head. His suggestion has since grown into the following informal list of tracks whose legal status would or might result in them being shown on topographic maps as being open to the public:

1. any track on public (crown) land where there is a right of access to the land (identifiable by the 'legal' field in the LINZ parcel data). This will include tracks on any of the eight basic reservations that make up what is colloquially known as the Queen's Chain:

public roads (also called legal roads); marginal strips; ambulatory marginal strips; public reserves along water; esplanade reserves, of various types; recreation reserves; esplanade strips; and Maori reservations.

2. any track which is defined as having public access by a perpetual covenant.
3. any track defined as having public access by a perpetual easement.
4. any Gazetted walkway, as defined in the Walking Access Act 2008.
5. any track on land owned by a local authority and which the local authority has declared is a track open to walkers and/or cyclists. Water catchments are a common site for such tracks. Some local-authority tracks may be subject to bylaws.

Lawyers will want to kick this rough list around, possibly quite energetically. It is just a start, which will need amending and rewriting. It may expand a little, but it will remain a simplification, behind which will be many exceptions and provisos. Bear in mind that Brian Hayes's 2008 book *Roads, Water Margins and Riverbeds: The Law on Public Access* occupies 235 pages. Although the public tracks will be anchored on a variety of legal instruments and proper terminology, a general aim in plain English will be for the finished list to embrace all tracks that are free, certain, practical and enduring. (The meaning of 'certain' is discussed later.)

Many track users may not be interested in knowing the legal basis of the tracks. Yet there's no harm in enlightening those who do take an interest. There may be a need for the NZWAC to draw up an agreed, semi-authoritative list of this sort. The commission may already have a similar list, or perhaps a more detailed one, for internal use. Writing a version for the public would fulfil the commission's statutory function of 'educating the public ... about walking access'.¹⁷

3. Typology and symbology

A modern typology: three levels of information

Top level: physically evident tracks

If my petition succeeds, before the cartographers can design new track symbols, they will need to draw up a list of modern track types. A common top level for mapping purposes contains about five main types according to their physical characteristics and approved use, such

as vehicle tracks, shared-use tracks (for walking and cycling, and sometimes horse riding), walking-only tracks, mountain-biking tracks (some of which are steep narrow tracks for skilled mountain-bikers) and routes. In some countries, the core-geographic state mapping has a top level of this sort.

NZ Topo50, New Zealand's core-geographic mapping, at present has just three main groups: vehicle tracks, foot tracks, and poled routes. (It also has a closed-route sign, an unusual addition but not unique, discussed in *Foot-tracks in New Zealand*.¹⁸) Recreational tracks in New Zealand, both private and public, have increasingly become shared-use, allowing for walking and cycling and sometimes horse riding. As early as September 1998, Dunedin City Council approved a Track Policy and Strategy that stated: 'Priority will be given to multi-use tracks, such as those which allow for a range of users including mountain bikes and walkers. Tracks are multi-use facilities unless otherwise identified by a decision of Council or legislated in statute against a particular use.' NZ Topo50 has not yet caught up with this diversifying of track types.

Second level: public tracks and private tracks

Each of the main types can then be split into subtypes. My preference would be to divide each main type into two subtypes: open to the public or not open to the public. NZ Topo50 does not attempt this split but the online Tracks and Trails map, when used with the NZ Topo50 basemap, is beginning to achieve it. The Tracks and Trails map overlays the black tracks with coloured lines denoting DOC tracks, the New Zealand Cycle Trail, Te Araroa, and gazetted walkways. Users of the Tracks and Trails map are left to assume, probably safely, that tracks shown with a coloured overlay are freely open to the public. Many local-authority tracks still appear on the Tracks and Trails map as black lines; they await a coloured overlay signifying that they are open to the public.

