Sports Field Supply & Demand Study

Report Prepared for
Whangarei District Council

March 2022

In preparing this report it has been necessary to make several assumptions based on the information supplied to Global Leisure Group Limited during investigations for this study. The recommended actions contained in this report are subject to uncertainty and variation depending on evolving events but have been conscientiously prepared based on information provided by the Region's sports organisations and an understanding of trends in sport and recreation facility provision.

The authors accepted the information supplied during the preparation of this report. Whilst due care was taken during enquiries, Global Leisure Group Limited does not take any responsibility for any errors nor misstatements in the report arising from information supplied to the authors during the preparation of this report.

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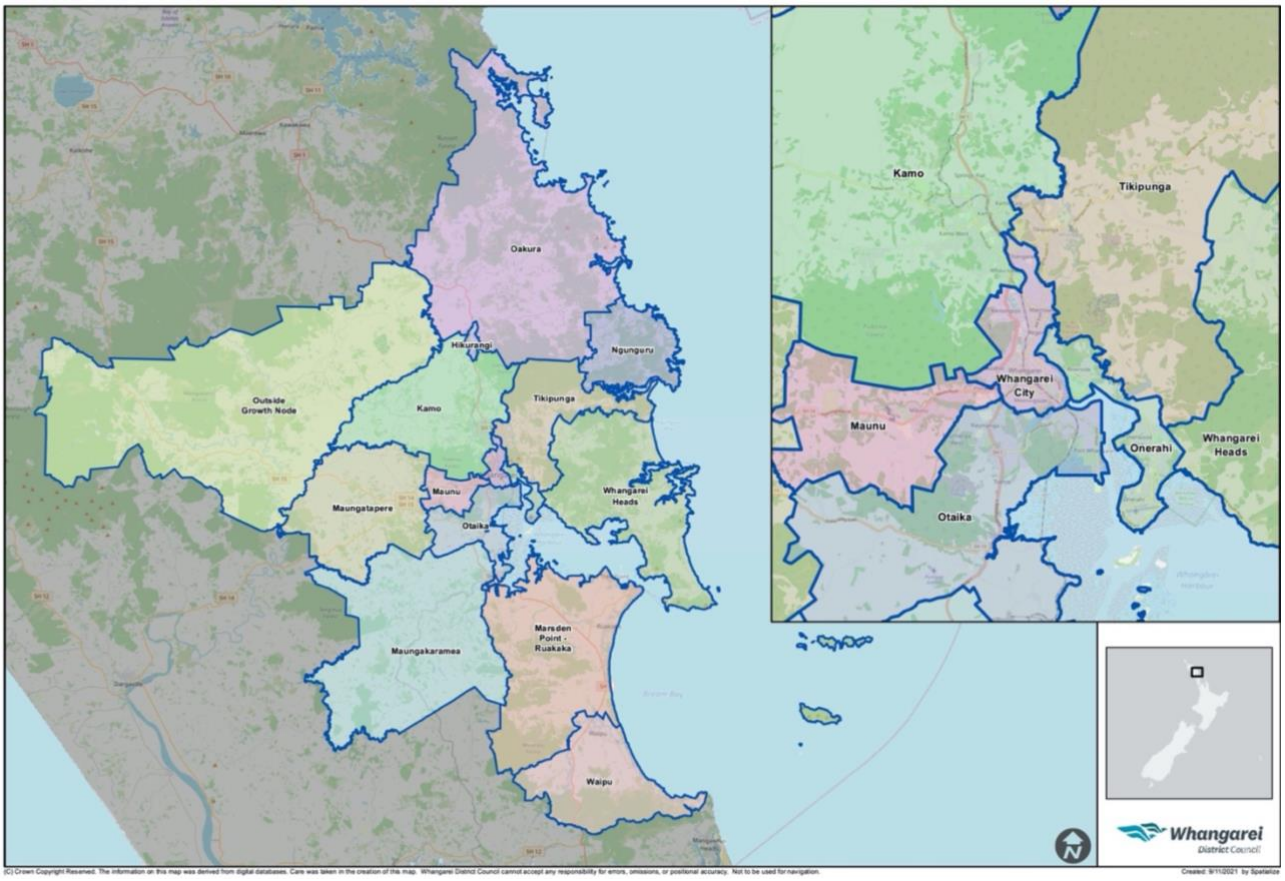
1 Executive Summary

In February 2021 Whangarei District Council (WDC) adopted the Active Recreation & Sport strategy. This included a recommendation to undertaking a sports field demand study. The sports codes to be included in the study utilise grass fields, specialist facilities located on grass fields (i.e., cricket wickets and nets, softball diamonds) and artificial hockey turf.

To consider the demand at a local level the district has been considered in 15 community analysis areas based on the Growth Nodes.

1.1 Community Analysis Areas



1.2 Winter Field Codes (Rugby, League and Football)

The 18 rugby clubs, 10 rugby league clubs and 12 football club in the Whangarei District requires 605 full field equivalent (FFE) hours per week.

Demand for field space varies across the codes with the different age grades having different requirements, senior teams require more game and training space than juniors, who in turn require more than mini teams.

Demand in FFE hours by type of field (2021)

Summary 2021	Total Demand Competition	Total Demand Training	Total Demand
TOTAL	**239**	**366**	**605**
Rugby	83	103	186
League	27	61	88
Football	129	201	342

In Whangarei District there are 90 Council, Marae and privately owned fields with a capacity of 944 full field equivalent hours of capacity per week.

When considering the supply of fields the report considered two approaches:

- ***Full Field Capacity*** This considers the full capacity of the field (hours per week) and does not take account of restrictions on accessibility (I.e. no lights after 6pm).

- ***Accessible Field Capacity*** This only considers the supply and demand at the peak times when participants want to access the fields This demand is mid-week, primarily training demand after 6pm when the majority of the senior teams want to train under lights.

Projected Surplus/Shortfall Training by Community Analysis Area (FFE hours weekday)

Community Area	2021	2031
Oakura	2	2
Ngunguru	-5	-6
Hikurangi	-3	-7
Kamo	41	35
Tikipunga	50	32
Maungatapere	17	16
Maunu	4	-1
Whangarei City	51	20
Onerahi	23	11
Whangarei Heads	2	-0
Otaika	35	17
Maungakaramea	9	6
Marsden Point - Ruakaka	-16	-35
Waipu	-10	-11
Outside Growth Area	0	0
Total	199	79

Projected Surplus/Shortfall Accessible Mid Week Training by Community Analysis Area (FFE hours weekday)

Community Area	2021	2031
Oakura	-3	-3
Ngunguru	-5	-6
Hikurangi	-17	-21
Kamo	30	24
Tikipunga	-32	-50
Maungatapere	-2	-2
Maunu	4	-0
Whangarei City	-23	-53
Onerahi	-2	-13
Whangarei Heads	-2	-3
Otaika	23	5
Maungakaramea	1	-2
Marsden Point - Ruakaka	-23	-41
Waipu	-9	-10
Outside Growth Area	0	0
Total	**-59**	**-175**

When the accessible weekend surplus and shortfall is considered the shortfall across the full week is projected to be -130 hours however this is not evenly distributed with a 37 hour a week surplus in Kamo while a -115 hour a week shortfall in Whangarei City (this is equivalent to 6 floodlit sand fields).

Current Situation Hours Surplus Shortfall – 2031 Accessible and Full Field Capacity

	Accessible Capacity				Full Field Capacity		
Analysis Area	**Mid-Week**	**Weekend**	**Total**		**Mid-Week**	**Weekend**	**Total**
Oakura	-3	2	-2		2	2	4
Ngunguru	-6	-7	-13		-5	-5	-9
Hikurangi	-21	5	-15		-3	6	3
Kamo	24	13	37		41	20	61
Tikipunga	-50	18	-32		50	31	81
Maungatapere	-2	10	8		17	11	27
Maunu	-0	6	6		4	8	12
Whangarei City	-53	-62	-115		51	-28	23
Onerahi	-13	39	26		23	45	68
Whangarei Heads	-3	1	-2		2	3	5
Otaika	5	13	19		35	24	59
Maungakaramea	-2	7	5		9	8	17
Marsden Point - Ruakaka	-41	0	-41		-16	12	-4
Waipu	-10	1	-9		-10	2	-8
Outside Growth Area	0	0	-2		0	1	1
Total	-175	46	-130		200	140	340

1.3 Hockey Turfs

Hockey operates a centralised model with teams competing at a central venue while training and some junior competition played locally with all hockey competition (community and school) organised through Northland Hockey Association.

There are 3 full sized and 3 half turf with secured community access. These turfs are considered to provide 223 full turf equivalent (FTE) hours of play per week. A number of school tennis / netball courts are used for hockey, should these be removed from the supply, there is considered to be 188 full turf equivalent (FTE) hours of play per week.

Demand for hockey turfs is predominantly made up of regular competition games and regular training by the 173 teams involved in winter competitions. Both competition and training demand is spread throughout the week with sub-region wide current demand for 212 FTE hours per week, 74 hours for competition and 138 hours for training. Of the training demand, 87 hours are for community training and 51 hours are for representative teams.

Surplus Shortfall Hours FTE 2031

	Competition	Training	Total Demand	Total Supply	Surplus / Shortfall
2021	74	138	212	223	11
2031	91	155	246	223	-23

Surplus Shortfall Hours FTE 2031 - Excluding School Facilities

	Competition	Training	Total Demand	Total Supply	Surplus / Shortfall
2021	74	138	212	188	-24
2031	91	155	246	223	-58

Cricket

There are 8 clubs in the Whangarei district playing in the Northland Cricket Association's Saturday and midweek competitions. These clubs and schools field 47 teams including 4 twilight teams.

Demand hours are based on the wicket and net space that teams at different levels require, to play and train.

District wide Saturday cricket requires 14.5 wickets for junior play on Saturday mornings and 7 wickets for senior play on Saturday afternoons.

Mid week cricket requires100 wicket hours for training and mid-week games and 166 net hours for training.

Across the District there are:

- 1 surplus on Saturday morning wickets
- 10 surplus wickets for Saturday afternoons
- 188 surplus wicket hours for mid-week training and games

Current demand is projected to increase by 2031 by:

- 2.5 wickets for Saturday am play
- 1 wicket for Saturday pm play
- 16 wicket hours for weekday training and games
- 29 net lane hours
- 122 surplus net lane hours.

The current supply of wickets across the region will meet all projected Saturday afternoon and training demand. By 2031 there will be a shortfall of -3 wickets required for Saturday morning play.

1.4 Module Sports: Touch and Summer Football

The summer module codes – touch and summer football all play on winter equivalent fields of varying sizes (usually ¼ or ½) that can be readily interchanged, particularly if cones are used for line markings. As all play is in centralised modules the demand in each community area reflects the geographical spread of modules.

Whangarei District module demand is 172 hours a week (143 hours for touch and 29 hours for summer soccer).

Across the Whangarei District there are 42 small sided summer code fields and 7 full sized fields with a capacity of 560 hours a week for touch and 460 hours a week for football.

