Deloitte.

National Tourism Infrastructure and Investment Assessment – Appendices document

Tourism Industry Aotearoa

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National Tourism Infrastructure and Investment Assessment context

TIA engaged Deloitte New Zealand, in partnership with Deloitte Access Economics, to conduct an assessment of the nation's tourism infrastructure priorities. The study comprised a number of work streams:

- Surveys of the sector, including the tourism operator survey that was sent to a list of TIA members (around 1,500), and the Local Government (LG) survey that was sent to a New Zealand-wide list of district and regional councils. Across the two surveys, a total of 340 responses were received.
- 25 in-depth consultations, including a mixture of tourism operators, local government and chambers of commerce, as well as pan-industry groups.
- Analysis of applicable data for each infrastructure type: this includes tourism activity, infrastructure demand, and infrastructure supply where the data were available.
- Development of a framework of tourism infrastructure investment prioritisation, using the evidence base developed through the surveys, consultations, and data analysis.

The main report (separate to this document) presented the findings of the study. The main report focused on the outcomes of the tourism investment infrastructure prioritisation process, as well as the reported barriers to tourism investment, and options to mitigate those barriers.

Appendices document

This appendices document provides further detail to our analysis and the information sources which underpinned our findings presented in the main report. A description about each appendix contained in this document are set out in the points below:

- Appendix A: Prioritisation by Region provides an outline of the prioritisation results for each of the assessed tourism regions.
- **Appendix B: Survey Data** sets out the combined results of the sector surveys mentioned above, broken down by survey question.
- **Appendix C: Consultations** sets out the tourism infrastructure issues that were raised in consultation sessions.
- **Appendix D: Data sources** outlines the data sources that were explored as part of the exercise to measure the infrastructure use and constraints across regions for each infrastructure type.

The body of the report is available from the TIA website: <u>https://tia.org.nz/advocacy/tia-projects/infrastructure-and-investment/</u>

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Appendices



Appendix A: Applying the Prioritisation Framework by Region

The following figures apply the prioritisation framework for tourism regions using regional data. The figures presented in this appendix are either presented at the regional levels contained in the survey (i.e. at a 'higher area' level), or at a disaggregated regional level. These regions are outlined in the table below.

Table A.1: Regions within the prioritisation analysis

Regions	
Auckland	Northland
Bay of Plenty	Central Otago
Canterbury	Queenstown-Wanaka
Hurunui	Dunedin
Mackenzie	Clutha*
Timaru	Rotorua
Kaikoura	Fiordland*
Waitaki	Southland*
Coromandel	Taranaki*
Gisborne	Taupo
Hawke's Bay	Waikato
Ruapehu	Wairarapa*
Manawatu*	Kapiti-Horowhenua*
Whanganui*	Wellington
Marlborough	West Coast
Nelson-Tasman	

*Some regions are not included in this appendix due to data limitations.

This analysis highlights the wide variation of regional priorities compared to the national-level priorities as set out in the main report. This reinforces that each region, and indeed each project, can be assessed using the prioritisation framework in relation to the local or regional circumstances.

Regions are ordered from ones with the most identified issues to the least.

Figure A.1: Infrastructure prioritisation - Northland



Level of coordination required

Figure A.2: Infrastructure prioritisation – Queenstown-Wanaka^



Queenstown-Wanaka

Level of coordination required

Figure A.3: Infrastructure prioritisation – Waikato



Figure A.4: Infrastructure prioritisation – Coromandel*



Coromandel

* 7 survey responses

Figure A.5: Infrastructure prioritisation – Canterbury^



^ Survey responses were collected at a higher area level. However, tourism activity and other underlying data were disaggregated at the regional level.

Figure A.6: Infrastructure prioritisation – Central Otago^



Level of coordination required

Figure A.7: Infrastructure prioritisation – Bay of Plenty



Level of coordination required

Figure A.8: Infrastructure prioritisation – Mackenzie^



Level of coordination required

Figure A.9: Infrastructure prioritisation – Auckland



Figure A.10: Infrastructure prioritisation - Wellington^



Level of coordination required

Figure A.11: Infrastructure prioritisation - Kaikoura^



^ Survey responses were collected at a higher area level. However, tourism activity and other underlying data were disaggregated at the regional level.

Figure A.12: Infrastructure prioritisation – West Coast



Level of coordination required

Figure A.13: Infrastructure prioritisation - Hurunui^



Level of coordination required

^ Survey responses were collected at a higher area level. However, tourism activity and other underlying data were disaggregated at the regional level.

Figure A.14: Infrastructure prioritisation – Timaru^



Level of coordination required

Figure A.15: Infrastructure prioritisation – Taupo*



* 4 survey responses





Level of coordination required

Figure A.17: Infrastructure prioritisation – Gisborne*



* 3 survey responses





Level of coordination required

Figure A.19: Infrastructure prioritisation – Hawke's Bay



Figure A.20: Infrastructure prioritisation – Marlborough*



Level of coordination required

* 6 survey responses

Figure A.21: Infrastructure prioritisation – Nelson-Tasman



Figure A.22: Infrastructure prioritisation – Dunedin^



Level of coordination required

Figure A.23: Infrastructure prioritisation – Ruapehu^



Appendix B: Survey Data

Deloitte created two survey versions for the project, one tailored to tourism operators and one tailored to local government. A collaborative approach was undertaken to design and develop both surveys and the content. The Survey questions were finalised by incorporating feedback from the wider Deloitte team, TIA and Local Government New Zealand (LGNZ).

As part of the survey design process, the tourism operator survey was piloted with TIA identified participants (which included TIA staff and other stakeholders in the tourism industry). Feedback from the pilot process was incorporated into the final version of both surveys.

While two versions of the survey were created, the content of each survey was largely the same, which facilitated consolidation of the data for the purpose of our analysis. The survey questions related to the following matters:

- Seasonality for the respondent organisation (i.e. the peak, shoulder and off peak months);
- Classification of the current state of tourism infrastructure for a provided list of infrastructure types (in terms of capacity and quality);
- The future state of tourism infrastructure (including: the expected growth in demand for particular infrastructure types against forecasted national and international visitor growth, confidence that capacity issues would be addressed by 2025, areas of concern relating to the infrastructure needed to support the continuing growth of the tourism industry in New Zealand, and roadblocks to infrastructure development);
- The current state of national tourism infrastructure, compared to that of two years ago; and
- The infrastructure areas which are the highest priority for investment at a national level.

The final version of the survey was uploaded to Survey Monkey and was sent to the following groups:

- The Tourism Operator survey was sent to a list of TIA members (around 1,500) provided by TIA, which included tourism operators and relevant industry groups.
- The Local Government survey was sent to a list of contacts from district and regional councils in New Zealand (representative of all regions), provided by LGNZ.

Respondents were given two weeks to respond to the tourism operator survey and three weeks for the local government survey, however responses for both surveys were still considered after the respective deadlines.

The survey data was used as a basis for identifying tourism infrastructure issues affecting the industry and complemented the qualitative issues raised by the industry in consultations, and data collected from desktop based research. Identified issues were then prioritised using a prioritisation framework and set of criteria agreed with TIA and strategic industry representatives.

The Tourism Operator and Local Government surveys shared a similar structure and the content was largely the same between the two surveys. The high level sections for both surveys was as follows:

- Part A: respondent details
- Part B: current state (of existing infrastructure)
- Part C: future state (of infrastructure)
- Part D: general points

Although contact information was collected under both surveys, responses have been aggregated to ensure individual responses are anonymous.

Respondents were asked various questions under each of the sections outlined above, and selected questions are set out in this appendix. Where questions differed between the Tourism Operator and Local Government survey, it has been noted in the appendix which survey a particular question relates to.

Responses have been aggregated to provide a summary of all responses, however given the differences between the surveys some questions only contain responses from the Local Government survey. This has been highlighted below, where relevant.

The graphs below relates to selected, combined responses from both the Tourism Operator survey and the Local Government survey. Please note that Tourism Operator survey respondents self-selected the region most applicable to them and answered questions in relation that region. Local Government survey respondents answered the survey based on their local authority region.

Part A: Respondent details

Question - For each month please identify whether this is a peak, shoulder peak, or off-peak period for your organisation.

Responses are summarised in Chart B.1.



Chart B.1: Peak and shoulder peak months identified by respondents, both surveys

Part B: Current state of existing infrastructure

Question - For the types of TRANSPORT INFRASTRUCTURE that your customers currently use, could you please indicate:

- the available infrastructure capacity at peak times; and
- the degree to which the infrastructure meets the needs and expectations of the user (quality), in peak times. For example, for road transport you may consider congestion and whether it includes adequate signage or rest areas and facilities.

Responses are summarised in Chart B.2 and Chart B.3.



Chart B.2: Available transport infrastructure capacity at peak times, both surveys

Chart B.3: Degree that existing transport infrastructure meets the needs and expectations of users at peak times, both surveys



Question - For the types of central or local government PUBLIC INFRASTRUCTURE that your customers currently use, could you please indicate:

- the available infrastructure capacity at peak times; and
- the degree to which the infrastructure meets the needs and expectations of the user (quality), in peak times. For example, for car parking you may consider available parking spaces and access to payment facilities or proximity to required location.

Note for the Local Government survey, this question was split into two (questions 4 and 5 of the Local Government survey). Respondents were asked to comment separately on local government public infrastructure in their region, then on central government public infrastructure in their region. For the purposes of this analysis, responses to these two questions have been combined into 'public infrastructure'.

Responses are summarised in Chart B.4 and Chart B.5.



Chart B.4: Available public infrastructure capacity at peak times, both surveys



Chart B.5: Degree that existing public infrastructure facilities meet the needs and expectations of users at peak times, both surveys

Question - For the types of COMMERCIAL INFRASTRUCTURE (both publically and privately owned) that your customers currently use, could you please indicate: • the available infrastructure capacity at peak times; and

• the degree to which the infrastructure meets the needs and expectations of the user (quality), in peak times. For example, for conference facilities you may consider seating and the technological capability of facilities.

Responses are summarised in Chart B.6 and Chart B.7.

Chart B.6: Available commercial infrastructure capacity at peak times, both surveys





Chart B.7: Degree that existing commercial infrastructure facilities meet the needs and expectations of users at peak times, both surveys

Part C: Future state of infrastructure

Question - Assuming national and international visitor growth is forecast at 5% a year out to 2025, what do you expect the demand for transport infrastructure in your region to be, when compared to overall forecast visitor growth?

Note that in the Local Government survey, the 'Road transport' infrastructure category was separated into 'Road transport – local' and 'Road transport – state highway'. For the purposes of this analysis, the two categories have been combined into 'Road transport'.

Responses are summarised in Chart B.8.



Chart B.8: Future demand for transport infrastructure relative to overall forecast visitor growth, both surveys

Question - Assuming national and international visitor growth is forecast at 5% a year out to 2025, what do you expect the demand for central or local government public infrastructure in your nominated region to be, when compared to overall forecast visitor growth?

Note for the Local Government survey, this question was split into two (questions 8 and 9 of the Local Government survey). Respondents were asked to comment separately on local government public infrastructure in their region, then on central government public infrastructure in their region. For the purposes of this analysis, responses to these two questions have been combined to match the Tourism Operator question, which did not separate central and local government.

Responses are summarised in Chart B.9.



Chart B.9: Future demand for public infrastructure relative to overall forecast visitor growth, both surveys

Question - Assuming national and international visitor growth is forecast at 5% a year out to 2025, what do you expect the demand for commercial infrastructure (both publically and privately owned) in your nominated region to be, when compared to overall forecast visitor growth?

Responses are summarised in Chart B.10.

Chart B.10: Future demand for commercial infrastructure relative to overall forecast visitor growth, both surveys



Question - For any capacity issues you are aware of, what confidence do you have that these issues will be addressed by 2025? Comment on plans that you are aware of.

Note that in the Local Government survey, the 'Road transport' infrastructure category was separated into 'Road transport – local' and 'Road transport – state highway'. For the purposes of this analysis, the two categories have been combined into 'Road transport'.

Responses are summarised in Chart B.11 and Chart B.12.

Chart B.11: Confidence that capacity issues will be addressed by 2025, both surveys





Chart B.12: Confidence that capacity issues will be addressed by 2025, both surveys

Question - Are you concerned that infrastructure won't be able to support your growth? If so, what would your top three areas of concern be?

Note that in the Tourism Operator survey, respondents were asked if `Lack of ability to access public funding' was a top three area of concern, while the Local Government survey asked `Lack of alternative funding mechanisms.' Due to the different nature of these two questions, responses to these questions have not been combined in the analysis below.