Third level: other information

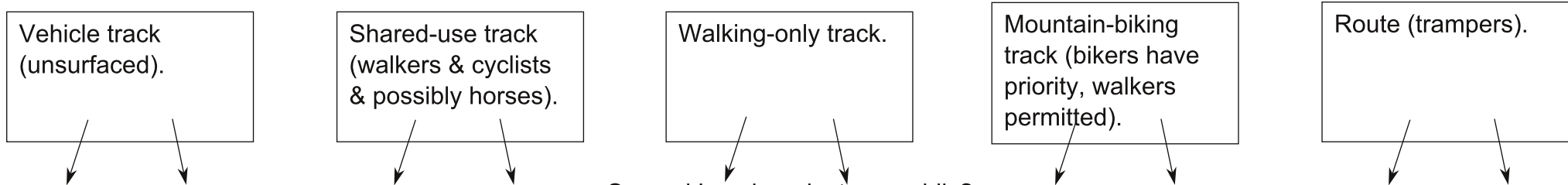
A third level can provide additional information, such as the track name, the degree of difficulty, whether dogs and guns are permitted and whether pram-friendly. The online Tracks and Trails map is beginning to provide this third-level information interactively, with pop-up text boxes. One way to indicate the difficulty of a walking track or route would be to use the classification scheme laid out in the Standards

New Zealand 2004 booklet *Tracks and Outdoor Visitor Structures*. The difficulty of a cycle track could be shown by using the DOC mountain-bike track grades. Alternative national classification schemes may be developed by the Local Government Geospatial Alliance.

Three levels of track information for a national series of recreational 1:50,000 topographic maps.
Organising the tracks into types and subtypes is an essential planning stage that should take place before designing a map's track symbols.

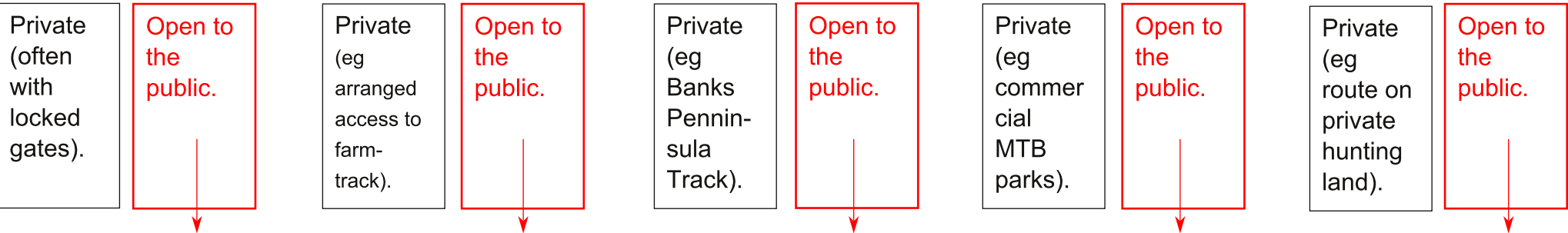
Top Level – physically evident tracks.

In some countries, including NZ, the state-agency core geographic topo maps provide this top-level info but no 2nd- or 3rd-level info.



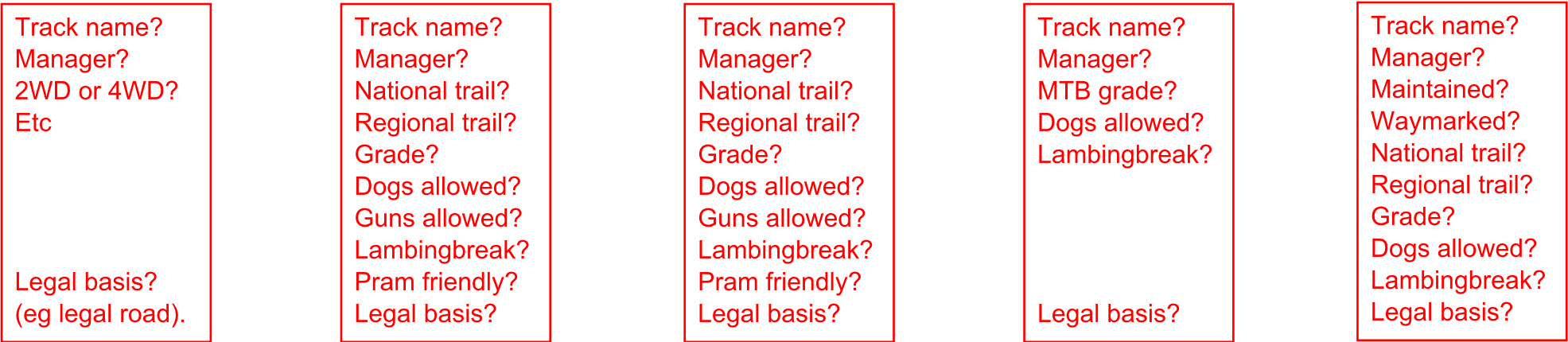
Second Level – private or public?