2021 Supply Surplus / Shortfall in hours per week 4pm to 8pm Monday to Thursday

	Touch	Summer Football	Total hours per week
Oakura	0	0	0
Ngunguru	22	0	22
Hikurangi	0	0	0
Kamo	5	0	5
Tikipunga	62	63	125
Maungatapere	64	19	83
Maunu	0	0	0
Whangarei City	120	39	159
Onerahi	30	77	107
Whangarei Heads	0	0	0
Otaika	53	116	168
Maungakaramea	0	0	0
Marsden Point - Ruakaka	0	118	118
Waipu	62	0	62
Total Whangarei District	**848**	**431**	**417**

2031 Supply Surplus / Shortfall in hours per week 4pm to 8pm Monday to Thursday

	Touch	Summer Football	Total hours per week
Oakura	0	0	0
Ngunguru	11	0	11
Hikurangi	0	0	0
Kamo	-6	0	-6
Tikipunga	44	51	96
Maungatapere	54	18	72
Maunu	0	0	0
Whangarei City	120	37	157
Onerahi	-3	75	72
Whangarei Heads	0	0	0
Otaika	39	112	151
Maungakaramea	0	0	0
Marsden Point - Ruakaka	0	116	116
Waipu	51	0	51
Total Whangarei District	**310**	**409**	**720**

This indicates that there is sufficient capacity in the sports field network to meet the current and projected demand for touch and summer football. While there is projected to be sufficient capacity in the sports field network, current activity is concentrate onto a relatively small number of parks / nights of the week as a result of the capacity of the organisations to meet demand.

2 Introduction

In February 2021 Whangarei District Council (WDC) adopted the Active Recreation & Sport strategy. This included a recommendation to undertaking a sports field demand study. WDC is the main supplier of sports fields which are used by large numbers of people, particularly children and youth, and younger adults, and are essential facilities in the provision of opportunities for people to undertake physical exercise and enjoy playing sport. Sports fields also provide open space for other recreational activities as well as offering visual amenity.

The key objectives of the study are to:

- Understand current sports field demand situation (current demand and current supply)
- Project future demand (use population growth, popularity of codes, known development plans)
- Match future demand with future supply and identify surpluses and shortfalls
- Identify options to meet current and future demand based on increasing capacity of existing fields through drainage/lighting, partnership with others or development of additional fields (indicative land area).

Sports Codes

The sports codes to be included in the study utilise grass fields, specialist facilities located on grass fields (i.e., cricket wickets and nets, softball diamonds) and artificial hockey turf.

Where different sports share the same field or court area the current and projected use of the alternate sports must be considered in determining demand versus supply.

The proposed sports codes are:

Winter field sports	Winter turf[1]	Summer field sports	Summer specialist field
Rugby	Hockey	Touch rugby	Cricket
Football		Football 11s, 7s, 5s	
Rugby League			

2.1.1 The Sports Field Model and Key Considerations

The study will utilise the Sports Field Model developed in 2007 for Sport New Zealand. The Model calculates demand in terms of hours of use for both competition (games) and training. The demand hours per week are matched with the capacity hours per week and any shortfall or surplus identified.

Demand

The Model is a peak demand model, i.e. it is based on demand by core sports codes at the peak of their regular community competition. As such the following table shows which demand is included and excluded:

Included in demand	Excluded from demand
• All regular community use for the sports codes included in the study • Any school use, both general and sports team competition and training, that is regularly scheduled on community available fields, turf or outdoor courts • Any representative training or games that occur during the main part of the season	• Any use outside the field, turf or outdoor court playing area that does not impact on use of the field by community sport • Any use that, in winter in particular, is considered to be 'non-capacity reducing' and occurs at a time when community sport does not require the field, turf or court, e.g., school use during the school day

[1] Winter is considered the peak season for hockey

• One off demand for club, regional or national games or tournaments • Any use by minority sports, intermittent school use or community events on parks – this can usually be identified through councils' booking systems	• School sport played on school sports fields, turf or outdoor hard courts

Supply / capacity

The Sports Field Model is based on supply that is available for community use. The following table shows what supply is included and excluded.

Included in supply	Excluded from supply
• All council owned sports fields, turf or outdoor hard courts • All school, marae or privately owned sports fields, turf or outdoor hard courts regularly used for community sport and where that use is secured through a formal agreement between the council, or field user and the field owner for that use	• All school fields, turf or outdoor hard courts used only for school sport or other activities • All school, marae or privately owned fields, turf or outdoor hard courts used regularly for community sport where the use is not secured by a formal agreement

Supply / capacity is generally assessed as x hours of play at weekends and y hours of play mid-week on each field, turf or hard court.

The hours of play need to focus on community available hours, i.e.:

- in summer these are generally assessed as being between 4pm and 8pm weekdays and 8am or 9am and 6pm or 8pm weekends
- in winter, weather conditions usually limit the number of hours a grass field can be used before the surface is damaged beyond what normal maintenance practices can mitigate
- in winter flood lighting is needed for play beyond 5.30 or 6pm – this needs to be taken into consideration when setting winter capacities for fields, turf and hard courts

3 Key Population

The Whangarei district is expected to grow over the next 20 to 25 years. Although the population is growing it is also ageing. Both these factors need to be considered as future demand in a sub area with little projected growth and an ageing population will be markedly different from that in a growth area and a higher proportion of young people in the population.

A number of the sports codes have different levels of popularity amongst different types of people. We know that Europeans, New Zealanders and migrants from many parts of the world are over represented in football whilst Maori and Pacific People are over represented in rugby and league. The Whangarei district is changing and the area is becoming more diverse. This increasing diversity will also need to be considered.

Note that projections can be made as far into the future as population projections are available. However given the difficulties in accurately projecting populations far into the future and the possibility of changes in the relative popularity of different sports codes, and hence demand, the study will consider a 10 year period.

3.1 Impact of Population Growth and Trends

Population growth is a key driver of increased demand for sports fields and turf. Growth Trends at City and District wide level

Whangarei District's population is projected to increase by 14.6% from the 2021 Population estimate level to 2031– from 95,978 to 109,968.

Due to the ageing population, growth in the 'active population' (defined as 5 to 49 years) is slightly lower, with the 5 to 49 age group projected to rise by 12.7%, from 52,515 to 59,215.

3.1.1 Growth at community level

Whilst all of the community analysis areas are growing, the growth in active population is not evenly distributed across the community analysis areas.

Table 3.1 2021 Total Population Projections

Population	2021	2031
Oakura	2,820	2,806
Ngunguru	3,240	3,224
Hikurangi	1,750	1,978
Kamo	18,530	19,457
Tikipunga	10,220	12,264
Maungatapere	3,790	3,828
Maunu	5,810	6,275
Whangarei City	14,710	15,740
Onerahi	8,990	9,350
Whangarei Heads	6,120	6,732
Otaika	7,470	10,010
Maungakaramea	2,450	3,406
Marsden Point - Ruakaka	8,080	11,231
Waipu	1,260	1,265
Outside Growth Area	2,150	2,120
	97,390	**109,684**

Table 3.2 2021 Active Age Population Projections (5 to 49 years)

Population	2021	2031
Oakura	1,390	1,383
Ngunguru	1,560	1,552
Hikurangi	1,110	1,254
Kamo	10,240	10,752
Tikipunga	5,670	6,804
Maungatapere	1,960	1,980
Maunu	3,030	3,272
Whangarei City	8,190	8,763
Onerahi	4,895	5,091
Whangarei Heads	2,855	3,141
Otaika	4,715	6,318
Maungakaramea	1,270	1,765
Marsden Point - Ruakaka	3,910	5,435
Waipu	470	472
Outside Growth Area	1,250	1,233
	52,515	**59,215**

4 The Changing Sport and Recreation Environment

There is increasing evidence that the historic structural model for sport lacks the agility required to best meet the needs of our changing community and the associated expectations of participants, coaches, parents and volunteers alike.

As a result, the position of traditional sport is being challenged by an increasing range of recreational activities, the rise of the internet and on-demand consumerism. The evidence is growing that more and more individuals are choosing non-traditional sport options for their physical activity, many young people are turning away from formal sport or not undertaking physical activity at all.

The traditional model of delivering sport in New Zealand has not changed significantly in over 100 years and is embedded within National Sporting Organisations (NSOs), Regional Sporting Organisations (RSOs), Club and School delivery.

Recent trends[2] highlight:

- The system is losing young people from sport, and they are missing out on the opportunity to be physically active.
- High performance behaviours are creeping into youth and school-based sport.
- There is too much emphasis on being the best and winning.
- Young people are being forced to specialise in one sport too soon.
- Too much focus on skills and competitions rather than participation and fun.
- The system is allocating more resources to high-performance sport.
- Schools, parents and coaches encourage kids to be more competitive.
- The sport system lacks integration and focus, with significant dislocation with the club-school-club transitions, with resistance at governance levels to adopt change.
- There is a need for more suitably skilled and experienced people to deliver quality programmes.
- Increasing demands on time and the nature and quality of volunteer experience plus health & safety compliance, is reducing the number of volunteers.
- Reduced or changing nature of funding.
- Duplication of resources and activity.
- Systems not flexible and adaptable to changing needs / trends.
- Increasing number and variety of options available.
- The delivery model (i.e. rules, uniforms, cost, facility centralisation, representative pathways etc) often create barriers to participation rather than enable access.

Understanding the motivations of why people play sport have been well researched and understood for a long time:

- To have fun.
- To be challenged.
- To develop and improve.
- Be part of a team or group with a common interest.
- Enjoy time with friends and family.
- To compete and to win.

One of the key challenges we are facing is the imbalance between the variety of motivations behind why people get involved in a sport and the focus of the experiences they often receive.

4.1 Balance is Better, Sport New Zealand

Sport NZ has developed the Balance is Better philosophy to inform and provide a framework that puts the needs of the participant first and focusses on maximising participation and skill development.

> *"Balance is Better is about creating quality experiences for all young people to keep them active and in the game."*

The focus of Balance is Better is to work with the sector to provide quality experiences in sport for all, including for those who enjoy competition as well as those who just want to have fun with a central

[2] Sport New Zealand Balance is Better and Future of Play, Recreation and Sport https://sportnz.org.nz/resources/balance-is-better-philosophy/

philosophy on why young people play sport – to have fun, be challenged, develop and improve, be part of a team or group, and enjoy time with friends.

What Needs to Change to Implement Balance is Better

Balance is Better identifies that if we are going to change these downwards trends, we need to improve what is happening at the grass roots and for those involved in delivering sport for young people to think differently[3]. We need to think about how we can put the fun and skill development back into kids sport.

Balance is Better is about supporting the sport system in leading change and committing to:

- Ensuring all young people can receive a quality sport experience, irrespective of the level at which they are involved.
- Leading attitudinal and behavioural change among the sport leaders, coaches, administrators, parents, and caregivers involved in youth sport.
- Providing leadership to support changes to competition structures, participation, and athlete development opportunities.
- Reviewing the role and nature, and the age at which such offerings begin, of national and regional representative selections and tournaments to ensure skill development opportunities are offered to more young people.
- Sports and schools identifying young talent later in their development, rather than sooner.
- Supporting young people to participate in a range of activities and play multiple sports.
- Raising awareness of the risks of overtraining and overloading and proactively managing workload
- Working collaboratively to encourage the widest possible change for the wellbeing and sport participation of young New Zealanders.
- All New Zealanders having the right to participate in sport in an inclusive, fair and safe environment.

Balance is Better offers a fresh way of thinking for those involved in delivering sport for young people in New Zealand. With teen participation levels declining, it's about creating quality experiences for all young people to keep them active and in the game.