Responses are summarised in Chart B.13 and Chart B.14.



Chart B.13: Roadblocks identified as top three areas of concern, both surveys

Chart B.14: Roadblocks identified as top three areas of concern, both surveys



Part D: Future state of infrastructure

Question - In summary, is the current adequacy of national tourism infrastructure worse, better or the same as 2 years ago? Please select from the options below.

Responses are summarised in Chart B.15.

Chart B.15: Current adequacy of national tourism infrastructure compared to 2 years ago, both surveys



Appendix C: Consultations

This appendix sets out the tourism infrastructure issues that were raised in consultation sessions.

Consultations formed a key part of the discovery phase for this project and were important in identifying tourism infrastructure issues which were affecting both value and volume growth in the tourism industry in New Zealand.

Issues raised in consultations supplemented issues raised in the surveys and data collected from the desktop-based research. These issues were prioritised using the prioritisation framework and considerations that were agreed with TIA and strategic industry representatives.

In total, 25 consultations were conducted with a mixture of tourism operators, local government representatives and pan industry groups. Consultees were based in a variety of regions throughout New Zealand (or operated nationally), to obtain a national view of the major infrastructure issues affecting tourism in New Zealand.

Consultees were asked questions about the key infrastructure issues to their organisation, issues with infrastructure enabling access to their organisation, issues with ancillary infrastructure, key infrastructure issues from a national perspective and key barriers that are affecting infrastructure development, among others. Consultees spoke about all the tourism infrastructure issues affecting them. As a result the issues and tourism infrastructure categories set out in this appendix may not exactly align with the infrastructure categories included in the industry surveys.

Other issues were raised from consultation sessions which have not been included in this appendix (for instance: potential barriers to implementation; potential solutions to issues; potential consequences of not addressing priority areas; and other considerations outside the scope of this report). These have been noted in the Key Findings section of this report.

The information gathered from consultations has been anonymised and captured by issue and where relevant, region. The word cloud below provides a visual representation of the consultation issues, themes and the frequency with which they were raised.

Figure C.1: key themes from the consultation process



Accommodation: general

One of the most common issues raised through consultations, and highlighted as a key challenge for the tourism industry in New Zealand, was insufficient accommodation (either in terms of volume or quality). This issue extends to multiple different accommodation options, which are set out separately below. These include: general accommodation; worker accommodation; hotel accommodation (including different levels within hotel accommodation i.e. different star levels); Airbnb accommodation; backpacker accommodation; and other accommodation options which sit outside these categories.

It was raised consistently that there is a shortage of accommodation options in New Zealand. There are accommodation deficits in many regions but the main insufficiencies (either from a quantity or quality perspective) were highlighted to be in Auckland, Wellington, Christchurch, Queenstown and Rotorua. In certain locations, accommodation shortages are more confined to peak periods (for instance in Ruapehu, where accommodation is constrained in mid-winter and some pockets of the summer season, particularly in areas which are of close proximity to the Tongariro Crossing).

Significant developments will increase visitor numbers in some areas (e.g. the new convention centre in Christchurch, the arrival of the movie museum in Wellington, the International Convention Centre in Auckland) and having sufficient accommodation was raised as being fundamental to accommodate the influx of visitor numbers in these areas. Announcements of some of these projects have resulted in new accommodation developments being declared (e.g. the convention centre in Christchurch has caused hotel developments to spring up), which may help ease accommodation shortages. However there can be long lead times between announcement of projects like these and accommodation development.

A lack of accommodation is perceived as impacting seasonal dispersal in some regions. Some respondents indicated that visitors are being forced to visit in the shoulder season due to a lack of available accommodation in the peak. Despite this, it was raised that key wholesalers are struggling to send people to New Zealand in both the peak and the shoulder season due to room shortages across these periods (e.g. in Rotorua and Queenstown).

In the accommodation sector generally, there was a perception that demand is outstripping supply which is causing prices to increase. Inbound tourism operators are finding it difficult to confirm room rates with some accommodation providers (some are finding that room rates can be more expensive than originally communicated), and wholesalers overseas are finding it challenging to sell New Zealand as a destination due to it being perceived as too expensive. Price increases are also negatively impacting the visitor experience and can create a perception that New Zealand is an expensive place a visit, which can reduce repeat visits.

Shortages in accommodation in high tourism areas are forcing visitors to stay in satellite regions and travel to these tourism hotspots for day visits as opposed to staying overnight (as is the case with Milford and Franz Josef). In some of these places, like Tekapo, neighbouring regions are lacking accommodation options themselves. Some respondents indicated this was less of an issue in Rotorua for example, where there is accommodation capacity in satellite regions like Tauranga, Taupo and Hamilton. Visitors staying in satellite regions bring benefits to those areas such as increased visitor spend, but can also cause negative flow on effects, for example increased volumes on the roads connecting to tourism hotspots. Some operators raised that visitors not being able to stay overnight in the tourism hotspot due to accommodation shortages, can limit the attractions they are able to visit (for example night time attractions), which can impact value in the industry.

There has been some industry and government response to the issue, for instance the commission of the Project Palace report, which focuses on current and future hotel demand and supply conditions. However it was raised that the analysis of hotel accommodation in New Zealand in Project Palace does not fully capture the lack of accommodation stock. The project focuses only on a limited number of areas in New Zealand and only on CBD locations. But it was raised that sufficient accommodation is also needed in the outer areas / regions, if the aim is to disperse visitors and relieve pressure on CBD infrastructure. Project Palace is also limited in that it only highlights a shortage of hotel stock, while respondents have indicated there is also shortage of other accommodation options (e.g. motels, which may be more likely to be

locally owned and provide the visitor with a more localised experience). Some respondents felt Project Palace underestimated Christchurch's growth trajectory, and that the city will need a lot more hotels than the report suggested.

Some respondents indicated there is some market response to shortages of particular accommodation options (for example, some backpackers are being turned into hotels). Others indicated that the industry is trying to take measures to deal with the shortage of accommodation more generally, for example, airlines are trying to motivate visitors to travel outside the peak and are working with major travel agents to try and smooth demand.

In relation to increasing capacity however, there are multiple issues hindering accommodation development such as land and building costs, access to suitable land and complex regulatory requirements. Some respondents have suggested offering tax incentives to increase investment in and development of accommodation in New Zealand.

Accommodation: worker accommodation

Consultations with the industry have identified access to worker accommodation as an issue for tourist operators in key centres across New Zealand. This issue has arisen out of general accommodation shortages in high demand areas, where all accommodation types are both expensive and scarce and an increasing number of traditional worker accommodation solutions are captured by visitors to the region.

There is no clear alignment across regions as to the impact of seasonality on access to worker accommodation – with some respondents stating that in areas with more than one tourist peak, such as Queenstown, the merging of peak and shoulder-peaks and the decreasing length of time between traditional winter and summer peak seasons has meant the region does not feel the same worker accommodation related pressures, as workers are able to secure more long term accommodation. This is contrasted with the views of the majority of Queenstown related respondents who raised this as an issue impacting workers, irrespective of seasonality. These respondents noted that, while seasons may be increasing in length, the nature of seasonal operations in Queenstown, such as the ski season, created issues for workers in regards to accommodation due to the large influx of workers requiring accommodation at the same time, and for the same period.

Further to this, the development in Queenstown and Auckland has meant that construction workers (for developments such as shopping malls and retirement homes) are also putting pressure on short term accommodation and creating pressure on available accommodation all year round.

Worker accommodation has been primarily raised as an urgent issue in Queenstown, however this was also raised as an issue for tourist operators in smaller areas such as Waiheke, Matakana and Hanmer Springs over the peak periods. In other areas, such as Wellington, this was noted as a potential issue that may impact the tourism industry in the short term.

This issue has resulted in workers paying unsustainable and unaffordable prices for rental accommodation in the required area or finding alternative accommodation solutions outside the region in which they work. For example, some Queenstown employees have moved to outer regions such as Wanaka and Cromwell and face longer commutes to work, transportation and car parking issues.

In the short term the issues have been partially alleviated by the availability of Airbnb accommodation, however respondents have noted that this is becoming increasingly scarce as worker numbers rise and some Airbnb accommodation solutions transition to tourist only options.

The industry is responding to this issue to a certain extent, however the difficulties in addressing accommodation issues more generally, such as capital costs, access to suitable land and development restrictions, are also impacting the development of additional work accommodation facilities. In Queenstown operators are investigating the option of a joint venture designed to provide worker accommodation facilities for multiple operators.

Accommodation: hotel

Most respondents identified that hotel infrastructure was lacking at a variety of levels. There are issues in both capacity and quality, which are set out below.

It was raised that there are significant shortages of hotel capacity, particularly in the peak season. Some respondents identified that the main issues from a hotel capacity perspective are in Auckland and Queenstown and these are significant bottlenecks to tourism in New Zealand. It was also highlighted that there is a lack of hotel accommodation in Wellington, particularly in the CBD. Other areas, such as Christchurch, have hotel capacity issues that are more limited to the peak season.

A number of respondents indicated that there was a lack of accommodation across the board (i.e. at various star ratings), but there is a perception that there is a particular lack of 4-5 star accommodation capacity in specific areas, and New Zealand is missing out on accommodating high value visitors as a result. It was raised that there is not a true international 5 star hotel in Rotorua, and Christchurch, Wellington and Auckland are lacking 4-5 star hotels. There were differing views to the most fundamental shortages of hotel accommodation in Queenstown, with some respondents identifying the main issue is a lack of 4.5-5 or 6 star accommodation, while others highlighted that there is a lack of good, affordable accommodation at a 3 or 4 star level.

Despite the hotel capacity issues above, there were some opposing views to the shortage of accommodation stock in New Zealand. For instance, there was a perception that Auckland would still have 400-700 rooms available on the busiest nights of the peak (although there was an acknowledgement that these rooms might not be of the desired standard).

Respondents raised the importance of hotel accommodation living up to the expectations that visitors will have based on its star rating. Visitors are expecting their rooms at 5 star accommodation facilities to be the same quality as what they are used to overseas. Currently 5 star accommodation in New Zealand is not meeting expectations, which might reflect a lack of quality in the hotel accommodation stock, and potential issues with how New Zealand is rating hotels. In Auckland, there are planned 4 and 5 star hotel developments which some respondents believe will deliver on quality as they are new builds.

It was highlighted that hotel accommodation quality was a major concern in particular regions. Some respondents raised that the accommodation stock in Rotorua is aging and lacking in quality. It was raised that there is a lack of investment in aging accommodation stock in Rotorua as returns are not high enough to justify investment.

A lack of hotel inventory in Queenstown and Auckland is impacting the types of visitors coming to New Zealand. For instance, hotels are struggling to cater to group visitors, especially considering group sizes are growing. Wholesalers are trying to place groups in hotel accommodation over a series of months in the peak season and with insufficient capacity in some of these months, wholesalers are unable to confirm these block bookings. Due to room shortages, hotels may prefer to take Free Independent Traveller (FIT) bookings which command a higher rate. Long lead times from international leisure tourists (such as FITs), results in a reduced ability to accommodate conference visitors (primarily domestic conferencing in Auckland but also more international 'incentive' conferencing in Queenstown).

With high occupancy rates due to limited hotel capacity, some respondents indicated the focus shifts to maximising yields by increasing prices. It was indicated that hiking room prices up can affect the visitor experience, cause a perception that New Zealand is unfairly expensive and reduce repeat visits. Rising prices is resulting in an expectation gap between what was expected in regard to the room quality (due to its price), and what is being delivered to visitors, which is negatively impacting the visitor experience. Not only do price increases impact the visitor experience, but they are also affecting New Zealand's marketability as a destination to wholesalers, who are choosing other destinations ahead of New Zealand.

Rising prices can bring benefits such as increased profitability (which encourages investment and reinvestment in accommodation stock) and a growth in value in the tourism industry. While there has been complaint about high hotel prices, they have remained lower than global averages and they may not

be considered too much of an issue if New Zealand is motivated in marketing itself as a premium tourism destination (i.e. in order to attract premium tourists, 'bargain basement tourists' may need to be discouraged through pricing). Despite these benefits, some respondents feel room rates could be approaching a point where the quality of rooms is not meeting visitor expectations.

While many respondents called for increasing hotel accommodation supply in New Zealand, there were also demand issues raised. Some respondents noted that it is important to consider demand and occupancy levels outside of peak periods (i.e. it is difficult to justify investment if occupancy levels are not high enough through the year), particularly in regions which are more seasonal (e.g. Christchurch). Related to this, is the importance of New Zealand having strategies in place to try and smooth demand throughout the year. Some respondents raised concerns with increasing supply in excess of demand, for example Christchurch hotel capacity is expected to grow significantly in the coming years and some respondents were concerned with demand growing in line with capacity, particularly in the off season (although a revitalisation of the CBD will boost domestic visitor numbers).