In some countries, a national series of printed thematic topo maps provides top-level (phys. evid.) & 2nd-level (priv/pub) info. NZ does not have a national series of printed thematic topo maps. In NZ this 2nd level is provided nationally by the online Tracks & Trails map, which shows DOC tracks, Te Araroa, gazetted walkways and the NZ Cycle Trail. It does this by overlaying the NZ Topo50 basemap tracks with coloured line symbols.



Third Level – other information.

Printed topo maps, even when they are thematic rather than core geographic, seldom provide this 3rd level of track information (except for national and regional trails). Much of this 3rd-level information will increasingly be provided on online topo maps, either by pop-up text boxes or by links to web pages.



A modern symbology: track symbols that show access certainty

This paper and the two closely related previous papers have recognised the potential advantages of using track symbols to provide access certainty (either on a printed map or on a digital map). Organising a hierarchical typology, as described in the last subsection, can help to identify what track symbols will be needed for a core-geographic national map series and for a recreational national map series. But drawing up this typology will be the easy part. More difficult, once the track categories and subcategories have been decided and named, will be the task of actually designing a symbology that is technically achievable and aesthetically acceptable and which fits into the overall style of the map.

My paper *Track Symbols on 1:50,000 Printed Topographic Maps* provides examples of track symbols from recent maps from twenty-five countries in Europe. Among the most impressive European maps with ideas worth considering is Bavaria's Umgebungskarte recreational series, which has thirteen track types, each of which reflects a track's physical characteristics and its users rather than its management body. Deciding which ideas to borrow or adapt, if any, would benefit from a coming together of some skilled professionals from cartography and GIS who can analyse the complexities and can devise a symbology that is intuitive and informative. Among the questions this expert planning will need to answer will be:

- will the symbol for a vehicle track be a single line or a double line?
- how many colours will be available for the line symbols?
- will national and regional trails be shown by line decorations or by overlaid coloured lines?

These questions may appear to be basic and easy to answer but they are interconnected. Changes tend to have a knock-on effect, reverberating through the symbology and even through the overall map style. Designing a symbology for a national topographic map series involves much experimenting. The job cannot be rushed.

4. Other matters

Cost implications of a successful petition

Shortly after my petition appeared online, a tramper emailed me, asking: 'Have you

considered the huge effort that would be required for LINZ to survey all the thousands of kilometres of tracks in the country?'

The collecting of track spatial data nationally has been going on for a hundred years and is still in progress.

Firstly, LINZ already aspires to show all physically evident tracks on NZ Topo50 maps, whether the tracks are public or private. This commitment serves the needs of rescue teams, the police and the defence force. Taxpayers and possibly some ratepayers are already paying for the collection of this spatial data. I don't know if LINZ and other contributors of spatial data (DOC, local authorities, the NZWAC, Te Ara-roa Trust, the New Zealand Cycle Trail) have sufficient resources to achieve the 100% goal.

Secondly, by adding layers over NZ Topo50, the online Tracks and Trails map seeks to show which tracks are open to the public. Taxpayers' money is already being spent on this adding of access information to existing spatial information. I don't know if the NZWAC has sufficient resources to continue this process until the Tracks and Trails map is complete.

I am not aware of any estimate, by a government body or by a private organisation or individual, of the extra cost of implementing what the petition asks for.

1:25,000 mapping

1:50,000 maps are too small a scale for showing walking and cycling tracks on urban fringes. Because of this, various people have raised the possibility of producing some 1:25,000 maps. The matter will crop up again sometime. In 2016 the NZWAC ran a pilot project in the Auckland area to design walking access into urban areas. 1:25,000 maps can show walking tracks and shared-use tracks that connect rural surrounds with urban fringes.

If a country produces both 1:50,000 and 1:25,000 national mapping, it may sometimes be possible for the two series to use similar track symbols. If work begins on designing new track symbols for NZ Topo50 or its successor, the design team may be able to create a 1:50,000 symbology that could easily be adapted for 1:25,000 mapping.

5. Summary

During the time that I have been publicising my petition, the responses have varied from very supportive to: 'What's the problem? She'll be right'. As I see things, the track symbols on our

NZ Topo50 maps are far from right. They are legacy symbols that date from 1977, before the widespread arrival of digital maps. They were not designed to work in partnership with the track symbols of today's online Tracks and Trails map. The present Tracks and Trails map makes the best of difficult circumstances.