Balance is Better focusses on how to encourage participation at all levels and develop skill at the right pace.

4.2 Futures Project, Sport New Zealand[4]

Futures Summary Report

Sport New Zealand has been leading a Futures Project to consider what the future of play, active recreation and sport should or may look like. This identified that there is a consensus that the sector is currently struggling due to a number of reasons including declining participation numbers, funding constraints, demands on time, and a focus on competition rather than participation.

There is uncertainty how the sector will be impacted on by these long-term challenges:

- **Low levels of participation in traditional sports** – participation has declined over the past few decades with a marked drop off in participation when young people leave school and in some groups (such as girls, women and some ethnic communities).
- **Changing lifestyles and motivations** – motivation or opportunities to be more active are reducing due to more sedentary lifestyles, fewer active transport options, health status, less healthy diets, multiple jobs, pressures outside office hours, helping others. Increasing competition for leisure time can come from a growing focus on academic attainment, church and community service and from digital technologies.
- **Accessibility** – difficulties in getting to or accessing facilities, event or places leads to reduced levels of activity.
- **Monocultural design and delivery** – a monocultural view of play, active recreation and sport can leave Maori activities unrecognised and unsupported.
- **Governance** – there is inconsistency in the quality of governance and oversight across the sector. Poor governance and oversight challenge the integrity of, and trust in, many local, national and international organisations.

[3] Sport New Zealand Balance is Better Evidence to Support Change - Appendix A
[4] https://sportnz.org.nz/media/3707/futures-report-6.pdf

- **Economic** – for some participants the costs (fees, gear, travel etc) can be too high. Some organisations struggle to be viable and can lead to too much focus on securing funding at the expense of meeting the needs and aspirations of communities.
- **Workforce** – many organisations depend on volunteers, but as much of the population ages this base of support is declining. Other commitments also put pressures on volunteers involvement.

Future Trends

Trends and developments expected to shape the future of play, active recreation and sport have been identified. These include:

- **Technologies** - technologies (digital, physical, and biological) will have a variety of roles (legally and illegally) in enhancing performance and engagement, as well as being competitors for people's leisure time.
- **Data** - how personal and other data is gathered, used, shared and regulated will have increasingly significant implications for services and privacy for most aspects of our lives.
- **Demographic and social changes** - the changing age and ethnic diversity of our communities will increasingly shape the demands on the sector.
- **Social cohesion and wellbeing** - physical activities are seen to play an increasing role in building social cohesion and improving individual and community wellbeing. A growing expectation for recreation and sport to improve both social bonding (connections within groups) and social bridging (connections between groups).
- **Inclusion and equity of opportunities** - there is increasing recognition of the need for the sector to be more inclusive and accessible, and improve equity of participation and leadership opportunities. This includes not only recognising the changing face of New Zealand and addressing historical underrepresentation of particular groups in the sector, but also applying the principles of the Treaty of Waitangi, and recognising Māori worldviews and processes.
- **Locally-led design and delivery** - design and delivery of services will depend on local community involvement and the need to reflect the lived experiences and aspirations of the identities, cultures and ethnicities in those communities.
- **Climate change impacts** - the impacts of climate change will be important when deciding on the location and maintenance of facilities, and may affect access to places and spaces used for physical activity.

Preferred Future

The Futures Project identified that despite different approaches used to explore the future, a similar preferred option emerged. This involves distributing power, changing structures, processes, and choices. To achieve this, the Project identified significant changes will be required including:

- More choice and self-determination .
- More locally led initiatives.
- Empowerment of currently neglected or marginalised groups.
- Meaningful trusted partnerships.
- Greater diversity of people and experiences through all levels of the sector.
- Multi-cultural approaches as a given.
- Different power and decision-making structures.
- Greater innovation.

Papa Noho Report, Towards and Bicultural Future[5]

The Papa Noho Report brings together the work of Te Tūara Futures Group and the Working Group who were tasked with challenging current thinking and exploring a range of possible futures for Aotearoa from a Maori perspective and the sector as part of the Futures Project.

The Papa Noho report is written in parallel with a Scenarios Report that also builds on workshop discussions and focuses more specifically on exploring possible future scenarios and how the sector could respond. While Te Tuarā and the Working Group employed different approaches to exploring the future, both arrived at a remarkably similar future. Te Tuarā described 2040 as Hawaiki Ora, with its preferred future centred on:

[5] https://sportnz.org.nz/media/3709/futures-report-5.pdf

Mauri Ora

Maximum health and wellbeing

- Oranga Taiao - environmental wellbeing.
- Whānau Ora – community wellbeing.
- Hauora – individual Wellbeing.

Mana Māori

The status of Māori

- Mana Motuhake - self-determination.
- Mana Ōrite – partnership.
- Mana Taurite – equity.
- Mana Rangatira – leadership.
- Mana Tangata – workforce.

Preferred Future

The aspirations for a preferred future focused on meeting three core elements:

- **Physical Activity as a culture** – a future where physical activity is a part of everyday life, part of culture at the individual and collective level.
- **Being New Zealanders** – with a strong sense of our past, our journeys to Aotearoa, our connections to place and our responsibilities for the future.
- **Empowering Communities** – communities are empowered to make decisions on what works best for them and their people.

Both the Balance is Better and Futures Project provide a comprehensive overview to the current trends and challenges facing the sector and outline how potential futures can be explored.

4.3 The Ability to Adapt to Sport and Recreation Trends

Expectations vs Motivations

There is a potential mismatch between the current delivery structures, including the expectations of parents and coaches compared to the motivations of many young people. The current model of delivery often has remained unchanged for many years and reflects the motivations and systems that were in place when parents and those involved in governing and delivering the code were first introduced to the sport. This mismatch acts as a barrier to achieving wider engagement and participation both with those that currently participate and those that do not.

'Ownership' of Participant

In many codes there is a drive to increase membership and in effect take 'ownership' of individual participants. This 'ownership' is driven by the traditional structures where the number of members is often used as a measure of success and the casual participant is not as valued in the model.

Often other organisations use the membership model as a measure of success of an organisation as a reflection of their mana and to influence funding decisions. Some examples include:

- NSO's and RSO's using membership and affiliation fees as a mainstay of their funding mechanism (particularly for funding the high performance pathway).
- NZ Lotteries, philanthropic trusts, sponsors and other funders using membership as a measure of the impact or reach within funding decisions.

The 'ownership' model where casual participants are not recognised or valued reinforces traditional structures and the priorities for those involved in delivering community sport. In some cases this is reinforced through generating revenue from off-season competitions and high performance pathways, both of which ensure 'sole ownership' of the participant.

Understanding of Operational Pressures

Understanding the different priorities and perspectives for the different organisations and partners involved in the Project will be a challenge and require all partners to be flexible. While those involved in the delivery of some codes will identify with the wider strategic direction and the changing trends and motivations within sport and recreation they are often under resourced, struggling to find volunteers and struggling to keep their heads above water to maintain their existing activities with little or no capacity to consider let alone undertake change.

It is therefore important to understand the drive to deliver a strategic change against the reality often faced by those undertaking the day to day operation. Where this is the case, advocacy and facilitation in isolation is unlikely to bring about a change, direct help or intervention will be required to implement change.

Leadership and Implementation

It is clear that any approach to address the challenges or opportunities identified will require strong leadership and ownership of potential changes. Identifying who holds the vision, who talks to the vision and who drives the vision will be a key factor in determining the overall success of any changes.

Monetarisation of Sport

One of the outcomes of the sport and recreation trends identified has been the increase in more commercial and casual participation opportunities with many of these activities demonstrating significant growth over a short period of time. In a number of codes, activities which were once the central remit of the club are now being provided through a commercial or semi-commercial way, for example touch modules, informal football leagues, multi-sport events, movement and dance programmes, learn to swim. Many of these activities provide easy ways for individuals to become involved with little or no longer-term commitment to the activity. These activities often provide shorter games, shorter modular based activity and more flexible rules and regulations. With many of these activities, individuals are often paying more per activity session than they would if they joined a traditional club. What the growth of these types of activities clearly demonstrate is that many people want to participate in the sport or recreation in a more flexible way.

A Bi-Cultural Approach

Developing a bi-cultural approach is essential to breakdown some of the barriers pursued through siloed perspectives with a narrow definition of traditional, membership-based sports. This is despite the majority of all physical activity being informal and unstructured.

Moving away from a ‘one size fits all’ approach and developing a flexible and adaptable approach to service delivery and resourcing to ensure that all activities and sports organisations are recognised, resourced or supported by the sector.

5 Winter Sports Fields

The section of the report covers the three main winter sports field codes:

- Football
- Rugby Union
- Rugby League

Accessible Capacity

In addition the model now considered two approaches to assessing the capacity of the sports field network to consider:

- Full Field Capacity
- Accessible Field Capacity

Full Field Capacity

This considers the full capacity of the field (hours per week) and does not take account of restrictions on accessibility (I.e. no lights after 6pm).

Accessible Field Capacity

This only considers the supply and demand at the peak times when participants want to access the fields and there are potential barriers limiting the accessibility of these fields, i.e. floodlighting. This demand is mid-week, primarily training demand after 6pm when the majority of the senior teams want to train. Under this approach. It is assumed that:

Competition / weekend demand is during day light hours and floodlighting has limited impact on the field accessibility. Competition / Weekend supply and demand is therefore excluded from this scenario.

Junior and Intermediate age grade teams are available to train between finishing school and prior to 6pm on mid-week evenings. Junior and Intermediate age grade teams are therefore excluded from this scenario as they do not need access to training lights.

For example, a field which is capable of being used for 20 hours a week but does not have training lights would have:

Full Field Capacity	20 hours a week (8 hours weekend /competition,12 hours mid-week training)
Accessible capacity	0 hours a week. (The field has a capacity of 20 hours during daylight hours but has 0 hours accessible for mid-week training after 6pm).

5.1 Current Demand

5.1.1 Background to the Winter Sports Codes

Rugby Union

- There are 18 rugby clubs in the district with 139 teams.
- 21 of the teams are senior, 11 Presidents, 29 youth and 78 juniors.
- There are three women's teams identified.

Rugby League

- There are 10 rugby league clubs in the area 42 teams.
- Five of the teams are senior, nine youth and 28 juniors.
- No women or girls teams were identified.

Football

- There are 12 football clubs in the District with 225 teams.
- 33 of the teams are senior, 31 youth and 161 juniors.
- 8 women's and 2 girls teams were identified. However the majority of youth and junior teams are mixed.

Important note. From discussions it was identified that the 2020 season, used as the base for the team audit. Participation was estimated to be down by approximately 10% due to the impact of Covid19 restrictions.

5.1.2 The winter season

The senior winter season usually runs from early April to mid/late September. Demand usually peaks between May and August as junior competition is timed to fit the school term and senior competition tapers when teams who have not qualified for the competition play offs drop out.

There is significant pressure on sports field space at the end of the summer season with winter codes wanting to start training in February but summer sport still playing. Sports field renovation also takes place at the end of the summer season, which add more pressure to the space available.

5.1.3 Scope

Demand for winter fields is predominantly made up of regular competition games and regular training by community based teams (ie, not schools) involved in winter competitions. While school teams are usually excluded, a number are now beginning to entering teams as clubs within the community leagues. The table below outlines additional demand that is included or excluded.