The issues raised in the general accommodation section (i.e. land costs, land availability, complex regulatory requirements) also apply to hotel development and investment. Some respondents raised issues with many hotel chains being owned by overseas investors, and questioned the amount of money flowing offshore, instead of being reinvested in New Zealand properties. However this is mitigated by hotel groups having brand standards to maintain, and some respondents had faith that owners will reinvest in properties to maintain a level of quality.

It was highlighted that hotel capacity shortages are having a trickle down to other accommodation options i.e. if hotels are full then motels, apartments and Airbnb options will be the same (as is the case in Queenstown for example). Some respondents highlighted that there is not much accommodation space outside of hotels.

Accommodation: Airbnb

Some respondents identified that the market will react to growing demand for accommodation i.e. there will be a growth in peer to peer accommodation options like Airbnb (for example foreign buyers purchasing properties and turning them into Airbnb properties). They highlighted that it would take pressure off the accommodation sector in New Zealand.

Others believed that Airbnb is a natural improvement to accommodation inventory levels (which requires no extra capital investment) but is not a dedicated solution to hotel accommodation shortages, for instance in Queenstown there is also a shortage of Airbnb accommodation.

Although a growth in Airbnb has improved the supply of accommodation in New Zealand, this is not always a suitable option for certain visitor types (i.e. it was raised that high value visitors and conventions centre delegates will not consider staying in Airbnb accommodation). This can act as a restraint in growing value in tourism in New Zealand.

Accommodation: backpacker

There is a lack of budget accommodation options like backpackers in particular destinations in New Zealand. Christchurch and Queenstown were identified as having a shortage of backpacker accommodation. The backpacker's business model has generally been to populate low rental cost buildings, but many of these buildings fell down during the Christchurch earthquakes. If a developer wants to build a brand new building to accommodate backpackers, the investment may not be viable (i.e. it may not be able to generate a sufficient return on investment).

In some tourism hotspots i.e. the Coromandel, West Coast, Franz Josef and Fox Glacier townships there are accommodation challenges in the peak season and there were identified challenges with backpacker accommodation in these areas.

Accommodation: other

It was raised that there was a shortage of mid-range accommodation options (i.e. in the level between backpacker and luxury accommodation options) and there is high demand for this level of accommodation from visitors, for instance in Christchurch and Queenstown.

Having other accommodation options that cater to high value visitors, was raised as being beneficial to areas that attract these types of visitors, for instance having luxury lodges in Queenstown. Although it was recognised that New Zealand has some excellent lodge accommodation options for premium visitors, there were questions raised about whether there are enough of them.

Issues raised with campgrounds are addressed in a separate section later in this appendix.

Road capacity and access

There are major concerns with road capacity on particular roads in some of the main centres. Auckland is suffering from congestion, particularly on roads connecting to the airport (e.g. from the Auckland Airport to Manukau and the CBD). There are also issues with some of the stretches of roads that provide connections to neighbouring areas, for example to Matakana, Waitakere and Piha. Some respondents noted that solving these problems will help significantly with dispersing visitors throughout the region and wider New Zealand.

In Northland, there were concerns with the road infrastructure that is utilised by visitors to the region. There is a perception from visitors to Northland that the roads are difficult to drive on and there are congestion issues on some of the major roads in the region (for instance, the highway that connects Auckland to Whangarei).

Wellington is experiencing congestion on corridors between the airport and CBD. This is not only increasing journey times for passengers travelling to and from the airport, but may also be causing a shortage in the number of taxis for passengers at the airport (as taxis are being held up in traffic when returning to the airport, after dropping passengers in the CBD).

Some respondents noted that stretches of roads that connect Rotorua to some of the major population centres (for example to South Auckland motorway) can have a large impact on the visitor experience to Rotorua (i.e. if there is congestion that increases driving times, people may be put off coming). Increasing capacity on some stretches of roads would be advantageous to the flow of visitors in and out of Rotorua (e.g. double-laning of the stretch of highway running through Mamaku), however this was not seen as a major impairment to visitor access, for some respondents. Other respondents highlighted that there are some roads which do require desperate investment, for instance a 4-lane upgrade of the eastern corridor (i.e. Te Ngae road) and once this issue has been addressed, attention will need to be placed on developing the roads that enable access from the ports to Rotorua.

Christchurch road capacity is not considered to be problematic for visitors and any issues are seen to be more pertinent to residents. The earthquake caused some issues (e.g. with road repairs), and altered traffic flows (caused by people moving out of the eastern suburbs and the city, to the northern and southwestern suburbs), which has resulted in some congestion on affected roads. There are some major road projects in place however which may help reduce congestion, for instance a widening of State Highway 1 by the Christchurch International Airport to 4 lanes.

Road capacity and access is problematic on roads out to some high demand tourist areas, for example there are high volumes on the road to the Milford area, where there is only one road in and out and a lack of available accommodation for visitors to stay overnight. The roads to Franz Josef are challenged occasionally (for example the Gates of Haast), however the level of demand means any problems are only short-lived.

Many respondents raised road capacity as a major issue in Queenstown, as a result of growing visitor numbers and a large number of tradespeople due to Queenstown developments. Road infrastructure has

not kept up with growth and congestion is causing problems for residents, visitors and operators. Some visitors are missing flights due to congestion on the roads connecting Queenstown to the Queenstown Airport and increasing travel times are negatively impacting the visitor experience (and may reduce repeat visits). Operators are having to take measures due to congestion, which are negatively impacting their operations, for instance increasing the number of buses (that service their attractions) due to delays and/or reducing the number of pick-ups due to increased journey times. Some operators are having to start their operations earlier and finish later, to service the same number of customers. Further, operators are concerned about the ability for customers to access their ticket and check in offices (for their attractions) in the downtown area.

Many respondents indicated that Queenstown needs to rethink how people are transported around the city, to try and alleviate congestion. Currently most visitors are renting cars, which is putting pressure on the road infrastructure and causing congestion. Multiple respondents identified it would be beneficial for Queenstown to shift people away from private transport methods. It was noted that there is a lack of public transport and that good and affordable public transport options would help mitigate congestion. Others suggested shifting parking to the edge of the city (in a sheltered building at an appropriate location) and pedestrianising the downtown area.

Road infrastructure

Some operators and local councils raised concerns with how road infrastructure in New Zealand is impacting visitor safety. For instance, some State Highways have one-way bridges (which are not always understood by international visitors) and are lacking barriers. It was raised that addressing road safety concerns requires a combination of educating people about driving in New Zealand and building sufficient infrastructure. Google driving times also need to be adjusted to improve visitor safety.

Although some respondents highlighted that our road infrastructure was generally sufficient, some localised issues were raised. It was raised that there are key road infrastructure issues in the Coromandel, Milford and Mackenzie Country, which are causing congestion, accidents, detriment to visitor safety and increased driving times, particularly in the peak season. In Waitomo there are issues with some of the road infrastructure, for instance there is a one lane bridge that tens of thousands of visitors use to access a popular cave attraction.

There does not only need to be investment in improving the quality of some roads, but also investment in ancillary road infrastructure such as signage, rest stops and public toilets on the roads (which were all raised as issues in Northland). Further, some respondents identified a shortage of vantage points in some locations (for instance Tekapo and Ruapehu) as crowding on these can have a negative visual impact and diminish the experience.

An identified barrier to developing road infrastructure was available funding, particularly in smaller communities, with smaller rate payer bases. Respondents raised that this infrastructure is utilised by international visitors, domestic visitors and local communities and therefore funding should not be limited to international visitor contributions only.

Parking

Access to, location and volume of carparks, for independent travellers, campervans and coaches, has been identified as a key infrastructure issue by many respondents, principally in areas such as Tongariro national park, Queenstown, Church of the Good Shepherd in Tekapo, Hot Water Beach in the Coromandel, Christchurch CBD and in central city Auckland. Operators and councils have indicated that the inability of tourists to park close to primary tourist attractions is diminishing visitor experience and may even result in tourists continuing along routes and bypassing towns, sites or attractions entirely, thereby resulting in a loss of revenue for operators or within townships, and decreasing visitor experience.

Car parking is insufficient in more remote tourist attractions, Milford and Tongariro national park, where visitors are expected to park along the national highway at peak times. This is considered both difficult for foreigners to understand and dangerous.

Coach parking has been raised as a particular issue given the increasing number of coach based group tours arriving in New Zealand. The demographic of many of these tour passengers is older, 50-80 year olds, and a lack of well-located coach parking facilities is impacting the visitor experience, particularly given the distance some tourists are expected to walk to hotels or tourist attractions.

Parking in city centres is also vital for tourist access to local restaurants, bars, business and shops. In particular, downtown Queen Street was highlighted as an area where additional parking would increase the value of tourism to the high end shops located there.

Parking is also considered to be symptomatic of a wider traffic problem, particularly in Queenstown. Lack of parking is compounded by increased traffic, congestion, lack of public transport facilities and access to alternative forms of transport, such as ferry facilities. In Queenstown, the majority of parking facilities are limited to the airport and city centre, with no real alternatives for local or tourist parking outside these areas. Despite this, there were still parking shortages identified in the downtown area in Queenstown.

Respondents from other cities, such as Wellington, have indicated that there are sufficient parking facilities for self-drivers and the layout and walkability of the city, plus access to frequent, reliable public transport, means parking is less of an issue.

Funding for and availability of appropriate land for additional carparks and clear understanding of who is required to provide parking facilities are considered key barriers to developing or implementing the infrastructure required, particularly in areas with small populations and small rate payer bases. Councils have indicated that these funding issues are impacting the receptiveness of locals to tourism and decreasing the social licence of tourism providers to operate.

Campervans and campsites

Camping facilities, both in terms of campsites and campervan facilities, have been identified by respondents as an issue, particularly with regards to access and facilities within camping grounds. Many sites have been identified as insufficient for current demand, in terms of size, and adequacy of facilities such as waste disposal, fresh water and toilets. However, it has been noted that campgrounds have become more financially viable over the last 2-3 years given the increase in tourist numbers, and, as a result, owners are more able to reinvest in facilities.

In addition to the size of existing sites, the number and location of sites is also an issue. A lack of sufficient camping sites had been identified in Queenstown and Rotorua. While some of the existing sites, such as the DOC campground at Lake Okareka in Rotorua is well managed and provides clean and adequate facilities, there are not enough of these sites to cater to existing and projected demand. Rotorua alone has indicated that at least 4 or 5 additional sites throughout the district would be well utilised.

Site selection, availability and development required significant investment and this is difficult for operators and local government to manage within city centres, particularly as the return on investment may be greater for other tourist operations such as attractions or hotel development. A potential solution is developing sites further out of town, which would reduce costs to deliver and alleviate pressure on other infrastructure areas such as city parking, if adequate transport between sites and CBD, such as public transport, was also available.

Freedom Camping

Freedom Camping has been raised as a mixed issue for respondents. Many respondents favour this as an option for tourists, while others have identified this as a key infrastructure (and social licence to operate) issue for tourism. It has been noted that a lack of adequate sites and facilities for Freedom Campers is impacting the areas tourists have come to New Zealand to visit.

A lack of camping facilities generally is seen to have a direct impact on the level of Freedom Camping that occurs across the country, with the general consensus being Freedom Campers also need a level of

services and facilities provided to increase the tourist experience and to concentrate campers in predetermined locations. Areas such as Rotorua have identified Freedom Camping as a solution to other accommodation issues, however there is not currently sufficient parking for campers that also provides access to ablution blocks, waste and rubbish disposal and fresh water.

Facilities at existing sites has been raised as an issue, along with the number and availability of sites. Local councils have indicated that they are open to providing more facilities however, there is a lack of available affordable sites to develop.

For Freedom Camping to be sustainable, environmentally, socially accepted by residents and valuable in terms of tourist experience, a greater number of sites is required that also provides access to facilities such as toilets, water and rubbish collection. Furthermore, a minimum standard of facilities across the country and directing tourists to these sites would increase the social licence within regions that currently have mixed emotions regarding Freedom Camping and increase tourist experience.

Consideration has been given to how this would best be managed, with some respondents suggesting that a user pays system is implemented to ensure an adequate level of service can be provided to Freedom Campers, without significantly impact on the rateable base of an area.

Telecommunications

Mobile coverage, data caps, central city Wi-Fi, fixed broadband access and service speeds have all been raised as potential infrastructure issues for tourists. There is no consistency in telecommunications access and this is a particular issue in remote areas identified as mobile or fixed blackspots (such as some stretches of roads in the Mackenzie Country and certain areas of the Discovery Highways running through the Northland region) and some cities (for instance, Wanaka).