Despite its miniscule budget, the NZWAC has been forging ahead, guided by the four goals: free, certain, practical and enduring. 'Free', 'practical' and 'enduring' are sufficiently clear track requirements not to need any explaining. But what constitutes certain access to a track might be open to interpretation. For me, a walking track to which the public have certain walking access is one that any walker can use unhindered at any time of the day on any day of the year (except, for some tracks, during lambing). But reaching agreement on the meaning of 'certain' in the context of tracks may be more difficult than people realise. It is debatable, for example, whether DOC's Great Walks would meet the criteria that I have just described.

The Otago Peninsula tracks that were opened in 1990, mentioned in Section 1, have now been popular for thirty years. At the time of writing, 18 June 2020, a few of these Peninsula tracks, managed by DOC, are shown on the authoritative national online Tracks and Trails map by overlaid brown line symbols. But all of the other indisputably public Peninsula tracks still appear on this map as black tracks (when using the NZ Topo50 basemap). Some of them are now interactive (you click on the track), which is an improvement, but the text box that pops up warns the map user that 'Tracks/roads depicted do not guarantee public access'. This is not access certainty.

Notes

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- ¹ Pete McDonald, *Next Priority: The Black Tracks* (Dunedin, NZ: P McDonald, 2019), pp. 7–22, <https://petemcdonald.co/Sub2008Act.pdf>.
- ² Pete McDonald, *Track Symbols on 1:50,000 Printed Topographic Maps* (Dunedin, NZ: Pete McDonald, 2019), pp. 5–13, 73–79, <https://petemcdonald.co/TrkSym.pdf>, PDF.
- ³ Pete McDonald, *Foot-tracks in New Zealand: Origins, Access Issues and Recent Developments*, 2 vols. (Dunedin, NZ: P McDonald, 2011), pp. 342–43.
- ⁴ Pete McDonald, *Going Out for a Bike Ride: An AOK Diary 2002-3* (Dunedin, NZ: P McDonald, 2003), pp. 12–13, 15, 23, 27, 32.
- ⁵ Land Access Ministerial Reference Group, *Walking Access in the New Zealand Outdoors: A Report by the Land Access Ministerial Reference Group* (Wellington, NZ: MAF Policy, 2003), p. 75.
- ⁶ Pete McDonald, *High-quality Access: A Response to the Feedback Questions That Were Attached to the Report, Walking Access in the New Zealand Outdoors* (Dunedin, NZ: P McDonald, 2003), p. 12.
- ⁷ McDonald, *Foot-tracks in New Zealand: Origins, Access Issues and Recent Developments*, p. 470.
- ⁸ Josh Gale, 'The Future of Maps,' *Wilderness*, 1 Aug, 2013.
- ⁹ Charles Fairbairn, 'On Track,' *NZ Local Government Magazine*, 31 Mar, 2015, <https://localgovernmentmag.co.nz/on-track/>.
- ¹⁰ National Topographic Office, *Topographic Strategy* (Wellington, NZ: Land Information New Zealand, 2015), p. 6.
- ¹¹ 'NZ Walking and Biking Tracks,' LINZ, updated 30 Aug, 2016, accessed 4 June, 2020, <https://data.linz.govt.nz/layer/52100-nz-walking-and-biking-tracks/>.
- ¹² McDonald, *Next Priority: The Black Tracks*, pp. 15–22.
- ¹³ Ministry for Primary Industries, *Report on the Findings of the Review of the Walking Access Act 2008* (Wellington, NZ: Ministry for Primary Industries, 2019), pp. 39–40.
- ¹⁴ McDonald, *Track Symbols on 1:50,000 Printed Topographic Maps*, p. 79.
- ¹⁵ 'New Budget Funding Means More Outdoor Access for Kiwis,' Media release, NZWAC, 2020, accessed 24 June, 2020, <https://www.walkingaccess.govt.nz/about-us/news/new-budget-funding-means-more-outdoor-access-for-kiwis/>.
- ¹⁶ Ministry for Primary Industries, *Report on the Findings of the Review of the Walking Access Act 2008*, p. 44.
- ¹⁷ Walking Access Act 2008, 2008 No 101, 10(1)(j) (2008).
- ¹⁸ McDonald, *Foot-tracks in New Zealand: Origins, Access Issues and Recent Developments*, pp. 474–75.