Included as demand:	**Excluded from demand***
All regular competition and training use by community based (ie club / community group) teams for the 3 main winter codes – rugby, league and football.	Any use outside the field playing area.
Any school use, both general use and sports team competition and training that is either regularly or intermittently scheduled on community fields.	Any use considered to be 'non capacity' reducing, ie does not impact on the use of the field by teams or groups that are included as demand in this study.
Representative training and games that occur during the season	School use of school fields
High performance, skills development or academy programmes	
Any 'one off' demand, such as for club, regional or national games or tournaments	
Regular or intermittent use by minority sports	
Regular or 'one off' community events	

5.1.4 Field demand across the District

Demand hours are based on the field space teams in different codes and at different levels require to play games and train.

Other Uses

In addition to regular rugby, league and football competition and training, Whangarei sports fields are used for a variety of other non-regular and 'one off' activities, as outlined in the scope. This includes:

- events
- sports tournaments
- sport training and games (e.g., holiday programmes)

5.1.5 Winter Sport - Regular demand

Winter sport in the Whangarei District requires 605 full field equivalent hours per week.

Table 5.1: Whangarei District Demand in full field equivalents (FFE) hours per week

	Weekend (Mainly competition)	Weekday (Mainly training)	Full week
2021	239	366	605

5.1.6 Field demand hours by community area

Demand hours vary across different community analysis areas with a high of 196 field hours per week in Whangarei City.

Overall for every 1 weekend hour a further 1.6 weekday hours is required. The balance between weekend and weekday demand is largely dependent on the popularity of the codes in the area, the mix of junior and senior teams and the level of use by 'other' activities.

Table 5.2: Current Demand hours per week – full field equivalent (FFE)

Summary 2021	Total Demand Competition	Total Demand Training	Total Demand
TOTAL	**239.3**	**366.1**	**605.4**
Oakura	1.1	3.0	4
Ngunguru	8.5	10.8	19
Hikurangi	3.0	17.8	21
Kamo	21.5	33.5	55
Tikipunga	25.5	53.0	79
Maungatapere	1.5	1.5	3
Maunu	3.9	12.5	16
Whangarei City	102.0	86.6	189
Onerahi	23.6	54.4	78
Whangarei Heads	3.0	8.3	11
Otaika	24.1	37.4	62
Maungakaramea	1.1	5.8	7
Marsden Point - Ruakaka	15.9	30.3	46
Waipu	4.5	11.5	16
Outside Growth Area	0.0	0.0	0

5.1.7 Field demand hours by code

Demand for field space varies across the codes with the different age grades having different requirements, senior teams require more game and training space than juniors, who in turn require more than mini teams.

Games being played midweek, representative team training on weekdays or weekends during the season and other use of winter sports fields also impact the split of demand between weekend and weekday.

Table 5.3: Demand in FFE hours by type of field

Summary 2021	Total Demand Competition	Total Demand Training	Total Demand
TOTAL	**239**	**366**	**605**
Rugby	83	103	186
League	27	61	88
Football	129	201	342

5.2 Current Number and Capacity of Fields

5.2.1 Number and size of fields

Fields are considered secured for community use if they are Council owned or secured from other ownership through a formal agreement (lease, partnership etc) for a period of longer than one year.

In Whangarei District the 90 Council and Marae owned fields are made up of:

- 31 full size rugby fields and 6 x $^1/_2$ size
- 9 full size league fields
- 36 full size football fields, 3 youth and 5 x $^1/_2$ size
- This is the equivalent to 83 full field equivalents capacity providing winter fields.

5.2.2 Capacity of Current Secured Fields

The total weekly capacity is the assessment of how many hours of play each field can withstand before significant damage is caused that would result in field closure and increased maintenance costs. Associated facilities that impact on hours of use, such as irrigation, are included in the assessment. Field capacity figures have been provided by Recreational Services.

Across the Whangarei District the fields have been assessed as providing 944 full sized field equivalent (FFE) hours per week.

Table 5.4 – Capacity of Secured Fields (FFE hours per week)

	Rugby	Football	League	Total capacity[1]
Oakura	8	0	0	8
Ngunguru	0	10	0	10
Hikurangi	16	0	8	24
Kamo	30	86	0	116
Tikipunga	24	135	0	159
Maungatapere	20	10	0	30
Maunu	14	0	14	28
Whangarei City	140	58	14	212
Onerahi	68	78	0	146
Whangarei Heads	0	16	0	16
Otaika	0	50	70	120
Maungakaramea	24	0	0	24
Marsden Point - Ruakaka	0	32	10	42
Waipu	8	0	0	8
Outside Growth Area	1	0	0	1
	351	475	116	944

[1]Includes marae and privately owned fields

5.3 Current Capacity Surplus / Shortfall

As the field size requirements are fairly similar for the three codes it is feasible to reallocate fields should there be a supply surplus in one code and a shortfall in another. This analysis therefore considers not just surpluses and shortfalls within each code but over all three codes as a whole as well.

Currently most competition games are played at the weekend with mid-week training. If this tradition is to continue the weekend and weekday capacity will need to meet demand at those times. Travel times also need to be considered, as while teams are generally willing to travel out of their immediate area for games, if training space is not provided locally, particularly for junior and youth grades, participation rates can be impacted as some people are unwilling or unable to travel a distance to train.

Across the district there is a:

- 338 hour surplus across the week (139 hour weekend surplus and 199 hour weekday surplus).

Table 5.5: 2021 Surplus / shortfall in capacity in FFE hours per week by sports code - Football

	Community Area	Weekend surplus / shortfall	Weekday surplus / shortfall	Full week surplus / shortfall
Football	Oakura	0	0	0
	Ngunguru	-5	-5	-9
	Hikurangi	0	0	0
	Kamo	16	36	51
	Tikipunga	25	36	60
	Maungatapere	3	5	7
	Maunu	-2	-3	-5
	Whangarei City	-12	-2	-15
	Onerahi	24	2	26
	Whangarei Heads	4	8	12
	Otaika	14	2	16
	Maungakaramea	0	0	0
	Marsden Point - Ruakaka	11	-10	1
	Waipu	0	0	0
	Outside Growth Area	0	0	0
	Total	**76**	**68**	**144**

Table 5.6: 2021 Surplus / shortfall in capacity in FFE hours per week by sports code - Rugby

	Community Area	Weekend surplus / shortfall	Weekday surplus / shortfall	Full week surplus / shortfall
Rugby	Oakura	2	2	4
	Ngunguru	0	-0	-0
	Hikurangi	4	-2	2
	Kamo	5	6	10
	Tikipunga	6	14	20
	Maungatapere	8	12	20
	Maunu	6	8	14
	Whangarei City	-17	58	41
	Onerahi	22	27	48
	Whangarei Heads	0	-3	-3
	Otaika	0	0	0
	Maungakaramea	8	9	17
	Marsden Point - Ruakaka	0	0	0
	Waipu	2	-10	-8
	Outside Growth Area	1	0	1
	Total	**45**	**122**	**169**

Table 5.7: 2021 Surplus / shortfall in capacity in FFE hours per week by sports code - League

	Community Area	Weekend surplus / shortfall	Weekday surplus / shortfall	Full week surplus / shortfall
League	Oakura	0	0	0
	Ngunguru	0	0	0
	Hikurangi	2	-1	1
	Kamo	0	0	0
	Tikipunga	0	0	0
	Maungatapere	0	0	0
	Maunu	4	-2	3
	Whangarei City	1	-5	-3
	Onerahi	0	-6	-6
	Whangarei Heads	-1	-4	-4
	Otaika	10	33	42
	Maungakaramea	0	0	0
	Marsden Point - Ruakaka	1	-7	-5
	Waipu	0	0	0
	Outside Growth Area	0	0	0
	Total	**18**	**10**	**28**

5.4 Winter Sports Future Capacity Surplus / Shortfall

5.4.1 Calculating future demand

A Team Generation Rate (TGR) is calculated by dividing the total active population in each grade by the current number of teams, i.e., the TGR is the size of the active population at that particular level that is required to produce 1 team.

This TGR, together with population projections, is used to project the likely number of teams in the future and hence future demand (assuming game lengths, field sizes and training requirements remain constant) based on projected population growth.

In addition to population growth sport development factors are used (these can be positive or negative) to account for changes in sport popularity, demographics etc. These factors are assessed using information from a range of sources including historic team number trends over and above natural population growth, sport development targets from Regional Sports Organisations, club membership projections and other factors that could affect team numbers such as sport marketing programmes, local, regional, national and international events, changing sport popularity and changing demographics.

5.4.2 Team Generation Rate (TGR)

In Whangarei District there is 1 team for every 130 people aged 5 to 49.

The TGR's vary between codes with 1 football team in Whangarei for every 233 people aged 5 to 49 through to 1 league team for every 1,250 people aged 5 to 49.

Table 5.8: Team Generation Rates (TGR) by Community Area and Code (1 team per XX people)

	Rugby	Football	League	Overall 2021
Whangarei	233	296	1,250	**130**

The tables below show the projected demand in each community analysis area through to 2031.

Table 5.9: Projected Demand by Community Analysis Area (FFE hours per week)

	2021	2031
Oakura	4	5
Ngunguru	19	23
Hikurangi	21	26
Kamo	55	68
Tikipunga	79	109
Maungatapere	3	4
Maunu	16	22
Whangarei City	189	254
Onerahi	78	96
Whangarei Heads	11	15
Otaika	62	90
Maungakaramea	7	11
Marsden Point - Ruakaka	46	77
Waipu	16	18
Outside Growth Area	0	5
Total	605	818

Table 5.10: Projected Surplus Shortfall by Community Analysis Area (FFE hours per week)

	2021	2031
Oakura	4	3
Ngunguru	-9	-13
Hikurangi	3	-2
Kamo	61	48
Tikipunga	81	50
Maungatapere	27	26
Maunu	12	6
Whangarei City	23	-42
Onerahi	68	50
Whangarei Heads	5	1
Otaika	59	30
Maungakaramea	17	13
Marsden Point - Ruakaka	-4	-35
Waipu	-8	-10
Outside Growth Area	1.0	0.0
Total	338	125

5.5 Impact of Training Lights (Weekday)

During the winter season access to fields without training lights is restricted. While the field may have capacity it is not available for use without lighting. In addition to the availability of training lights the demand of training has been seen to be moving to early evening. While the fields and players may be available immediately after school it is an increasing trend that the coach is not available until after work. In considering the impact of training lights on the availability of fields the following assumptions have been made:

- Where training lights are available the full mid-week capacity of the field is considered.
- All fields without lights have been removed from available capacity
- All younger age grades (U5 – U10) have been removed from demand as they are considered to be able to train earlier in the day and do not require lighting.