Sharing tourist experiences as they occur, or as soon as possible afterward, is becoming a common component of tourist communication. However, in more remote parts of the country, access to mobile data or locally provided Wi-Fi is not adequate to facilitate this part of the tourist experience. Tourists sharing experiences with friends and family overseas is a great marketing opportunity for tourism in New Zealand that may be missed due to a lack of consistent or accessible telecommunications infrastructure.

In addition, mobile data is a key component of tourist safety, travel and planning. Given the remote nature of some of our attractions and the long distances between locations, tourists require access to mobile applications to facilitate travel, such as Google Maps for directions, or applications to confirm or organise bookings for accommodation and attractions.

Mobile and Wi-Fi access also impacts the ability of tourists to purchase an incremental activity or book an additional nights' accommodation. Respondents have noted that tourists expect a consistent level of internet access that is not being provided.

Signage

Signage covers traditional road signage (such as airport direction and petrol stations), signs for attractions and trails, signs in multiple languages and a national framework of signs to ensure consistency in recognition and comprehension, for example increased use of brown signs to denote attractions.

Given the number of different nationalities now driving, respondents consider deploying adequate signage in multiple languages to improve road safety and increase the ease of road use for visitors. These may include signs indicating spaces for potential photo stops, journey times, rest areas and road laybys, hazards and road particularities such as one way bridges and icy roads. In addition, road safety could be increased through the distribution of multilingual information packs when rental cars are collected.

Respondents have differed as to where signage is an issue, however, at least one respondent has identified signage as an issue in Northland, Wellington, Queenstown and Auckland and more broadly on roads connecting regions. Issues identified in these areas includes signage for tourists disembarking

cruise ships, signage indicating the location of car parks, pedestrian signs to key attractions, such as the cable car in Wellington and signs designating smoking areas and waste facilities.

Signage was not identified as an issue for Christchurch, where signage pyramids have been deployed to facilitate wayfinding in multiple languages.

Public transport

Public transport has been identified as a key issue for tourists in areas with limited access, such as Queenstown, and there is a lack of capacity in areas such as Auckland. In both these cities, there were issues raised with connecting visitors between the city and airport, which public transport options can play a role in improving. Some cities, like Christchurch, were identified as having public transport issues more generally (i.e. people in Christchurch are required to change between buses multiple times to reach their destination), while in other areas, like Rotorua, the public transport issues relate more to servicing particular parts of the region (i.e. there is a lack of public transport options to transport tourists out to the lakes in Rotorua). Similarly in Auckland, there were isolated public transport issues identified, such as the pressure on certain ferry terminals on the outer islands (e.g. Matiatia).

A lack of public transport options may be causing negative flow on effects in some areas. In Queenstown, it was raised that visitors are renting cars as the city lacks an affordable (as the public transport system is privately operated and is not subsidised), accessible and reliable public transport offering, which is resulting in increased travel times, a lack of parking options and damaging the visitor experience.

Certain areas have transport projects underway which may mitigate public transport deficiencies, for example, the City Rail Link project in Auckland may address some of the transport issues Auckland is currently experiencing. Regardless, public transport was raised as an important consideration, particularly given that many visitors are coming from destinations where public transport is commonplace (and may prefer to use it as opposed to being forced into utilising private transport options).

Opportunities exist to provide public transport options in certain areas, which could double as a tourist experience. For instance, the lake in Queenstown was identified as an area which could be utilised to provide a sustainable public transport option, which might also enhance the visitor experience. In addition, there was a raised suggestion of a gondola to connect the Queenstown Airport to the city, which might double as a tourist attraction and may be cheaper than constructing a 4 lane highway.

Coaches

Coach infrastructure includes coaches, coach handling facilities and coach parking. It was raised that coach and group touring has risen back to popularity (following a fall after the Global Financial Crisis) and New Zealand is struggling to build coaches fast enough, particularly coaches large enough to accommodate larger tour groups sizes. Even if coaches are built, it is important to have the infrastructure in place to support them (for example, sufficient coach parking).

Respondents have indicated that coach operators are raising parking as a primary issue. A lack of coach parking for hotels, conferences and cruises in Auckland was identified as a significant issue, in addition to a lack of coach handling facilities. Other respondents raised issues with coach parking in Rotorua and Christchurch, whereas it was identified as less of an issue in Queenstown.

A lack of coach parking in the city centre may put pressure on other transport infrastructure. Visitors requiring access to the city centre may have to be dropped in the outer city areas and will have to utilise other transport options to travel into the CBD.

Cruise within New Zealand

It was raised that there is a growing cruise market within New Zealand (i.e. cruise tours operating domestically) and some operators are having to add additional boats to cater for an increase in demand. Increased demand is putting pressure on some of the supporting cruise infrastructure and there are

issues with terminal space capacity and the number of berths in Milford, in addition to a shortage of parking options for visitors and coaches.

Cruise to New Zealand

There were concerns raised in consultations with the standard of cruise ship ports in New Zealand. The port gateways utilised by cruise visitors in some of New Zealand's main centres are seen to be lacking in quality (when compared with our international airport gateways) and there may be potential quick fixes to these gateways - that require little expenditure – which can make cruise visitor arrivals more memorable and improve the visitor experience.

In Wellington, it was highlighted that cruise terminal facilities are deficient and there were issues raised with the infrastructure which supports access from the terminal to the CBD (for example, a shortage of transit buses). Access to and from the terminal was identified as a key consideration, as the older cruise demographic is generally less mobile. Ease of access for cruise visitors to the CBD is important to the visitor experience and can also result in an increase in visitor spend (i.e. by facilitating access to shops in the CBD).

There are capacity concerns with cruise infrastructure in Christchurch, in particular the size of the wharf at Lyttleton Port is placing a limit on the size of the cruise ships that can visit (and cruise ships are currently going to Akaroa instead). While it was raised that the business case for developing the Lyttleton port itself may not be excellent, the flow on benefit to tourism value and volume in Christchurch could be significant.

In Northland, there are a lack of wharfs in the Bay of Islands to accommodate cruise visitors. Currently visitors are being delivered from cruise ships in the Bay of Islands by tender to Russell and Paihia, which can negatively impact the visitor experience.

Auckland was also highlighted as having cruise infrastructure capacity issues for hosting larger cruise ships. This can impact the volume of cruise visitors (and value these visitors bring) but also means that Auckland is missing out on significant amounts of money that can be made from re-provisioning / restocking these cruise ships. While there is talk of a 'mooring dolphin' on Queen's Wharf (which will provide a mooring point for larger ships), it was raised that in time, Auckland will require a wharf large enough to accommodate bigger cruise ships.

Some respondents identified the importance of having sufficient cruise infrastructure in Auckland, considering the port in Auckland acts a feeder to other ports around New Zealand (which can enhance regional dispersal and transport visitors into smaller areas) and it is an important exchange point for cruise visitors. Therefore, the infrastructure facilitating access from the Auckland port to the airport is also important to help disperse visitors around the country.

Respondents raised general benefits that cruises can bring to tourism value and volume in New Zealand. For example, it was raised that around 30% of first time cruise visitors to New Zealand will return to the country, which will assist value and volume growth in the tourism industry. Another benefit raised was that cruise lines themselves are marketing New Zealand, and therefore it is a low cost option for promoting tourism to New Zealand that can provide good returns for the industry.

While many respondents raised benefits with cruise tourism, others noted negative impacts that cruise tourism can have on the tourism industry in New Zealand. For instance, it was highlighted that cruise operators engage directly with tourism operators in New Zealand and on-sell attractions to their passengers for a large mark-up, which can negatively impact the visitor experience (as passengers may feel they end up paying too much for the experiences they receive).

Airport connectivity

Airport connectivity was raised as being critical to the tourism industry in New Zealand. It was noted that New Zealand requires excellent domestic connectivity between areas such as Auckland, Rotorua, Queenstown and Christchurch to allow visitors to reach all parts of the country.

It was raised consistently that there is substandard airport connectivity in Rotorua. For instance, some visitors that have travelled from Auckland to Rotorua are having to travel back up to Auckland to connect to the South Island, due to a lack of South Island connections from Rotorua. There were identified limitations with airport connectivity between Rotorua and Queenstown (particularly in peak periods) and as a result, visitors are having to take up more lengthy transport options (for example, busing to, and flying from other airports, such as Auckland Airport) or in the alternative, purchase an expensive direct flight from Rotorua.

Domestic airport connectivity in Christchurch was identified as being strong. There has been an increased number of seats from Auckland to Christchurch (which is in line with the strategy of Auckland being a hub to feed other parts of New Zealand, but has increased visitor bottlenecking in Auckland). It was raised that Christchurch could benefit from increased domestic flight competition, which may lower prices, stimulate visits to other regions and improve regional dispersal.

In relation to international connectivity, it was raised that there are only two long-haul airports (in Christchurch and Auckland) and pressure on these will be exacerbated in the peak season. It was noted that a significant amount of international visitors are arriving via Auckland and improving international connectivity to Christchurch (which has the capacity to handle more international arrivals) may help ease airport congestion issues in Auckland.

International connectivity considerations were raised for Wellington Airport. There were two perspectives in regard to Wellington's international connectivity: having more direct long-haul flights in and out of Wellington, or having more domestic connections (e.g. with Auckland or Christchurch) and/or trans-Tasman connections (e.g. with Melbourne or Sydney) to improve Wellington's connectivity with other parts of the world. It was raised that from a national tourism infrastructure perspective, Wellington's runway length is a constraint, as demand exists from international airlines to fly to other places in New Zealand outside of Auckland and Christchurch. Benefits with improving Wellington's international connectivity included smoothing visitor numbers from other places in New Zealand such as Auckland and Queenstown (and therefore less investment in infrastructure may be required in these areas) and promoting growth in the neighbouring regions to Wellington (for instance, the Wairarapa, Palmerston North, Nelson, Abel Tasman and Marlborough). Further, it was raised that landing in the middle point of New Zealand (i.e. in Wellington) may be logical considering international visitors typically visit New Zealand as a whole. Regardless it was raised that there are questions that need to be considered when determining the benefits of extending the runway, including whether the frequency of flights will be sufficient, whether flights will be connecting to desired locations, whether Wellington has a large enough population to support long-haul flights and how an increased number of international of flights will affect flight prices.

While New Zealand's overall connectivity with China has improved (due to a rise in the number of flights from China), it was acknowledged that this improved connectivity has partly been triggered from low fuel prices, and these connections may no longer be viable should fuel prices increase.

Airline capacity

The current level of airline capacity in New Zealand was raised as a non-issue and some respondents noted that there is excess international airline capacity to New Zealand as a result of both efficient airlines, low fuel prices and marketing efforts from some of New Zealand's major airports and airlines. With increased international connectivity (from airlines such as United Airlines, Emirates and other Asian carriers), it was raised that New Zealand currently has the most airline capacity it has ever had. While it was acknowledged that New Zealand might have excess airline capacity to particular international destinations, price decreases for flights in and out of New Zealand are helping drive demand and fill seats. Larger planes have increased the airline capacity for domestic travel, however a lack of domestic airline capacity was highlighted for flights between Rotorua and Queenstown. It was raised that a jet service between Rotorua and Queenstown is needed, which would have sufficient seat capacity to transport tour groups (particularly as tour group sizes have grown and are averaging 50 people).

Airport infrastructure

There were mixed views as to the adequacy and state of New Zealand's airport infrastructure. While it was identified that New Zealand has a large number of airports (twenty seven) compared to our population size, there were concerns raised with the sufficiency of infrastructure at particular airports, which can impact the visitor experience. At Wellington Airport, there is pressure on terminal capacity (at peak times) and stand capacity which has meant the Airport has had to increase the level of remote stands (i.e. bus services for passengers to embark and disembark planes). At Auckland Airport, the quantity of arrivals are putting pressure on the infrastructure, which is resulting in long wait times at biosecurity checkpoints, and is causing visitors having to utilise a bus service to embark/disembark airplanes (as airplane arrivals are outweighing the number of gates available). There was confidence however, that these airports will respond to infrastructure issues as they are managed by existing plans and committed capital.

Other airports were identified as not having particular infrastructure issues. Despite Christchurch receiving record visitor arrivals, the airport infrastructure was highlighted as being adequate to accommodate them (it was noted that the airport was built for two million more visitors than are currently arriving). In Queenstown, there was an acknowledgment that Queenstown Airport will need additional land and infrastructure to grow and accommodate increasing visitor numbers in the future, but there was confidence that this issue would be addressed as a result of the Airport's long term strategic planning.