Training Surplus Shortfall (Full capacity)

Table 5.11: Projected Surplus/Shortfall Training by Community Analysis Area (FFE hours weekday)

	2021	2031
Oakura	2	2
Ngunguru	-5	-6
Hikurangi	-3	-7
Kamo	41	35
Tikipunga	50	32
Maungatapere	17	16
Maunu	4	-1
Whangarei City	51	20
Onerahi	23	11
Whangarei Heads	2	-0
Otaika	35	17
Maungakaramea	9	6
Marsden Point - Ruakaka	-16	-35
Waipu	-10	-11
Outside Growth Area	0	0
Total	199	79

5.5.1 Training Surplus Shortfall (Lit/Accessible capacity)

Table 5.12: Projected Surplus/Shortfall Training by Community Analysis Area (FFE hours weekday)

	2021	2031
Oakura	-3	-3
Ngunguru	-5	-6
Hikurangi	-17	-21
Kamo	30	24
Tikipunga	-32	-50
Maungatapere	-2	-2
Maunu	4	-0
Whangarei City	-23	-53
Onerahi	-2	-13
Whangarei Heads	-2	-3
Otaika	23	5
Maungakaramea	1	-2
Marsden Point - Ruakaka	-23	-41
Waipu	-9	-10
Outside Growth Area	0	0
Total	**-59**	**-175**

5.6 Summary

The analysis highlights a number of variable which impact on the supply and demand for sports fields. To summarise each analysis area is considered in terms of:

- Current Situation 2021 (Accessible Supply). This is closest to what the clubs are current experiencing on a day to day basis.
- Future Surplus or Shortfall (Full Field Capacity and Accessible). This identifies the longer term gaps in facility provision. Full field capacity assumes that all options have been undertaken to make all fields fully accessible and additional capacity is required through new provision or field improvements. The Accessible capacity identifies the potential shortfall should no improvements be taken to improve the access to the current field network.

5.6.1 Current Situation 2021

An analysis of current participation highlights that the current priorities are to provide additional accessible field capacity in:

- Whangarei City
- Tikipunga
- Marsden Point – Ruakaka.

Table 5.13 Current Situation Hours Surplus Shortfall – 2021 Accessible Capacity

Analysis Area	Mid-Week	Weekend	Total	Commentary
Oakura	-3	2	-1	No immediate priority identified.
Ngunguru	-5	-5	-10	Explore options to provide an additional 9 accessible hours to meet current demand.
Hikurangi	-17	6	-11	Explore options to provide an additional 12 accessible hours to meet current mid-week demand.
Kamo	30	20	50	No immediate priority identified.
Tikipunga	-32	31	-1	Explore options to provide an additional 40 accessible hours to meet current mid-week demand.
Maungatapere	-2	11	9	No immediate priority identified.
Maunu	4	8	12	No immediate priority identified.
Whangarei City	-23	-28	-51	Explore options to provide an additional 65 accessible hours to meet current demand.
Onerahi	-2	45	43	No immediate priority identified.
Whangarei Heads	-2	3	1	Explore options to provide an additional 10 accessible hours to meet current demand.
Otaika	23	24	47	No immediate priority identified.
Maungakaramea	1	8	9	Explore options to provide an additional 6 accessible hours to meet current demand.
Marsden Point - Ruakaka	-23	12	-11	Explore options to provide an additional 23 accessible hours to meet current mid-week demand.
Waipu	-9	2	-7	Explore options to provide an additional 9 accessible hours to meet current mid-week demand.
Outside Growth Area	0	1	1	No immediate priority identified.

5.6.2 Future Situation 2031

In considering the future situation it is important to consider both the Accessible Capacity and the Full Field Capacity. When the Accessible Capacity is considered it can be seen below that the shortfall in hours in all areas has increased indicating that additional investment is required to increase the accessibility of fields.

When we consider the Full Field Capacity, this assumes that all of the current network of fields are floodlight and fully accessible. Where this shows a still shows a shortfall this indicates that additional field capacity is required to meet the future projected demand. This could include field upgrade (e.g. soil to sand carpet, or securing additional fields).

For example.

- In Tikipunga by 2031, should no investment be made into the current field network there will be a shortfall of -32 hours per week (-50 mid-week and surplus 18 weekend). However, if investment is made into floodlighting to ensure all the current network of fields are accessible there are sufficient fields in the current network to meet the both the projected mid-week training and weekend demand. This indicates that there are sufficient quantity of field, the fields are of sufficient quality, however they are not fully accessible.
- In Whangarei City by 2031, should no investment be made into the current field network there will be a shortfall of -115 hours per week (-53 mid-week and -62 weekend). However, if investment is made into floodlighting to ensure all the current network of fields are accessible there are sufficient fields in the current network to meet the projected mid-week training demand. However, an additional 67 hours (e.g. field upgrades to increase capacity, new fields) is required to meet weekend demand. This indicates that there are improvements required to the quantity, quality and accessibility of fields.

Table 5.14 Current Situation Hours Surplus Shortfall – 2031 Accessible and Full Field Capacity

	Accessible Capacity				Full Field Capacity		
Analysis Area	**Mid-Week**	**Weekend**	**Total**		**Mid-Week**	**Weekend**	**Total**
Oakura	-3	2	-2		2	2	4
Ngunguru	-6	-7	-13		-5	-5	-9
Hikurangi	-21	5	-15		-3	6	3
Kamo	24	13	37		41	20	61
Tikipunga	-50	18	-32		50	31	81
Maungatapere	-2	10	8		17	11	27
Maunu	-0	6	6		4	8	12
Whangarei City	-53	-62	-115		51	-28	23
Onerahi	-13	39	26		23	45	68
Whangarei Heads	-3	1	-2		2	3	5
Otaika	5	13	19		35	24	59
Maungakaramea	-2	7	5		9	8	17
Marsden Point - Ruakaka	-41	0	-41		-16	12	-4
Waipu	-10	1	-9		-10	2	-8
Outside Growth Area	0	0	-2		0	1	1

6 Hockey Turfs

6.1 Overview of Hockey

Hockey operates a centralised model with teams competing at a central venue while training and some junior competition played locally with all hockey competition (community and school) organised through Northland Hockey Association.

The senior winter season usually runs from early April to mid/late September. Demand usually peaks between May and August as junior competition is timed to fit the school term and senior competition tapers when teams who have not qualified for the competition play offs drop out.

6.2 Number and capacity of turfs

Turfs are considered secured for community use if they are Council owned or secured from other ownership through a formal agreement (lease, partnership etc) for a period of longer than one year.

Hockey is focused at the Hockey Northern Centre in Whangarei with access to three full sized turfs and a small sized turf. In addition hockey has been able to secure access to a number of half turfs, tennis and netball court, mainly on school sites, to be used for training throughout the week. Access to these turfs is usually through an individual arrangement between a club and the school.

There are 3 full sized and 3 half turf with secured community access. These include:

Hockey Northland	3 full size turf and 1 small sized turf.
Whangarei Primary School	1 half turf
Whangarei Intermediate	1 half turf

In addition there are a further 8 half turf equivalents (tennis / netball courts) at school sites used to host some Funstick competition and training locally throughout the region.

These turfs are considered to provide 223 full turf equivalent (FTE) hours of play per week.

Should the tennis / netball courts used for hockey be removed from the supply, there is considered to be 188 full turf equivalent (FTE) hours of play per week.

6.3 Current demand

Demand for hockey turfs is predominantly made up of regular competition games and regular training by the 173 teams involved in winter competitions. Both competition and training demand is spread throughout the week with sub-region wide current demand for 212 FTE hours per week, 74 hours for competition and 138 hours for training. Of the training demand, 87 hours are for community training and 51 hours are for representative teams.

It was identified that the current player numbers are approximately 10% below the pre-Covid levels.

Table 6.1 Demand in full field equivalents (FTE) hours per week

	Competition	Training	Full week
Whangarei 2021	**74**	**138**	**212**

6.3.1 Current surplus / shortfall

It is projected that there is a shortfall of 11 hours a week. This assumes that all school age training is undertaken on school based turfs outside community use hours.

Table 6.2 Surplus Shortfall Hours FTE 2021

	Competition	Training	Total Demand	Total Supply	Surplus / Shortfall
Whangarei	74	138	212	223	11

6.4 Future Demand

6.4.1 Calculating future demand - Methodology

Demand for future years is based on the number of teams produced by the current population factored up by population growth and sport development growth.

Team Generation Rates

A Team Generation Rate (TGR) is calculated by dividing the total active population in each grade by the current number of teams, i.e., the TGR is the size of the active population at that particular level that is required to produce 1 team.

Currently there is 1 team for every 563 people aged 5 to 49 in the Whangarei District.

This TGR, together with population projections, is used to project the likely number of teams in the future and hence future demand (assuming game lengths, field sizes and training requirements remain constant) based on projected population growth.

In addition to population growth, sport development factors are used (these can be positive or negative) to account for changes in sport popularity, demographics etc. These factors are assessed using information from a range of sources including historic team number trends over and above natural population growth, sport development targets from Regional Sports Organisations, club membership projections and other factors that could affect team numbers such as sport marketing programmes, local, regional, national and international events, changing sport popularity and changing demographics.

It was identified that participation numbers in 2020 declined by approximately 10% during to the impact of Covid 19. This decline is considered temporary with participation expected to return to pre-Covid 19 levels in the upcoming season.

6.4.2 Projections of Future Demand

Table 6.3 Surplus Shortfall Hours FTE 2031

	Competition	Training	Total Demand	Total Supply	Surplus / Shortfall
Whangarei	91	155	246	223	-23

Current demand is projected to increase by 16% by 2031. The increase in demand indicates that there is a projected shortfall of -23 hours a week. Equivalent to half a turf.

Should participation increase to the pre-Covid 19 levels, the projected shortfall by 2031 is likely to be higher.

In considering the future demand a number of potential scenarios should be considered. These include:

- Remove access to the school tennis / netball courts
- Representative team training.

Remove access to the school tennis / netball courts

The current sully of turfs includes access to a number of smaller training facilities (netball / tennis courts) at school sites. Should these facilities be excluded from the supply of turfs decreases from 223 hours a week to 188 hours a week. Under this scenario it is projected that there is a shortfall of -24 hours a week, increasing to -58 hours a week by 2031.

Table 6.4 Remove School Facilities - Surplus Shortfall Hours FTE 2031

	Competition	Training	Total Demand	Total Supply	Surplus / Shortfall
2021	74	138	212	188	-24
2031	91	155	246	223	-58

In considering this scenario, it is important to recognise the both New Zealand Hockey and the FIH recognise these types of facilities as suitable for local junior hockey and training.

Representative team training

The current representative programme currently utilises 51 FTE hours per week on the Hockey Northland turfs. This represents 24% of total turf utilisation and 37% of all training use. It is recognised that this is an

important aspect of the development of the game and should be supported. In considering this scenario the following should be considered:

- Representative training has been allocated a higher proportion of turf time that has been observed in other regions.
- Current trends indicate a change to representative sport with a number of other codes reducing their representative programmes.

6.5 Options to Meet Demand

There are four main options for increasing / maximising supply capacity:

- Increased secured access to, and more effective use of, school turfs for training and junior competition
- Increasing the capacity of existing school turfs (lighting) with an associated secure access agreement.
- Expanding the supply of turf.
- Partnerships / use agreements with others

i. Increased access to, and more effective use of, existing turf.

A number of school turfs are used across the District for training and some limited competition. Securing additional access for community training can provide local access for clubs and free up capacity at the Hockey Northland Centre.

Consideration must be given to the availability of turf time at these facilities as many are heavily utilised by schools and other codes.

ii. Increasing the quality / capacity of existing school turfs (lighting)

Without lights, training is limited to daylight hours which in winter means before 5pm to 5.30pm. Floodlighting extends the time a field is available, particularly for weekday training. With lights teams could train until 8.30 or 9pm, although current trends and feedback from players indicate a preference for training only until 8pm – 8.30pm. An Auckland City study undertaken in 2005 found that players are reluctant to train after 8.30pm due to work the following day.