Port facilities

The number of port facilities in New Zealand was identified as an infrastructure issue; not a lack thereof, but rather the number of ports is resulting in an unsustainable competitive environment (e.g. the Port of Timaru is competing with the Port of Lyttleton which was considered unsustainable).

Rubbish

Issues with rubbish infrastructure were raised consistently in consultations. There was an identified shortage of rubbish bins at certain iconic tourist locations (for example, the Tongariro Crossing, Tekapo and the Fox and Franz Josef Glacier townships), in particular cities (in Auckland generally and a shortage for campervans in Queenstown) and in areas with smaller population bases (which have small rate payer bases to fund the provision of rubbish bins).

Shortages of rubbish bins can negatively impact the tourism industry in New Zealand. A build-up of discarded rubbish - due to a lack of facilities - at New Zealand's iconic natural attractions can diminish the visitor experience, and can put people off New Zealand as a destination (which can be even more detrimental to the tourism industry if communicated to other potential visitors). Rubbish build up can also negatively impact the public's perception of tourism in New Zealand (for example if there is a build-up of rubbish at natural attractions highly utilised by tourists). As a consequence, it was raised that a lot of value can be captured by addressing smaller infrastructure issues, such as a shortage of rubbish bins.

Water treatment and sewerage

Water treatment infrastructure is seen as deficient in some iconic tourism locations such as Cathedral Cove, Franz Josef and some islands off the coast of Auckland (e.g. Rangitoto Island and isolated areas on Waiheke Island). Other issues were raised in relation to the ownership models of this infrastructure, for instance the privately owned water and sewerage system in Waitomo, which has difficulties in obtaining investment from local government. While other areas were identified as having no issues with this infrastructure (e.g. Wellington, Rotorua and Queenstown), some respondents were concerned about the impact that growing visitor numbers will have of sewerage treatment infrastructure and wastewater management (for instance in Ruapehu, where growing summer visitor numbers may be putting strain on these systems), and consequently the environment. This calls for government planning against the extra pressure visitors may put on sewerage treatment systems and in some areas it was raised that there are were already planned upgrades to water treatment infrastructure (e.g. in Rotorua).

Water access

There were raised issues with water access on some of the islands located in the Hauraki Gulf. On some island locations (e.g. Rangitoto Island generally and Matiatia on Waiheke Island) and some of the smaller towns located in the Far North of the Northland region, there were identified deficiencies in the water supply, in addition to the problems about dealing with waste water outlined above.

Having access to fresh drinkable water is important for the visitor experience. For instance, it was raised that visitors (and residents) expect clean drinking water around the forest and lakes in Rotorua, and a lack thereof may be detrimental to their time spent in New Zealand.

Public toilets

A shortage of public toilets nationally was raised various times throughout consultations, as well as isolated issues in particular regions. In Queenstown and Auckland (including island locations such as Rangitoto and Matiatia on Waiheke Island), it was raised that there are not enough public toilets generally and in Northland, there are high driving distances between public toilets which are not obviously located and are seen as lacking quality. In Rotorua, there was an identified lack of adequate numbers of public toilets in the forest (which if left unaddressed, might lead to a degradation of the estate), while other parts of Rotorua have adequate public toilet facilities that are generally well serviced (e.g. the lakes district, boat ramps and mountain bike park). There were also issues raised with ancillary infrastructure, including public toilets, in smaller population areas with high visitor volumes such as Tekapo, Whakapapa and the Fox and Franz Josef Glacier townships.

Shortages and inadequacies in public toilet facilities may negatively impact the visitor experience and social impacts can be large if visitors are having to defecate elsewhere for lack of public toilet facilities.

While specific future plans at a local government level may be looking to address deficiencies in the level of public toilets, there might be national solutions to address such issues (e.g. local councils engaging with a central government body to develop a kitset toilet design, which could be rolled out nationally).

Attractions

In many locations, respondents highlighted an insufficiency in the number and/or the quality of existing attractions that are either visitor specific or utilised more equally by a combination of local residents and visitors.

Christchurch has lost some of its premier attractions as a result of the earthquake, for instance AMI stadium, the convention centre and more generally the CBD, which has meant there may be little to attract visitors to the city in the off season. There was an identified lack of not only visitor specific activities, but also a shortage of bars and restaurants in the central city area, and respondents noted that there needs to be more to do in the central city to keep visitors in Christchurch beyond a day (which may improve the visitor spend in the city). While there are hotel developments underway in Christchurch, attractions may be necessary to increase the utilisation of hotel rooms as hotel capacity increases.

In Rotorua, it was raised that there are issues with some of the main attractions in the region. For instance, there are capacity issues at Rotorua's Agrodome attraction in certain periods that have high visitor volumes (i.e. the Chinese New Year). Despite there being capacity issues with certain attractions, it was raised that rather than increasing capacity, operators may be motivated to instead shift to

providing higher value experiences for an increased price, which could smooth demand while still adding value in the industry.

There was an identified lack of commissionable tourism products in Wellington, to stimulate growth in the region and value growth in tourism industry generally. While there are plentiful free attractions in Wellington, there is a shortage in attractions that visitors pay for. There are some initiatives in place that will address this issue (for instance the planned film museum which will be a commissionable product), but more may be required.

There are some developments in place that may solve issues with a lack of attractions in certain locations. Christchurch has developed a mountain biking park, which is set to operate year round (unlike Queenstown mountain biking operations which can be restricted by snow), and may help drive visitation in the off season. Furthermore, Christchurch has proposals for a large water sports park for rowing/kayaking, which may bring domestic and international visitors to the city (for example, for competitions).

Convention Centre

It was raised that additional convention centre infrastructure is required in certain locations. Wellington was identified as a strong convention destination, but the city requires a purpose built convention centre facility that can cater to larger conferences. In Queenstown, the convention centre planned for the downtown area was seen as being an integral part of the tourism offering and planned convention centre developments in Christchurch and Auckland were also identified as important initiatives that will boost visitor numbers and necessitate the development of additional supporting infrastructure (such as hotel capacity).

General issues

The section below sets out some general issues that were raised in the consultations, however have been outlined in this section due to sitting slightly outside the infrastructure categories outlined above and the issues identified elsewhere in this report.

Transport times

Some respondents outlined issues with transport times, which may be attributable to particular pieces of infrastructure. For instance, transport times were raised as an issue for workers in terms of both cost and time in Auckland.

Infrastructure for staff

In addition to the issues with worker accommodation set out above, there were problems with other infrastructure for workers in Auckland, including transport and car parking.

Power supply

On some of the islands in the Hauraki Gulf (e.g. Rangitoto, Waiheke), there were identified issues with power supply (in addition to issues with water treatment and sewerage, water access and public toilets at these locations, outlined above).

Temporary demand issues

Large events may result in a large influx of visitors to particular locations, and consequently put strain on the infrastructure and staff in that area. When events coincide, visitor numbers can reach tremendous levels (for instance, if Chinese New Year were to coincide with people flying in for a cruise and people attending a conference in Auckland). This can have negative safety implications, for example if there is excess demand for coach drivers having to cater to multiple events, and there are problems with scheduling or delays, this may result in drivers being unable to have their mandatory stand-down periods.

Other demand issues

In some regions, one of the major issues is trying to handle concentrations of visitors, both in terms of the period they are visiting in and the places they are visiting. For instance it was raised that in

Northland, the majority of visitors are confined to a relatively narrow peak, and are primarily concentrated in certain locations in the region, such as the Bay of Islands.

Creating infrastructure to drive value

It was raised that it may be beneficial to focus on creating infrastructure in a way that will improve value, rather than just increasing capacity. An example raised was rather than just building more standalone public toilets (and potentially implementing a user pays system for those toilets), it may be more beneficial to build tourist attractions that have public toilets included (which may be a more effective way to improve value in the industry, while still addressing an infrastructure gap). There may also be opportunities to create infrastructure that becomes a tourist attraction in itself, for instance building themed restrooms which operate on a user pays system.

Regional dispersal and infrastructure

Regional dispersal may be important for promoting growth to regions outside of the main tourism hot spots and relieving the pressure on infrastructure from high visitor volumes in such locations. There is an opportunity to spread visitors around the country more, rather than building a lot of infrastructure in already tourism heavy locations, which can compromise the product of such locations (for example building a large number of hotels in a region might make it a less attractive destination).

While there are benefits to regional dispersal, it can also result in problems and may be undesirable to local residents in some of these regions (i.e. they may value the region's isolation). As a result, there were questions raised about regional dispersal and instead, there are other benefits to concentrating visitors to specific areas.

Regardless, regional dispersal may require infrastructure in the regions, to handle increased visitor numbers. However there was a raised issue that regions which do not have adequate infrastructure may find it more challenging to attract visitors, but regions which are not attracting visitors may have difficulty in enticing infrastructure investment.

Taxis

It was raised that taxi stands are an issue for visitors in Auckland and taxi stands may be challenging to locate, particularly for visitors who are unfamiliar with the area. Auckland may require additional taxi stands and visitors may need to be pointed to the locations of these.

Rental cars

Some respondents raised issues with the provision of rental cars. In peak periods, it was raised there can be shortages with the number rental cars in Christchurch, which may impact the South Island as a whole, considering 80% of the South Island fleet (which includes motorhomes) are based in Christchurch. Shortages in rental cars was echoed for Queenstown, however it was raised that there have been efforts by the Queenstown Airport to moderate the number of rental cars on the roads in Queenstown (for the purpose of mitigating congestion), by restricting the number of spaces available for rental cars at the airport.

Cycleways

There was a highlighted importance in support and maintaining the cycleway in Auckland, and ensuring that it is both an easy and safe commuting option.

Issues on public conservation lands

Congestion on some of the popular walks on public conservations lands (e.g. the Tongariro Crossing, the Milford Track and the Routeburn Track) may mean that these walks are not meeting the expectations of visitors (i.e. if visitors are expecting isolation and are experiencing crowding).

There were identified shortages of facilities and infrastructure on public conservation lands in certain locations. It was raised that in Rotorua there is a shortage of eco toilets on some of the walkways located on conservation lands in the region, and in Whakapapa the limited number of public toilets and hotels are being put under pressure.

Changes in the visitor mix having implications on infrastructure and growth in the regions The FIT travel sector is growing faster than the structured, tour-group travel sector, which will potentially put pressure on roading infrastructure and may have safety implications. Growth in the independent travel sector may also having visitor growth implications in certain regions, for instance it was raised that Chinese visitors in Queenstown are growing as a result of a growth in the number of FITs.

Ferry

The ferry system that links the North and South Islands across the Cook Strait was recognised as an important piece of infrastructure for tourism. While the system is operational, it was perceived as not being 'first class' as result of prior issues (for instance, the propeller falling off the Interislander's Aratere ferry) and there was an underlying worry about the quality of the existing fleet.

Geothermal infrastructure

Geothermal energy (and the related attractions and supporting infrastructure) was highlighted as an important piece of the tourism offering in Rotorua. It was raised that Rotorua could do a lot more with their geothermal spa and energy resources, however there are some initiatives already in place, for instance the regions spa and destination hot springs plan and the development of a World Spa (an international spa and wellness complex on Rotorua's lakefront). There was a sentiment that it is critical for Rotorua to protect the regions' geothermal resources (i.e. keeping the geysers going and not 'bleeding' the field).

Restaurants and bars

Some respondents were concerned with the capacity of restaurants and bars in certain areas and for certain visitor demographics. In Auckland, there may be issues with restaurant and bar capacity for conference visitors (however it was acknowledged that most conference delegates would likely eat inhouse). It was recognised that there may be a shortage of bars and restaurants in the CBD in Christchurch (as a result of high rent prices), but there was a belief that the private sector will respond to any shortages or increases in demand (for example more restaurants and bars may spring up in the city centre once the convention centre is built). There was a recognised importance of having restaurants and bars to revitalise the CBD in Christchurch, as they can serve as a catalyst for the development of hotels, events and attractions, which may help with seasonality issues (i.e. as there will be things to do year round).

Regardless, it was acknowledged that these pieces of infrastructure are important to the tourism industry as they may promote greater visitor spend and value growth. Restaurants can also have a large impact on the visitor experience, for example the development of 'Eat Street' in Rotorua was seen as having made a fundamental difference to how visitors perceive the Rotorua city area.

Appendix D: Data sources

This appendix outlines the data sources that were explored as part of the exercise to measure the infrastructure use and constraints across regions for each infrastructure type. A range of publically available data was collected and analysed, relating to each of the following 11 infrastructure categories.