Consideration should be given to any potential resource consent restrictions that may be placed on lighting. Should these restrict the use of the lighting at any potential site, alternative sites should be considered to maximise the value of the investment.

It is also unrealistic to expect all junior teams to train from 3pm as, whilst players may be available, coaches generally have work commitments meaning any start to training before 3.30pm or later is often difficult to manage. The current pattern for junior teams is for training to generally be between 4.30pm – 6pm to suit coach availability.

Increasing lighting at strategic sites in partnership with schools can provide additional training capacity for club training and junior competition where access agreements can be secured. n.

iii. Expanding the supply of turf - new turf development

Explore options to secure access to an additional half turf by 2031. In considering options to expand the supply of turf through new turf development priority consideration should be given to:

- Increasing geographic access to quality turf provision in the district
- Developing partnerships with other providers e.g. school
- Improving the quality of existing infrastructure / community locations.

iv. Partnerships / use agreements with other providers

Hockey is already using a number of school turfs. Whilst investigating partnerships is outside the scope of this study these could provide further capacity for junior competition and training as satellites of the Hockey Northland Centre. Through

7 Cricket

7.1 Current Demand

7.1.1 Background

- There are 8 clubs in the Whangarei district playing in the Northland Cricket Association's Saturday and midweek competitions
- These clubs and schools field 47 teams including 4 twilight teams.

7.1.2 Team numbers.

Northland Cricket Association and the Clubs provided information on the spread of their members across the community analysis areas. Each club's teams were then distributed across the club's main catchment area.

The 47 teams are not evenly spread evenly across the two councils as shown in the tables below.

Table 7.1: Number of Teams Generated within the community areas

	Senior	Junior
Oakura	0	0
Ngunguru	0	0
Hikurangi	0	0
Kamo	2	7
Tikipunga	5	3
Maungatapere	0	0
Maunu	0	0
Whangarei City	4	7
Onerahi	2	6
Whangarei Heads	0	0
Otaika	0	0
Maungakaramea	2	7
Marsden Point - Ruakaka	1	1
Waipu	0	0
Outside Growth Area	0	0
Total	16	31

7.1.3 Wicket and net demand

Demand hours are based on the wicket and net space that teams at different levels require, to play and train.

Teams require wickets for competition and (generally) both nets and wickets for midweek training, midweek twilight cricket games, As teams are reluctant to train the night before they play, demand and supply for training is based on Monday to Thursday evenings. Demand is assessed as hours required on a wicket or a net.

Note:
Demand on junior wickets assumes all games are played on formal wickets.

Demand on Saturday am, pm and mid-week wickets and mid-week nets is not evenly distributed across community areas. The spread of demand reflects club location and catchment areas and the location of centralised twilight competitions which are played mid-week.

Mid-week demand includes:

- Super Smash Fun, Friday evenings 5.30pm
- Twilight cricket Wednesday 5.30pm

Mid-week demand excludes:

- School team training as this all takes place on school fields
- Any use on mown wickets as these are generally smaller than normal cricket fields and can be mown into any sports park field

District wide Saturday cricket requires:

- 14.5 wickets for junior play on Saturday mornings
- 7 wickets for senior play on Saturday afternoons

District wide Midweek cricket requires:

- 100 wicket hours for training and mid-week games
- 166 net hours for training

Table 7.2: Council and Community Areas - Wicket and net hours demand per week

	No of Wickets Sat am - Junior games	No of Wickets Sat pm - Senior / College games	No of Hours Mid-week wickets - training and games	No of Hours Mid-week Nets - training
Oakura	0	0	0	0
Ngunguru	0	0	0	0
Hikurangi	0	0	0	0
Kamo	3.5	1	24	31
Tikipunga	1.5	0.5	8	12
Maungatapere	0	0	0	0
Maunu	0	0	0	0
Whangarei City	3	2.5	28	50
Onerahi	3	1	17	30
Whangarei Heads	0	0	0	0
Otaika	0	0	0	0
Maungakaramea	3	1.5	19	32
Marsden Point - Ruakaka	0.5	0.5	6	11
Waipu	0	0	0	0
Total Whangarei District	**14.5**	**7**	**100**	**166**

7.2 Current Supply

Wickets and nets are considered secured for community use if they are Council or club owned or secured from other ownership through a formal agreement for a period of at least one year. School wickets are considered secured if the school has cricket teams in the competitions. School nets are considered secured if the school teams are 'managed' by a club and that club has use of them.

7.2.1 Whangarei District wide supply

The table below summarises the available number of wickets and nets. Region wide there are:

15 wickets for Saturday morning

17 wickets for Saturday afternoon play

17 wickets for mid-week training and games

18 net lanes for training

The table below summarises the available **weekday** playing hours on wickets and nets.

Region wide the wickets and nets provide for:

- 288 wicket hours for mid-week training and games
- 288 playing hours in nets.

Table 7.3 – Weekday Playing hours on wickets and nets

	Whangarei District
Wickets	293.5
Nets	254

Note: Playing hours are based on 4pm to 8pm Monday to Thursday to reflect the availability of players and availability of daylight hours.

Note: Tikipunga Sports Park, Kamo Sports Park and Kensington have been identified as used by football or touch. The availability of field space to each of the codes needs to be clarified.

7.2.2 Weekend supply

The table below summarises the available wickets for weekend play .

Table 7.4 – Supply of wickets for weekend play and wicket and net hours for weekday training

	No of Wickets Sat am - Junior games	No of Wickets Sat pm - Senior / College games	No of Hours Mid-week wickets - training and games	No of Hours Mid-week Nets - training
Oakura	0	0	0	0
Ngunguru	0	0	0	0
Hikurangi	0	0	0	0
Kamo	2	2	24	32
Tikipunga	4	4	8	0
Maungatapere	0	0	0	0
Maunu	0	0	0	0
Whangarei City	4	6	28	176
Onerahi	2	2	17	0
Whangarei Heads	0	0	0	0
Otaika	0	0	0	0
Maungakaramea	2	2	19	48
Marsden Point - Ruakaka	1	1	6	32
Waipu	0	0	0	0
Total Whangarei District	**15**	**17**	**288**	**288**

7.3 Current Capacity Surplus / Shortfall

The table below summarises the Whangari District surplus/shortfall of wickets and nets.

Across the District there are:

- 1 surplus on Saturday morning wickets
- 10 surplus wickets for Saturday afternoons
- 188 surplus wicket hours for mid-week training and games
- 122 surplus net lane hours.

Table 7.5 – Supply of wickets for weekend play and wicket and net hours for weekday training

	No of Wickets Sat am - Junior games	No of Wickets Sat pm - Senior / College games	No of Hours Mid-week wickets - training and games	No of Hours Mid-week Nets - training
Oakura	0	0	0	0
Ngunguru	0	0	0	0
Hikurangi	0	0	0	0
Kamo	-2	1	9	1
Tikipunga	3	4	57	-12
Maungatapere	0	0	0	0
Maunu	0	0	0	0
Whangarei City	1	4	85	126
Onerahi	-1	1	16	-30
Whangarei Heads	0	0	0	0
Otaika	0	0	0	0
Maungakaramea	-1	1	13	16
Marsden Point - Ruakaka	1	1	11	21
Waipu	0	0	0	0
Total Whangarei District	**1**	**10**	**188**	**122**

It is important to note, while there is an overall surplus in terms of wickets and both training hours and net capacity it is not distributed evenly across the District. The highlights:

There is a shortfall of:

- 2 Saturday morning wickets in Kamo
- 1 Saturday morning wickets in Onerahi
- 1 Saturday morning wickets in Maungakaramea
- 12 hours shortfall for net lane hours in Tikipunga
- 30 hours shortfall for net lane hours in Onerahi.

7.4 Future Demand

7.4.1 Calculating future demand

Demand for future years is based on the number of teams produced by the current population factored up by population growth and sport development growth.

A Team Generation Rate (TGR) is calculated by dividing the total active population in each grade by the current number of teams, i.e., the TGR is the size of the active population at that particular level that is required to produce 1 team.

This TGR, together with population projections, is used to project the likely number of teams in the future and hence future demand (assuming game lengths, field sizes and training requirements remain constant) based on projected population growth.

In addition to population growth sport development factors are used (these can be positive or negative) to account for changes in sport popularity, demographics etc. These factors are assessed using information from a range of sources including historic team number trends over and above natural population growth, sport development targets from Regional Sports Organisations, club membership projections and other factors that could affect team numbers such as sport marketing programmes, local, regional, national and international events, changing sport popularity and changing demographics.

In Whangarei District there is 1 team for every 1,193 people aged 5 to 49.

7.4.2 Projections of Future Demand

The tables below shows the projected future demand for Whangarei District

Current demand is projected to increase by 2031 by:

- 2.5 wickets for Saturday am play
- 1 wicket for Saturday pm play
- 16 wicket hours for weekday training and games
- 29 net lane hours

7.5 Future Capacity Surplus / Shortfall

To assess the number and location of wickets and nets likely to be needed, future demand has been modelled against the current supply. Regular use of wicket space mid-week for other activities is assumed to grow in line with projections for the sports codes included in this study, or population growth only for other activities. This additional demand has been deducted from future wicket availability, i.e. future supply has been reduced.

7.5.1 Whangarei District

The current supply of wickets across the region will meet all projected Saturday afternoon and training demand.

By 2031 there will be a shortfall of -3 wickets required for Saturday morning play.

Current Saturday PM, mid-week training and net capacity will meet demand for the foreseeable future on a District wide basis.

Table 7.6 – Supply of wickets for weekend play and wicket and net hours for weekday training

	No of Wickets Sat am - Junior games	No of Wickets Sat pm - Senior / College games	No of Hours Mid-week wickets - training and games	No of Hours Mid-week Nets - training
Oakura	0	0	0	0
Ngunguru	0	0	0	0
Hikurangi	0	0	0	0
Kamo	-2	1	7	-1
Tikipunga	2	3	55	-15
Maungatapere	0	0	0	0
Maunu	0	0	0	0
Whangarei City	1	3	82	122
Onerahi	-1	1	14	-32
Whangarei Heads	0	0	0	0
Otaika	0	0	0	0
Maungakaramea	-2	-0	5	3
Marsden Point - Ruakaka	0	0	8	17
Waipu	0	0	0	0
Total Whangarei District	**-3**	**9**	**172**	**93**

It is important to note, while there is an overall surplus in terms of wickets and both training hours and net capacity it is not distributed evenly across the District. The highlights:

There is a shortfall of:

- 2 Saturday morning wickets in Kamo
- 1 Saturday morning wickets in Onerahi

- 2 Saturday morning wickets in Maungakaramea
- 1 hours shortfall for net lane hours in Tikipunga
- 15 hours shortfall for net lane hours in Tikipunga
- 32 hours shortfall for net lane hours in Onerahi.

7.6 Options for the Future

7.6.1 Meeting Identified Shortfalls

- The projected 10 wicket shortfall for Saturday am play could be met in a number of ways:
    - playing more junior games on Friday evenings, a growing trend in other major cities
    - moving some of the older junior games into Saturday pm where there is wicket capacity
    - Use of wickets in primary schools not currently entering teams in the competition
    - Installation of more wickets.
- Discuss with the RSO to determine the best options.
- Update projections regularly to ensure planning is based on the best possible information.

7.6.2 Maintaining Quality of Facilities

- Work with RSO to develop an agreed quality standard for artificial wickets and nets
- Ensure that all facilities are maintained to the agreed minimum standard.

8 Module Sports: Touch and Summer Football

8.1 Current Demand

8.1.1 Background

The summer module codes – touch and summer football all play on winter equivalent fields of varying sizes (usually ¼ or ½) that can be readily interchanged, particularly if cones are used for line markings.There is also some use of summer fields for winter code preseason training.

The fields used are sometimes used for other sports codes, tournaments, skills development and high performance programmes and community events. As with cricket training all fields assigned to, or used by touch, tag and summer soccer were assessed as having 4 hours capacity per week night from 4pm to 8pm, i.e. a total of 20 hours per field per week.

Some summer modules run all season, whilst others run either from October to mid-December or from February to the end of March. As demand overall is higher in the February to March period the data in this report reflects that time.

Module demand is identified as a sum of the total field hours required to operate the identified modules. It is calculated based on information provided by module organisers and Council field data. Demand is calculated based on:

- The number of fields required
- The length of bookings (hours of use)
- The frequency of modules (number of times per week)

8.1.2 Council and Community Area Demand

As all play is in centralised modules the demand in each community area reflects the spread of modules.

Whangarei District demand is for:

- 143 hours for touch
- 29 hours for summer soccer
- 172 hours in total.

A review of the information provided has indicated that demand for summer touch and football modules has increased by between 25 – 30% over the last three years. The majority of this growth has been in both social and mixed gender teams. This growth is significantly above population growth and reflects the sporting trends identified earlier and experienced elsewhere in New Zealand.

Table 8.1 – 2021 Demand hours per week for touch, tag and summer football by community areas

	Touch	Summer Football	Total hours per week
Oakura	0	0	0
Ngunguru	18	0	18
Hikurangi	0	0	0
Kamo	15	0	15
Tikipunga	18	17	35
Maungatapere	16	1	17
Maunu	0	0	0
Whangarei City	0	2	2
Onerahi	50	3	53
Whangarei Heads	0	0	0
Otaika	8	4	12
Maungakaramea	0	0	0
Marsden Point - Ruakaka	0	2	2
Waipu	18	0	18
Total Whangarei District	143	29	172

8.2 Current Supply

8.2.1 Current Field Supply

Fields were considered touch, tag or summer football fields if they were marked or if a module was based there.

Across the Whangarei District there are 42 small sided summer code fields and 7 full sized fields comprising:

- 33 touch fields
- 9 summer small sided and 7 full sized football fields

Note: Tikipunga Sports Park, Kamo Sports Park and Kensington have been identified as used by football or touch. The availability of field space to each of the codes needs to be clarified.

A review of the current data from recreational services identifies the following summer allocations:

Touch	Football
Kamo Sports Park	Ruakaka Sports Park
Tikipunga Sports Park	
Kensington Sport Park	
Mangakahia Sports Park.	

Analysis of the RSO and Club data highlighted that the following parks were utilised for summer sport.

Touch	Football
Kamo Sports Park	Ruakaka Sports Park
Tikipunga Sports Park	Tikipunga Sports Park
Kensington	Mangakahia Sports Park
Mangakahia Sports Park.	William Frazer park
Otaika Sports Park	Morningside Sports Park
Onerahi Sports Park	Otaika Sports Park
Caledonian Sports Park, Waipu	
Ngunguru Sports Park	

8.3 Current Hours Supply

As with cricket training all fields assigned to, or used by touch, tag and summer football were assessed as having 4 hours capacity per week night except Friday, from 4pm to 8pm, i.e., a total of 20 hours per field per week.

In Whangarei District there are playing hours comprising:

- 560 for touch
- 460 for summer football.

8.4 Current Capacity Surplus / Shortfall

Currently there is a supply surplus across all codes in all areas where summer fields are provided.

Table 8.2 – 2021 Supply Surplus / Shortfall in hours per week 4pm to 8pm Monday to Thursday

	Touch	Summer Football	Total hours per week
Oakura	0	0	0
Ngunguru	22	0	22
Hikurangi	0	0	0
Kamo	5	0	5
Tikipunga	62	63	125
Maungatapere	64	19	83
Maunu	0	0	0
Whangarei City	120	39	159
Onerahi	30	77	107
Whangarei Heads	0	0	0
Otaika	53	116	168
Maungakaramea	0	0	0
Marsden Point - Ruakaka	0	118	118
Waipu	62	0	62
Total Whangarei District	**848**	**431**	**417**

It is important to note that while there is an identified surplus a number of module organisers were indicating that they are coming under significant pressure to accommodate the number of teams.

The majority of modules often place challenges on the operator and volunteers and usually restrict competitions to one night a week.

This indicates that while there is potentially significant additional capacity within the sports field network many module operators are facing other significant challenges in growing the organisational capacity to meet the demand.

8.5 Future Demand

8.5.1 Module hour generation rates

As team numbers are not available for all modules, the module generation rate (MGR) is based on module hours. The MGR is the number of people aged 5 to 49 in the population that generate 1 hour of module play demand.

The module hour generation rates are:

- 111 people aged 5 to 49 to generate a module team
- 159 people to generate a touch team.
- 375 people to generate a football team.

To assess the field supply likely to be needed, future demand has been modelled against the current supply. In addition to population growth, the demand for module based sports is projected to increase by a further 50% over the next 10 years.

Modules are assumed to be located in current locations.

8.5.2 Projections of Future Demand

The tables below show the projected demand in each community area until 2031.

Table 8.3: Whangarei - Projected Demand by Community Area (FFE hours per week)

	Touch	Summer Football	Total hours per week
Oakura	0	0	0
Ngunguru	29	0	29
Hikurangi	0	0	0
Kamo	26	0	26
Tikipunga	36	29	64
Maungatapere	26	2	28
Maunu	0	0	0
Whangarei City	0	3	3
Onerahi	83	5	88
Whangarei Heads	0	0	0
Otaika	21	8	29
Maungakaramea	0	0	0
Marsden Point - Ruakaka	0	4	4
Waipu	29	0	29
Total Whangarei District	**250**	**50**	**300**

8.6 Future Capacity Surplus / Shortfall

The current supply of fields across the sub-region will meet all projected to 2031 demand.

Table 8.4 – 2031 Supply Surplus / Shortfall in hours per week 4pm to 8pm Monday to Thursday

	Touch	Summer Football	Total hours per week
Oakura	0	0	0
Ngunguru	11	0	11
Hikurangi	0	0	0
Kamo	-6	0	-6
Tikipunga	44	51	96
Maungatapere	54	18	72
Maunu	0	0	0
Whangarei City	120	37	157
Onerahi	-3	75	72
Whangarei Heads	0	0	0
Otaika	39	112	151
Maungakaramea	0	0	0
Marsden Point - Ruakaka	0	116	116
Waipu	51	0	51
Total Whangarei District	**310**	**409**	**720**

8.7 Future Capacity Surplus / Shortfall

With the current supply of fields, based on the current hours of use per week it is estimated that there is sufficient capacity to meet the needs of current and future participation.

There is a good geographical distribution through the WOP Sub-Region.

It is therefore considered that there is adequate supply for sports fields to meet projected future demand through to 2031.

While there is projected to be sufficient capacity in the sports field network, current activity is concentrate onto a relatively small number of parks / nights of the week as a result of the capacity of the organisations to meet demand.

8.7.1 Options for the future

- While it is identified that there are sufficient sports fields to meet demand for the study period, consideration should be taken about how the demand is being met. All options for sports field provision should consider:
    - Quality: Do the current facilities meet a minimum quality standard?
    - Accessibility: Are the facilities accessible to the local community to meet demand?
- Update projections regularly to ensure planning is based on the best possible information.

9 Appendices

9.1 Options to Meet Shortfall in Field Capacity

There are three main options to meet the shortfall in field capacity:

- more effective use of existing fields through code allocation and use schedules
- increasing the capacity of existing fields
- expanding the supply of fields

9.1.1 More effective use of existing fields

i. Optimising code allocation and competition / training balance

The data provided in this report will help ensure allocation of fields is optimised across competition and training and across codes.

ii. Changing Sports Schedules

Currently most football and rugby competition games are played on Saturdays with some league on Sundays. This leaves many fields unused on Friday evenings. In some parts of New Zealand there is a growing move towards playing some grades, usually young children, on Friday evenings. **Coastline League used to play their senior men's competition on Friday evenings but have now reverted to Saturday afternoons**. Where competitions are run Bay of Plenty wide scheduling changes will be difficult because of the need to have agreement from those outside the Whangarei District.

vii. Reconfiguring small sided fields

Both council's provide a number of small sided fields for younger children to play on. There is potential for some of these games to be played on full fields using cones to mark off the smaller areas. This would provide an opportunity to reconfigure park layouts to provide the maximum number of full size or half size fields. Such reconfiguration would provide greater flexibility in use as currently these fields are too small for higher grade games and some levels of training.

9.1.2 Increasing the capacity of existing fields

i. Drainage

Installing drainage in an un-drained soil field is likely to improve the quality of the field but may not significantly increase its playing capacity.

ii. Irrigation

Irrigation during dry summers is essential to ensure fields go into the winter season with good grass coverage and the ability to maintain a good quality playing surface throughout the winter season.

iii. Lighting existing unlit fields

When setting field capacity figures, it is assumed that fields without floodlights have a lower capacity than fields with floodlights, regardless of the actual capacity of the field to withstand use. This is because, without lights, training is limited to daylight hours which in winter means before 5pm to 5.30pm.

Floodlighting extends the time a field is available, particularly for weekday training. With lights teams could train until 8.30 or 9pm, although current trends and feedback from players indicate a preference for training only until 8pm – 8.30pm. An Auckland City study undertaken in 2005 found that players are reluctant to train after 8.30pm due to work the following day.

It is also unrealistic to expect all junior teams to train from 3pm as, whilst players may be available, coaches generally have work commitments meaning any start to training before 3.30pm or later is often difficult to manage. The current pattern for TCC based junior teams is for training to generally be between 4.30pm – 6pm to suit coach availability.

In assessing weekday capacity use at weekends also needs to be taken into consideration as fields in winter cannot take unlimited play without long term damage to the field surface.

There is an assumption that the field surface can take increased play without sustaining long term damage. This requires appropriate ongoing levels of maintenance and seasonal renovations.

iv. Extending flood lighting on partly floodlit fields

Currently some floodlit fields available for training are only partly lit reducing the level of usable lit space. The calculation of field hours assumes that there is less capacity on unlit fields. Extending floodlighting to illuminate the full field will provide additional training capacity after dark.

iii. Sand carpeting soil fields

In the northern areas of New Zealand sand carpeting of soil fields often doubles or more the capacity of the field. As many of the Whangarei fields are already on sandy soil this level of gain is not envisaged.

iv. Dedicated training areas (DTA)

Dedicated training areas will generally have a much higher training capacity than a field that has to retain a reasonable surface quality for weekend competition. DTAs are a viable option to consider. Whilst it is possible to share DTAs between codes in practice it can result in friction particularly if the field surface deteriorates and compromises training quality. There are successful examples of code sharing of artificial turf fields which can take almost unlimited use. Involvement of the RSO and negotiating formal written agreements between the clubs / codes will help avert potential problems.

v. Artificial Turf

Capacity of existing fields can be extended to 50 or more hours a week if artificial turf surfaces are used. This is between 3 to 4 times the capacity of most of the Whangarei's current fields. Note that whilst turf manufacturers say the fields can be used 24/7, in reality community teams are not 'available' to make use of them right across the day. In addition, manufacturer's warranties tend to be based on limiting use to 2000 hours per year.