- Conference facilities
- Car parking
- Cruise facilities
- Public transport
- Road transport
- Visitor accommodation
- Worker accommodation
- Water and sewerage systems
- Freedom camping
- Facilities on public conservation lands
- Public toilets

Further data related to the following eight infrastructure types was sought from a number of sources. However, the available data was either unavailable, or unsuitable for the analysis being undertaken, and the survey data was used.

- Telecommunications
- Recreation and sporting facilities
- Tourism attractions and activities
- Urban public spaces
- Airports and related facilities
- Air connectivity (international and domestic)
- Cafes, restaurants and bars
- Event and stadium facilities

Data snapshot: Conference facilities

Data source: Convention Activity Survey (CAS)

Data publisher: Ministry of Business Innovation and Employment

Link: <u>http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/other-research-and-reports/convention-research-programme/convention-activity-survey</u>

Data description: The Convention Activity Survey (CAS) is funded by the Ministry of Business Innovation and Employment in partnership with 13 convention Bureaux in New Zealand (Auckland, Hamilton and Waikato, Bay of Plenty, Rotorua, Hawke's Bay, Taupo, Manawatu, Wellington, Marlborough, Nelson, Christchurch and Caterbury, Dunedin and Queenstown).

The data provides quarterly information on the number of delegates per 10 regions and the composition of the origin of the delegates (local, domestic, Australian or International). The data also includes a count of the number of events that occurred including the information about delegate days, the type of event and the size (number of delegates attended) per particular types of conference events.

Data checklist

The below table assesses the data quality of the Convention Activity Survey along four dimensions. The dataset is considered as robust due to its completeness and granularity, and has been used in this report.

Table D.1: Data snapshot – Conference facilities

Metric	Comment	Benchmark/Target

Time frame	Quarterly data, 2009 - 2016	Ideally, monthly data presented as time series
Granularity	10 regions (Auckland, Christchurch / Canterbury, Dunedin, Hawkes Bay, Manawatu, Nelson, Queenstown, Rotorua, Taupo and Wellington)	Region/TLA level data or smaller (e.g. unit record)
Completeness	The CAS monitors and benchmarks the performance of more than 300 professional conferencing and meeting venues in New Zealand.	Ideally, data source covers 100% of the all relevant entities for that infrastructure type, and whether it is compiled by a trusted source.
Fit for purpose	The metrics measured by the CAS are directly relevant to inform supply and demand of convention facilities. Our analysis has leveraged in particular the delegate data to generate occupancy and growth information for particular sized conference events.	Whether data directly informs supply/demand of infrastructure type in question. Whether metrics used are commonly accepted, or whether these relationships are derived unilaterally.

Data was collected from the Convention Activity Survey (link above) to provide a view by region of the frequency of conference events, the number of delegates who attended each event as well as any seasonal impacts on the demand for conference facilities.

To ascertain the growth in demand for conference facilities, the events data was segmented as per the following parameters:

Events with 10 - 30 delegates

Events with 31 - 60 delegates

Events with 61 – 100 delegates

Events with 101 - 200 delegates

Events with 201+ delegates

An occupancy metric was calculated by dividing the total delegates recorded for a quarter, comprising Local, Domestic and International delegates, by the Total Delegate Capacity for each particular region.

The CAS data was then overlaid with the Net Issue Scores and rankings generated from our survey, with the aim of identifying any existing relationships between a high issue score/ ranking and the corresponding region experiencing high demand or large growth in demand.

Other datasets identified but not used

The CAS was assessed as a complete and relevant data source for this study's purposes, and other avenues were not pursued.

Data snapshot: Car parking

Data source: Survey, GIS of OpenStreetMaps

Data publisher: OpenStreetMaps

Link: http://download.geofabrik.de/

Data description: Data was gathered via GIS software from OpenStreetMaps. The data provides a count of the number of carparks by TLA regions in New Zealand.

Data checklist

The below table assesses the quality of the car parks along four dimensions. The dataset is considered weak due to its assumed incompleteness relating to the capacity of car parks and uncertainty as to whether underground or undercover car parks have been excluded. As such, survey data was used to inform the constraint analysis.

Table D.2: Data snapshot - Car parking

Metric	Comment	Benchmark/Target
Time frame	Observations inputted on a voluntary basis by users. Likely limited consistency with timings for unit record.	Ideally, monthly data presented as time series
Granularity	TLA level	Region/TLA level data or smaller (e.g. unit record)
Completeness	The data is most likely incomplete. It does not provide information as to the capacity (size) of the carpark. We are also unsure as to whether the data includes undercover carparks. Limited verification done on the accuracy of user-inputted information.	Ideally, data source covers 100% of the all relevant entities for that infrastructure type, and whether it is compiled by a trusted source.
Fit for purpose	We believe the survey data is more likely to be more robust and reliable for analysis then the OpenStreetMaps data.	Whether data directly informs supply/demand of infrastructure type in question. Whether metrics used are commonly accepted, or whether these relationships are derived unilaterally.

Data transformations

All structures flagged as "carpark" were extracted from OpenStreetMaps across New Zealand. These unit records were then assigned to the region/TLA within which they reside; providing a count of carparks across the geographies of interest.

This data was plotted by TLA and overlaid against the Net Issue Scores generated from the survey data. In some instances, data was scaled by the Effective Population data within TLAs to provide a per capita view of infrastructure capacity constraints.

Initial analysis indicated that the data sets were both incomplete and missing key information such as carpark capacity and as such a view of car park constraints is primarily informed by the survey data.

Other datasets identified but not used

The data discovery phase investigating car parks yielded the following alternative data sources, which had their own limitations and were therefore unsuitable for this study.

- Limited council-specific information on the location and scale of car parks was available, but not complete for the whole of New Zealand. For example, Auckland City Council maintains records of all free and paid council car parking across Auckland City
 (<u>https://data.govt.nz/datasetrequest/show/235</u>). We are not aware of a source that provides the same data across New Zealand.
- A database of car parks is noted to be available per the TDB <u>http://www.tdbonline.org/</u>. Access
 to this database was sought, with no success, noting that data is generally only made available to
 relevant members.

Data snapshot: Cruise facilities

Data source: Cruise New Zealand, Ship Scheduling 2012, 2013, 2014, 2015 and 2016

Data publisher: Cruise New Zealand

Link: http://cruisenewzealand.org.nz/schedule/

Data description:

The Cruise New Zealand scheduling data provides the scheduled number of port calls by ship per each individual New Zealand port for a given year.

Further information was retrieved from the Cruise New Zealand website pertaining to the ship's passenger capacity as well as the physical dimensions of each ship. This information was subsequently overlaid with the scheduling data to provide an estimate of cruise passenger supply for each port in a given year.

Data was manually collected from the website and was then cleansed and formatted to allow for analysis.

Data checklist

The below table assesses the data quality of cruise schedulingalong four dimensions. The dataset is considered as robust due to its completeness and granularity, and has been used in this report.

Metric	Comment	Benchmark/Target
Time frame	Daily data, 2012 - 2016	Ideally, monthly data presented as time series
Granularity	By port and ship	Port and ship
Completeness	The scheduling data is maintained by Cruise New Zealand and appears to be complete for all years with the exception of 2012 (excluded from analysis). It is assumed that the scheduling data is a forecast and may not represent actual port calls, due to late cancelations or other amendments post the scheduling data was recorded.	Ideally, data source covers 100% of the all relevant entities for that infrastructure type, and whether it is compiled by a trusted source.
Fit for purpose	The data recorded by Cruise New Zealand appears to be appropriate in our analysis for estimating changes to port calls (passenger supply) over a number of years.	Whether data directly informs supply/demand of infrastructure type in question. Whether metrics used are commonly accepted, or whether these relationships are derived unilaterally.

Table D.3: Data snapshot – Cruise facilities

The raw scheduling data was extracted from the Cruise New Zealand website, this information incorporated detail as to every ship docking each day at each New Zealand port. Specific cruise ship information was also extracted from the Cruise New Zealand website. This data provided detail as to each individual ship's passenger capacity and physical dimensions.

The Cruise ship information was then overlaid against the scheduling data to calculate the number of port calls and passenger capacity at each port between 2012-2016. For the purpose of our analysis, the 2012 data was excluded as it was incomplete, only covering October onwards.

Size categories (small, medium, large and very large) were then applied to each individual port call based on the particular ship's passenger capacity and physical size. For our ports growth analysis, the following parameters were used to bracket each of the ship size segments:

Small – Passenger capacity of less than 850 people

Medium – Passenger capacity of between 850 and 2000 people

Large - Passenger capacity of between 2000 and 3000 people

Very Large – Passenger capacity of greater than 3000 people

The growth/decline of each ship size segment at each port was then analysed.

Other datasets identified but not used

During the data discovery phase, desktop research was conducted to investigate factors that may have impacted the Cruise Tourism industry over the past five years. The most notable of factors was the 2011 Christchurch earthquakes which had a significant impact in directing large volumes of cruise ships and passengers away from the severely damaged Lyttelton Port to other South Island ports including Akaroa and Dunedin.

Another common theme which has drawn much media attention, is the growth in the size of cruise ships which are visiting New Zealand and the current insufficient port infrastructure required to accommodate the larger vessels. A recent statement from Cruise New Zealand has highlighted that major cruise ship operator, P&O Cruises Australia, has decided to delay plans to build a 4,200 capacity passenger ship and bring it to New Zealand, citing a lack of infrastructure progress necessary to currently accommodate a ship of that size. To date, larger ships visiting New Zealand have had to rely on tenders to ferry passengers to shore, a method which is noted to be inferior to the ability to dock directly.

One consultee notes that delays and slow progress in decision making relating to port expansions are primarily related to the Auckland Port and the Lyttelton Port in Christchurch which was damaged in the 2011 Earthquake. The Lyttelton Port of Christchurch (LPC) have often stated that rebuilding a cruise specific terminal requires partnership with tourism and cruise ship industries, Christchurch City Council and the Government to enable a commercially viable outcome.

Data snapshot: Public transport

Data source: Survey, GIS of OpenStreetMaps (OSM)

Data publisher: OpenStreetMaps

Link: n/a

Data description:

Data was gathered via GIS software of OpenStreetMaps. The data provides a count of the number of bus stations, bus stops, ferry terminals, train halts and train stations by TLA regions in New Zealand.

Data checklist

The below table assesses the quality of the public transport along four dimensions. The dataset is considered as weak due to its assumed incompleteness of certain transport infrastructure results at particular TLAs, and therefore survey data was used in this report.

Table D.4: Data snapshot - Public transport

Metric	Comment	Benchmark/Target
Time frame	As per the date when the OpenStreetMaps data was collected.	Ideally, comprehensive data provided by a reputable organisation
Granularity	Unit record data, aggregated upwards to region and TLA level.	Region/TLA level data or smaller (e.g. unit record)
Completeness	It appears that the data is not complete in its entirety. We have observed considerably low volumes of certain transport infrastructure results in certain TLAs.	Ideally, data source covers 100% of the all relevant entities for that infrastructure type, and whether it is compiled by a trusted source.
Fit for purpose	We believe the survey data is more likely to be more robust and reliable for analysis then the OpenStreetMaps data.	Whether data directly informs supply/demand of infrastructure type in question. Whether metrics used are commonly accepted, or whether these relationships are derived unilaterally.

Data transformations

Data was collected using a GIS tool to extract the most recent Public Transport Infrastructure from OpenStreetMaps. Public Transport perceptions data was also gathered from the Ministry of Transport website (link below).

This data was plotted by TLA and overlaid against the Net Issue Scores generated from the survey data. In some instances, data was scaled by the Effective Population data within TLAs to provide a per capita view of infrastructure capacity constraints.

Initial analysis indicated that the data sets were either incomplete or outdated and as such public transport infrastructure constraints were primarily informed by the survey data.

Other datasets identified but not used

The data discovery phase investigating public transport yielded the following data sources, which were not pursued given the robustness of the source data.

- Access and perceptions of transport data, Ministry of Transport
 - Travel perceptions for bus AM012
 - Travel perceptions for train AM013
 - Travel perceptions for ferry AM014

http://www.transport.govt.nz/ourwork/tmif/accesstothetransportsystem/

This data was not used in the final analysis as it is outdated (2007-2012) and captures limited regions/ TLAs. In some instances data was only for Auckland and Wellington.

Other avenues were also pursued, such as LGNZ for data which may be held at Council level. While some councils maintain a detailed database of public transport capacity/issues (for example Auckland), this information is not available across New Zealand.

Data snapshot: Road transport

Data source: Survey, Road Network Performance Tool, Works Completed – Bridges and Road Condition

Data publisher: New Zealand Transport Agency

Link: <u>http://www.nzta.govt.nz/planning-and-investment/planning/transport-data/all-available-data-tools/</u>

Data description:

The Road Network Performance Tool provides information on works completed, used and costs for local roads and State Highways at both the national and regional level.

It provides annual data of demand – Vehicles Kilometres Travelled (VkT) by heavy/ light vehicles across state, local, urbal and rural roads.

The analysis also incorporated Smooth Travel Exposure (STE) from the Road Condition Data, which was identified as a potential indicator of road quality and recent bridge builds from the Works Completed Data.

Data checklist

The below table assesses the data quality of the roads data along four dimensions.

Table D.5: Data snapshot – Road networks

Metric	Comment	Benchmark/Target
Time frame	Annual data, 2007 - 2016	Ideally, annual data presented as time series
Granularity	Region, TLA	Region/TLA level data or smaller (e.g. unit record)
Completeness	The Transport Agency collects transport data from investment partners as well as a range of government and non- government sources. It appears that the dataset is complete for demand analysis, however does not provide information about supply or allow for constraint analysis.	Ideally, data source covers 100% of the all relevant entities for that infrastructure type, and whether it is compiled by a trusted source.
Fit for purpose	Whilst the dataset provides detailed information pertaining to historic demand and usage of New Zealand roads, we have been unable to identify any external supply and capacity data. It is for this reason that we have chosen to use the survey data to provide insights as to capacity constraints and the potential need for infrastructure investment.	Whether data directly informs supply/demand of infrastructure type in question. Whether metrics used are commonly accepted, or whether these relationships are derived unilaterally.

Data transformations

Data was collated from the New Zealand Transport Agency using the Roads Network Performance Tool (link above). Parameters such as VkT, Lane Length and STE data was then plotted by TLA against the Net Issue survey scores with the aim of identifying any relationships between the two variables.

In some instances, data was scaled by Effective Population within the TLA to provide a per capita view of infrastructure capacity trends. As the datasets lacked supply and capacity information, and conclusive relationships between the external data and survey results could not be identified, the Net Issue Survey results were used as the sole source of underlying data.

However, ultimately the dataset is considered inadequate due to its lack of supply and capacity information, and survey data was adopted for the analysis.

Data snapshot: Visitor accommodation

Data source: Commercial Accommodation Monitor, September 2016

Data publisher: Ministry of Business, Innovation and Employment (MBIE)

Link: <u>http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/commercial-accommodation-monitor</u>

Data description:

The Commerical Accommodation Monitor (CAM) provides an authoritative set of information on the supply and demand for accommodation at both the national and regional level.

It provides monthly data on capacity, occupancy rates, guest nights, and origin of guests (both domestic and international).

Data is gathered via a compulsory survey, reaching out to all commercial accommodation providers of sufficient scale.

Data checklist

The below table assesses the data quality of the Commercial Accommodation Monitor along four dimensions. The dataset is considered as robust due to its completeness and granularity, and has been used in this report.

Table D.6:	Data	snapshot -	Visitor	accommodation
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Metric	Comment	Benchmark/Target
Time frame	Monthly data, 2003 - 2016	Ideally, monthly data presented as time series
Granularity	Region, TLA	Region/TLA level data or smaller (e.g. unit record)
Completeness	The CAM is informed by a full Census (100% survey) on all short-term commercial accommodation units that are GST registered and that have a turnover of at least \$30,000 per annum. As of July 2012, the survey frame contained approximately 3,800 entities.	Ideally, data source covers 100% of the all relevant entities for that infrastructure type, and whether it is compiled by a trusted source.
Fit for purpose	The metrics measured by the CAM are directly relevant to inform supply and demand of commercial accommodation by region and by type of accommodation. Our analysis has leveraged in particular occupancy rates for accommodation by type.	Whether data directly informs supply/demand of infrastructure type in question. Whether metrics used are commonly accepted, or whether these relationships are derived unilaterally.

Using the CAM data, occupancy rates were calculated for each region during the peak visitor season by type of visitor accommodation (hotels, motels, backpackers, and holiday parks). A 'practial capacity' measure was calculated based on the top 1% of occupancy rate observations in New Zealand for each type of accommodation. The gap in the visitor accommodation is then given as the difference between the practical capacity and the actual occupancy rate seen in a particular region for a particular accommodation type.

Other datasets identified but not used

A number of other datasets were obtained via consultation/survey respondents, and made available to Deloitte as commercial in confidence. These datasets related to the areas of operation specific to each provider; and did not have consistency across New Zealand. While the data has been informative, these datasets were not explicitly considered in the anaylsis, and accordingly are not replicated in the report.

Data snapshot: Worker accommodation

Data source: Ministry of Business, Innovation and Employment (MBIE) rental bond data

Data publisher: Ministry of Business, Innovation and Employment (MBIE)

Link: <u>http://www.mbie.govt.nz/info-services/housing-property/sector-information-and-statistics/rental-bond-data</u>

Data description:

MBIE publishes monthly data for rental bonds at the TLA level from 1993 to 2016. Deloitte examines the *synthetic lower quartile rents by TA* series as a proxy of rents faced by workers in the tourism industry.

Data checklist

The below table assesses the data quality of the worker accomodation data along four dimensions. The dataset is considered as robust due to its completeness and granularity, and has been used in this report.

Metric	Comment	Benchmark/Target
Time frame	Monthly data (1993-2016)	Ideally, monthly data presented as time series
Granularity	TLA	Region/TLA level data or smaller (e.g. unit record)
Completeness	MBIE has complete data on all new rental bonds lodged each month.	Ideally, data source covers 100% of the all relevant entities for that infrastructure type, and whether it is compiled by a trusted source.
Fit for purpose	This is an appropriate proxy for monthly rents.	Whether data directly informs supply/demand of infrastructure type in question. Whether metrics used are commonly accepted, or whether these relationships are derived unilaterally.

Table D.7: Data snapshot – Worker accommodation

The rental data was used to construct a 'cost of worker accommodation' index using two factors that determine the affordability of worker accommodation:

- The average rent (2015) in a particular TLA compared to the national average. If a region has a high rental accommodation, it is likely to be less affordable for workers.
- The seasonal variation (averaged over 2000-2015) in rent for a particular TLA compared to the national average. If the rent spikes during the peak tourist seasons, it highlights that there is insufficient supply and competition by workers looking for accommodation is driving up rental prices.

The ranking of the 'cost of worker accommodation' index is then compared against the Net Issue Score rankings, with the aim of identifying any existing relationships between a high issue score/ranking and the corresponding TLA that has high worker accommodation costs.

Data snapshot: Water and sewage systems

Data source: Survey, Various websites

Data publisher: Various websites

Link: http://www.radionz.co.nz/news/national/312100/gastro-bug-hit-5000-in-havelock-north, https://www.ncbi.nlm.nih.gov/pubmed/25252359

Data description:

For water and sewage systems, Deloitte undertook desktop research to pinpoint instances of notable waterborne disease outbreaks in New Zealand. This is meant to give an indication of water and sewage systems in a particular region.

Data checklist

The below table assesses the data quality alongf our dimensions.

Table D.8: Data snapshot – Water and sewage systems

Metric	Comment	Benchmark/Target
Time frame	Snapshots	Ideally, monthly data presented as time series
Granularity	TLA	Region/TLA level data or smaller (e.g. unit record)
Completeness	Major waterborne disease outbreaks are covered. However, smaller cases are not identified.	Ideally, data source covers 100% of the all relevant entities for that infrastructure type, and whether it is compiled by a trusted source.
Fit for purpose	While the incidence of waterborne disease measures the impact resultant from poor water and sewage systems, it does not directly measure the quality of the infrastructure.	Whether data directly informs supply/demand of infrastructure type in question. Whether metrics used are commonly accepted, or whether these relationships are derived unilaterally.

Deloitte identified three instances of major waterborne disease outbreaks:

- Havelock North (August 2016)
- Darfield (August 2012)
- Cardrona (August 2012)

These instances were compared against monthly expenditure data in the relevant TLAs taken from the Ministry of Business, Innovation and Employment (MBIE).

For instance, it was investigated whether tourism expenditure in August 2016 (and after) was affected as a result of the Havelock North campylobacter outbreak. In particular, the August expenditure was compared against non-outbreak years.

Given limitations in the identified data, Deloitte ultimately relied on the survey results to measure the quality of the infrastructure by region.

Other datasets identified but not used

No other data pursued.

Data snapshot: Freedom camping

Data source: Department of Conservation campsites and OpenStreetMap campsites

Data publisher: Department of Conservation (DOC) and OpenStreetMap (OSM)

Link: <u>http://www.doc.govt.nz/campsites</u>, <u>http://download.geofabrik.de/</u>

Data description:

DOC funds and manages 250 campsites in New Zealand. They include both paid and free sites. In addition to the sites managed by DOC, there are also other camping facilities that are managed by local councils and commercial providers. OpenStreetMap (OSM) provides a user-reported database of camping facilities, totalling 440 records. It is likely that this dataset is incomplete.

To avoid double counting facilities from the two data sources, each campsite was matched across datasets, based on (i) name, and (ii) geographic distance. For instance, 192 DOC sites were also matched and accounted for in the OSM data. In total, 447 unique campsites were identified.

Data checklist

The below table assesses the data quality of the freedom camping data along four dimensions. The dataset is considered as robust due to its completeness and granularity, and has been used in this report.

Metric	Comment	Benchmark/Target
Time frame	Current snapshot	Ideally, monthly data presented as time series
Granularity	Unit record data, aggregated upwards to TLA/region	Region/TLA level data or smaller (e.g. unit record)
Completeness	Only identified campsites that have been registered on DOC and OSM have been considered. Given the nature of freedom camping, where individuals	Ideally, data source covers 100% of the all relevant entities for that

Table D.9: Data snapshot - Freedom camping

	have the right to camp in non- designated sites, it is difficult to capture the total capacity of freedom camping infrastructure. We also expect the OSM data to be incomplete – a glance at other (unobtainable) data sources indicates significant volumes of non- DOC campsites which are not captured by OSM.	infrastructure type, and whether it is compiled by a trusted source.
Fit for purpose	While the number of available campsites is one of the measures of capacity, there are other measures not captured. For instance, there is no data on the size of the campsites. Furthermore, the survey identifies a lack of facilities on sites, including toilets and running water. These quality related capacity constraints are not captured in the data. Data on price is also limited – consultations suggest that demand is chiefly for a basic level of amenities on free campsites.	Whether data directly informs supply/demand of infrastructure type in question. Whether metrics used are commonly accepted, or whether these relationships are derived unilaterally.

The campsite data from DOC and OSM is disaggregated by region, and used as a proxy for the total supply of freedom camping facilities by region. To get a sense of utilisation for freedom camping facilities in each region, demand for freedom camping (as defined by visitor nights spent in freedom camping facilities during the peak visitor season) was calculated using the Domestic Travel Survey (DTS) and International Visitor Survey (IVS) from the Ministry of Business, Innovation and Employment (MBIE) to estimate the proportion of visitor nights that could potentially be spent in 'freedom camping' facilities. In particular, the visitors who stay in the following accommodation are considered to be open to freedom camping during their trip.

IVS	DTS
Another place where you pay to park a caravan or campervan / motorhome overnight	Tent site
Camping at a National Park / Department of Conservation camping ground	Caravan site/campervan site
Free camping - staying at a place that is NOT an official camp site, in a tent, caravan, campervan / motorhome	Free camping (tent or campervan)
In a hut at a National Park / Department of Conservation area	National Park/Dept. of Conservation tent site
Other camping ground / holiday park (where you can stay in a tent, cabin, caravan, or campervan / motorhome)	

Using the most recent ten years of available data (2005-2015 for IVS and 2002-2012 for DTS), it is found that 6.0% of total visitor nights in New Zealand during the March quarter can be attributed to visitors that

are likely to freedom camp. This is then attributed to the regions based on their share of freedom camping visitors.

A utilisation rate for each region is then defined as follows:

$freedom \ camping \ utilisation_i = \frac{freedom \ camping \ nights \ (March \ quarter \ 2016)_i}{identified \ freedom \ campsites_i}$

where *i* = region

The ranking of the utilisation rate is then compared against the Net Issue Score rankings, with the aim of identifying any existing relationships between a high issue score/ranking and the corresponding region that has a high freedom camping utilisation.

Other datasets identified but not used

The Rankers website is a commercial website aggregating user reviews on the quality of attractions and accommodation across New Zealand. Freedom camping is included as a review category on this website, and underlying data includes the locations of government and private sector freedom camping facilities across New Zealand. This data is not available for public download, and this link was not pursued further. The website can be accessed at https://www.rankers.co.nz/.