The third generation turfs (3G) comprise simulated grass stalks tufted in a weaved rubber backing, with small crumb rubber balls and sand swept into the base of the stalks to hold them upright. They look and play like natural grass and are available in versions approved by all three winter codes.

3G turf can be installed in existing sports parks or on greenfield sites. The cost of installation is dependent on the scope of preparation work needed to level and drain the site, the size of the field, whether a shock pad is installed or not and, to some extent, the brand of turf.

Artificial turf fields have a limited life. At this stage this life is estimated to be between 8 to 12 years depending on the nature and intensity of use and how well the turf has been installed and maintained. The earliest installations are only now reaching this age. Generally just the carpet needs to be replaced at that time providing the foundation has been well prepared in the first instance. The capital cost of a turf, including shockpad and floodlights can lie between $1.8 and $2.2 million.

Artificial turf fields do require specialised maintenance to ensure the turf fibres remain upright as they are designed to take the wear on the tip of the fibre. If the fibres flatten they will be subject to more wear and can shred. Maintenance costs, excluding the (generally) required daily inspections are estimated to be in the region of $30,000+ per year for an artificial turf receiving around 40 hours use per week. The significant capital investment also needs to be protected in some way from unsuitable use, vandalism and fire.

ix. Hybrid Turf

Hybrid turfs represent a 'half way' point between natural grass fields and artificial turf. They are based on a natural grass field reinforced with artificial fibres. The fibres are woven into a backing material through which natural grass grows. Hybrid turfs are thought to extend the playing capacity of a sand based field to around 30 to 35 hours per week, although this has yet to be proven on fields used for community sport in New Zealand.

Auckland Council has conducted several small trials with hybrid turf installed in football goal mouths with very encouraging results. The first hybrid turf fields are now being installed with one on a football field and a second on a rugby field.

The hybrid turf can be installed on site and will typically take the same time to be ready for play as a standard newly stolonised grass turf. It can also be grown off site and then laid, markedly reducing the time the field is out of play.

Hybrid turf offers a number of benefits over artificial turf including:

- cost, currently estimated at around $500,000 if on an existing sand carpet field with full drainage
- no requirement for a fully engineered base
- looks and plays like a natural grass field
- meets FIFA 1 star standard (even without natural grass)
- uses sand as infill
- similar temperature to natural grass fields in summer
- does not require fencing for protection
- sections can readily be replaced
- is seen as still being a grass field

There are also some disadvantages compared with artificial turf:

- provides less additional capacity
- is still not proven for community sport use under New Zealand conditions
- will still require between season maintenance, similar to that given to any sand based grass field
- will still be subject to wet weather closures similar to any grass field

9.1.3 Expanding the supply of fields

i. Greenfield development

Explore options to develop additional high quality, floodlit fields to maximise accessible capacity.

ii. Partnerships / Use Agreements with Other Providers

Sport is already using sports fields owned by other providers, in particular marae, sports clubs and schools.

Whilst investigating partnerships is outside the scope of this study these could provide further capacity.

9.2 Definitions

Term	Definition	Comments
Active population	Ages 5 to 49 –	The age groups most likely to be playing winter code sports.
Capacity	Field hours per week	The number of hours of play per week that a sports field can withstand before sustaining long term damage. Is determined by the type and standard of field surface and presence or absence of flood lighting.
Demand	Field / turf / court hours per week	The number of field / turf / court hours per week needed for play.
FFE	Full field equivalent	There are a number of small sided fields / turfs used by junior players. These fields are defined in terms of full field equivalents, e.g. a half sized field is ½ full field equivalent.
Full field	A full field is one suitable for senior games.	Field measurements vary between codes. To be defined as a full field the measurements need to fall within maximum and minimum length and width.
Module	Activity where multiple teams come together to play on a single location	Usually junior based training or casual/commercial activities – touch, tag
RSO	Regional Sports Organisation	The regional body running the sport in the district. In general they manage some or all the competitions and act as the link between sports clubs and the National Sports Organisation.
Secure sports fields	Secure fields are those where on-going use is secured through ownership (e.g. council fields) or a formal agreement (lease, partnership etc) for a period of longer than one year.	
Surplus / shortfall	The balance when demand is matched against supply.	Defined in terms of field hours per week.
TGR	Team Generation Rate	The TGR is calculated by dividing the number of people in the age group by the number of teams in the area in that age group. For example: if there are 10 mini rugby teams in the 5 to 6 year old age group and 2000 5 to 6 year olds living in the area the TGR is 200 (2000/10). This means there is 1 team generated for every 200 5 and 6 year olds in the area.

		The figure is used as part of the future projection calculation.
Unsecured fields	Fields where use could be terminated at very short notice.	
Weekend and weekday use	Refers to use at the weekend or during the week.	For the three sports field using codes and for netball, weekend demand is predominantly for games and weekday use for training. In contrast, hockey run a number of competitions during week nights, with Sundays mainly set aside for tournaments and representative training

9.3 General Scope

Included as Demand

- All regular community use for the 3 main winter codes – rugby, league and soccer
- Any school use, both general and sports team competition and training that is regularly scheduled on community available fields
- Any representative training or games that occur during the main part of the season
- Any 'one off' demand, such as for club, regional or national games or tournaments
- Any use by minority sports, intermittent school use or community events on parks

Excluded from Demand*

- Any use outside the field playing area
- Any use considered to be 'non capacity reducing'

*Includes a number of college teams whose games are regularly scheduled on community fields

9.4 Key Assumptions for Modelling

Projections for the future have been based on the following key assumptions:

- Population growth will be in line with current SmartGrowth projections
- The population will age in line with Statistics New Zealand age projections
- Winter sport will be played in the same manner as currently, i.e. field sizes, game lengths, training requirements and the timing of each code's playing season will continue as now
- Clubs will continue to draw most of their players from their existing geographic catchment areas
- The growth or decline in participation rates of different ethnic groups will balance out so that growth in demand in one code is matched by a similar drop in another
- Demand from any new winter code is matched by a drop in demand from an existing code
- School demand for use of community fields will continue at the current level
- Demand for winter fields for non-sport or irregular use will be managed through the booking system and not significantly exceed current levels
- There will be a small increase in participation rates across all three codes until 2028 – the increase will vary across the different grades and be in line with recent trends
- There will be no further increase in participation rates between 2038 and 2063 – growth in demand will be solely from population growth
- There will be no new clubs formed in areas where a code does not already have a presence
- There will be no unexpected changes to field supply

9.5 Sports Field Methodology

This study into the supply and demand for sports fields in the Western Bay of Plenty Sub Region has been carried out using the Sports Field Model developed in 2008 by Longdill and Associates in conjunction with Auckland City Council. The Model was peer reviewed by representatives from large and small Territorial Authorities across New Zealand. Since development the Model has undergone a number of refinements.

The model is a "peak demand" model aimed to determine the surplus or shortfall of fields for regular week by week community use.

What is meant by a peak demand model?

- the methodology focuses on comparing the highest period of demand (peak) with the availability of field supply at that time
- Peak demand is defined as the time of the season when there is greatest demand, that is, when all competitions are at their peak and demand for field space is highest
- Peak demand is also defined as the time of day of greatest demand - e.g., if the greatest demand for adult rugby is on a Saturday afternoon, the methodology will compare demand against supply on a Saturday afternoon to see if the 'peak' demand can be accommodated within that time period

Model Stages

The model is based on a 7 stage process:

Stage 1 Identification of all teams

Stage 2 Determining current field demand

Stage 3 Identification of all fields

Stage 4 Determining current field capacity

Stage 5 Identification of current surpluses and shortfalls (hours per week)

Stage 6 Identification of future surpluses and shortfalls (hours per week)

Stage 7 Analysis and development of options.

Stage 1 Identification of all teams

For each code all teams, based in the Whangarei District, or playing in a Whangarei District based module (centralised competition), have been identified as follows:

- 2016 team lists from the Regional Sports Organisations (RSO) and updated with club information
- Secondary school teams regularly using community fields from the RSOs and draws
- Teams in competitions outside the RSO sourced from competition organisers

Stage 2 Determining current field demand

The competition field hours required for each team, based on field size and length of game, were agreed with RSOs and both councils for the 2014 study and reconfirmed for this 2016 study.

Provision has been made for both home and away competitions (teams usually only play at home 50% of the time) and module type competitions where all teams gather in a central location.

Training field hours requirements are based on averages calculated from information provided by the Whangarei District's clubs and have been accepted by both councils. They are calculated from the amount of field space required (full, half, quarter field), whether that space can be shared with other teams, the length of a training session and the number of training sessions per week.

Stage 3 Identification of all fields

Both Councils provided field lists including field size and capacity for both weekend and midweek play. Fields owned by other providers have been included where there is a formal agreement for community use for more than one season.

Stage 4 Determining current field capacity

The capacity for each individual field is calculated as the hours the field can be used each week without sustaining long term damage, and divided into weekend and weekday use.

The capacity of the fields has been assessed by Council staff or, if privately owned, based on information provided by the club using the field or allocated an 'average' capacity figure. These capacity figures take account of the type and condition of surface and the presence of lighting.

Stage 5 Identification of current surpluses and shortfalls

The total current demand has been matched against the current supply and any surpluses or shortfalls identified. This has been carried out in each analysis area on a code by code basis and aggregated to determine the Whangarei District wide situation.

Stage 6 Identification of future surpluses and shortfalls

Demand for future years is based on the number of teams produced by the current population factored up by population growth and sport development growth.

A Team Generation Rate (TGR) is calculated by dividing the total population in each grade by the current number of teams. The TGR is the size of the population in that particular grade that is required to produce 1 team.

This Team Generation Rate, together with population projections, is used to predict the likely number of teams in the future and hence future demand (assuming game lengths and field sizes remain constant) based on predicted population growth.

Population growth figures used in the model are the projections provided by SmartGrowth.

SmartGrowth population projections do not provide an age breakdown. As the active participation age range for winter field sports is defined as being from age 5 to 49 the effect of an ageing population needs to be accounted for in the projections.

Statistics New Zealand produces population projections at Census Area Unit level to 2043 categorised into five year age groups. We have used projections to calculate the percentage of the projected population aged 5 to 49 for each community area at ten yearly intervals to 2048.

In addition to population growth, sport development factors are used (these can be positive or negative) to account for changes in sport popularity, demographics etc. These factors have been assessed in association with Council staff, using information from a range of sources including historic team number trends over and above natural population growth, feedback from Regional Sports Organisations, club membership projections and other factors that could affect team numbers such as sport marketing programmes, local, regional, national and international events, changing sport popularity and changing demographics.

Stage 7 Analysis and development of options

The resulting data is assessed at community analysis area level, as well as city level and sub-regional level and options developed to ensure supply keeps up with demand.