Data snapshot: Facilities on public conservation lands

Data source: Survey, Department of Conservation (DOC)

Data publisher: Department of Conservation (DOC) **Link:** <u>http://geoportal.doc.govt.nz/geoportal/catalog/search/search.page</u>

Data description:

For facilities on public conservation lands, Deloitte has considered walking tracks managed by DOC. In particular, data is available for the length of track on each walk.

Data is available at the TLA and regional level.

Data checklist

The below table assesses the data quality of the DOC along four dimensions. The data for available items (tracks and huts) is assessed as of good quality, and despite the lack of data on additional facilities, has been used in this report.

Table D.10: Data snapshot - Facilities on public conservation lands

Metric	Comment	Benchmark/Target
Time frame	Current snapshot	Ideally, monthly data presented as time series
Granularity	Unit record data aggregated upwards to TLA/region	Region/TLA level data or smaller (e.g. unit record)
Completeness	The data presents a comprehensive list of huts and tracks managed by DOC in New Zealand. The data only includes scale, and does not include measures of quality.	Ideally, data source covers 100% of the all relevant entities for that infrastructure type, and whether it is compiled by a trusted source.

Fit for purpose	Facilities on public conservation lands of interest likely extends beyond huts and trails – it may for example include toilets, rubbish bins and information centres. We do not have this information.	Whether data directly informs supply/demand of infrastructure type in question. Whether metrics used are commonly accepted, or whether these relationships are derived unilaterally.
	Of the data we have available, length of walking trails is considered the most appropriate measure of facility provision. However, there is no available data on the quality of the trails.	

The track length and hut count data from DOC are aggregated upwards to regions, and used as a proxy for the total supply of facilities on public conservation lands by region. To get a sense of utilisation for the facilities in each region, demand for these facilities (as defined by visitor nights spent by visitors who use public conservation land facilities) is calculated as follows:

- Use the Domestic Travel Survey (DTS) and International Visitor Survey (IVS) from the Ministry of Business, Innovation and Employment (MBIE) to estimate the proportion of visitors to each region that visit a national park, or undertake bushwalking or trekking/tramping during their stay.
- Using the most recent ten years of available data (2005-2015 for IVS and 2002-2012 for DTS), it is found that 50% of total visitor nights in New Zealand during the March quarter can be attributed to visitors that are made use of facilities on public conservation land.
- A utilisation rate for each region is then defined as the average of

$public conservation land facilities utilisation_{i} = \frac{Nights by visitors who use public conservation land facilities (March quarter 2016)_{i}}{track length_{i}}$

where i = region

The ranking of the utilisation rate is then compared against the Net Issue Score rankings, with the aim of identifying any existing relationships between a high issue score/ranking and the corresponding region that has a high utilisation of walking tracks.

Other datasets identified but not used

DOC also provides data on a count of huts (serviced, great walk, basic, serviced-alpine, and standard) in each TLA. This dataset was discarded after preliminary analysis, where these data were assessed as having no discernable relationship relative to survey findings.

Data snapshot: Public toilets

Infrastructure type: Public toilets

Data source: OpenStreetMap (OSM)

Data publisher: OpenStreetMap (OSM), uploaded by individualsfreedom camping

Link: https://download.geofabrik.de/

Data description:

A database of registered standalone public toilets has been extracted from OSM. It identifies a total of 1,730 public toilets in New Zealand.

Data checklist

The below table assesses the quality of the OSM data along four dimensions. The dataset is considered as robust due to its completeness and granularity, and has been used in this report.

Table D.11: Data snapshot – Public toilets

Metric	Comment	Benchmark/Target
Time frame	As and when unit records are uploaded by individuals.	Ideally, monthly data presented as time series
Granularity	Unit record, aggregated to TLA and region	Region/TLA level data or smaller (e.g. unit record)
Completeness	The data includes self (user) reported standalone public toilets across New Zealand. Data traces back to a range of sources, including observation, local and national government data. Toilets in other public facilities (such as tourist attractions) are not included.	Ideally, data source covers 100% of the all relevant entities for that infrastructure type, and whether it is compiled by a trusted source.
Fit for purpose	The number of public toilet facilities captured in the data is directly relevant to inform supply in each region. However, it is noted that there is no information on the number of cubicles within each facility.	Whether data directly informs supply/demand of infrastructure type in question. Whether metrics used are commonly accepted, or whether these relationships are derived unilaterally.

Data transformations

The count of public toilets from OSM is disaggregated by region. This gives the supply of public toilets within each region. This is compared against total visitor nights during the peak season in each region.

Visitor nights in each region is calculated using the Domestic Travel Survey (DTS) and International Visitor Survey (IVS) from the Ministry of Business, Innovation and Employment (MBIE).

A utilisation rate for each region is then defined as follows:

$Public \ to ilet \ utilisation_{i} = \frac{total \ visitor \ nights \ (March \ quarter \ 2016)_{i}}{identified \ public \ to ilets_{i}}$

where i = region

The ranking of the utilisation rate is then compared against the Net Issue Score rankings, with the aim of identifying any existing relationships between a high issue score/ranking and the corresponding region that has a high visitor nights to public toilet ratio.

Other datasets identified but not used

n/a

Data snapshot: Telecommunications

Data source: Survey

Data publisher: n/a **Link:** n/a

Data description:

Deloitte used survey data on telecommunication facilities to measure the quality of the infrastructure by region.

Other datasets identified but not used

Deloitte identified the following data sources. Due to access issues, they were ultimately not used.

- Key telecommunication carrier providers (Vodafone, Spark, and 2degrees) provide coverage maps on their websites. However, Deloitte cannot legally extract the relevant data for analysis.
- Cell tower information, which covers the transmitter, frequency bands and antenna heights, is given by https://gis.geek.nz/celltowers. However it is not a simple task to convert these to coverage by geographic region as it will differ depending on elevation/terrain.
- The Ministry of Business, Innovation and Employment (MBIE) has access to coverage data, as reported in their Tourism Insight series. However, Deloitte has been unsuccessful in obtaining the data. Attempts to download and convert the MBIE coverage map into GIS format were also unsuccessful given the low resolution of the image.

Data snapshot: Recreation and sporting facilities

Data source: Survey

Data publisher: n/a **Link:** n/a

Data description:

The survey data results on recreation and sporting facilities was used to measure the quality of the infrastructure by region.

Other datasets identified but not used

The following datasets were identified but unsuccessfully pursued:

- Deloitte unsuccessfully pursued Sport New Zealand, Land Information New Zealand (LINZ) and Local Government New Zealand (LGNZ) in order to obtain data on recreation and sporting facilities.
- While OpenStreetMap data was available, it was very limited in its coverage of facilities, and inconsistent across sporting types and geographies.
- With reference back to the discussion under Events and Stadium facilities, it is noted that Sports and Recreation Victoria (SRV, the relevant department in Victoria Australia) collected data on recreational (public open space) and sporting facilities across Victoria. To Deloitte's knowledge, he project was undertaken at significant time expense and involved data and collaboration across

SRV, local governments, Google data and field trips. Deloitte did not pursue a similar avenue due to time constraints.

Other datasets identified but not used

The Rankers website is a commercial website aggregating user reviews on the quality of attractions and accommodation across New Zealand. Freedom camping is included as a review category on this website, and underlying data includes the locations of government and private sector freedom camping facilities across New Zealand. This data is not available for public download, and has not been pursued further. The website can be accessed at https://www.rankers.co.nz/.

Data snapshot: Tourism attractions and activities

Data source: Survey

Data publisher: n/a Link: N/A

Data description:

Deloitte used the survey data results on tourism attrations and activities to measure the quality of the infrastructure by region. While other data sources were identified, they were unsuitable for avalysis and not used in the analysis.

Other datasets identified but not used

New Zealand Tourism maintains a list of attractions sorted by adventure type (<u>http://www.newzealand.com/au/things-to-do/</u>). However, the data cannot be easily extracted from the website.

Further, the data was considered inappropriate for the analysis as it is difficult to define what would constitute as a 'tourism attraction and activity' infrastructure. For instance, the attractions cover a wide range of activities, including diving schools, Maori communities, and national parks.

Furthermore, it would have been difficult to compare the quality of the infrastructure across attractions. Consequently, the survey responses were the most appropriate source of data.

Data snapshot: Urban public spaces

Data source: Survey

Data publisher: n/a Link: N/A

Data description:

Deloitte used survey responses on urban public spaces to measure the quality of the infrastructure by region.

Other datasets identified but not used

Deloitte attempted to identify data sets on parks within metropolitan boundaries as part of its search. While some data sets were identified, they were ultimately not used.

Deloitte approached Land Information New Zealand and Local Government New Zealand for the data with limited success. While a dataset was obtained from New Zealand Fire Services, the data did not meet our requirements.

Deloitte collated OpenStreetMap data on parks falling within West Coast and Hamilton-Waikato regions. These regions were targeted as the survey data had indicated that there was an issue. The area of the parks were calculated as a share of total land area within the regions. However, the data proved to be uninstructive upon further testing.

Further, the definition of what constitutes an urban public space is likely to extend beyond parks within metropolitan boundaries. For instance, it could include non-grass gathering areas such as concrete lawns. Deloitte was unable to identify a suitable, complete data set across New Zealand.

Data snapshot: Airports and related facilities

Data source: Survey

Data publisher: n/a

Link: n/a

Data description:

Deloitte used survey responses on airports and related facilities to measure the quality of the infrastructure by region.

Other datasets identified but not used:

While other data sets likely existed, such as from Google maps, or the local governments, it was thought that there would be similar data issues (counts of airports unable to capture quality related issues) compared to other infrastructure types. Consequently, the survey data was used.

It is noted that airport masterplans generally plan for excess capacity at any point in time. For example, the Christchurch Airport estimated a capacity of 7.9 million passenger seats in the 2016 financial year, while 6.3 million passengers flew in and out of the airport.

The Ministry of Business, Innovation and Employment (MBIE) tourism insight series also suggested that airports were not the issue.

Data snapshot: Air connectivity (international and domestic)

Data source: Survey

Data publisher: N/A

Link: N/A

Data description:

Deloitte used survey responses on the air connectivity capacities to measure the quality of the infrastructure by region.

Other datasets identified but not used

The Ministry of Business, Innovation and Employment (MBIE) tourism insight series find that the existing physical infrastructure (such as runways) is not the limiting factor for air connectivity. Instead, it is contractual arrangements with airlines that limit existing flights, which is driven primarily by the individual airlines.

This means that should airlines find it commercially viable to increase the number of flights to a given destination, they will do so via contract negotiations with airports, and can do so in a relatively tight timeframe.

Consequently, it would have been inappropriate to use data sources that examine the physical infrastructure of airports. The survey responses were thought to be the best source of available data.

Should there be further interest in existing air connectivity capacity, it is noted that MBIE's study is underpinned by Sabre data, which is available for purchase.

Data snapshot: Cafes, restaurants and bars

Data source: Survey

Data publisher: n/a Link: N/A

Data description:

Deloitte used survey responses on cafes, restaurants and bars to measure the quality of the infrastructure by region.

Other datasets identified but not used

While Deloitte considered other data sets that provided an overview of cafes, restaurants and bars, they were ultimately not used.

For instance, Beanhunter and Zomato each provide a database of cafes and/or restaurants (<u>https://www.beanhunter.com/auckland, https://www.zomato.com/newzealand</u>). However, the data is privately held and not released to the public.

Similarly, while OpenStreetMap does provide data on cafes, restaurants and bars, it was not used as the data was incomplete, particularly for regional areas. Further, the data was likely to be outdated, particularly given the fast refresh rate of businesses in the food and beverages industry.

Data snapshot: Event and stadium facilities

Infrastructure type: Event and stadium facilities

Data source: Survey

Data publisher: n/a **Link:** n/a

Data description:

Deloitte used survey responses on event and stadium facilities to measure the quality of the infrastructure by region.

Other datasets identified but not used

Deloitte investigated a number of avenues to source Event and Stadia facility data, ideally looking for location and capacity of various facilities. The following three potential avenues were noted as unsuitable for the analysis:

- The Clearinghouse for Sport (https://www.clearinghouseforsport.gov.au/home), which maintains government data on sports activities and facilities for Australia and New Zealand. A database on facilities for Victoria exists – however, upon enquiring, the same was not available for New Zealand.
- LGNZ, assuming that facilities data would be held at the local council level. However, Deloitte had limited success with its query.
- Department of Health, should they maintain these facilities; this may be an avenue for future research.

Without the ability to speak to counts and quality of existing stadium networks, survey data was used in this report.

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