

# Kai Security, Resilience, and Sovereignty in 4412

Challenges, Barriers, and Vulnerabilities

I lo Matua Kore, ki te Pō. I te Pō, ki te Ao.

Ko Ranginui e tū iho nei, ko Papatūānuku e takoto nei.

Nau mai e ngā hua,

nā Tāne, nā Rongo-mā-Tāne, nā Tangaroa, nā Haumia-tike-tike,

nā te whānau atua o Aotearoa.

Ko Tararua ngā maunga,

ko Manawatū te awa,

ko Kurahaupo te waka,

ko Whatonga, rāua ko Reretua, ngā tūpuna,

ko Rangitāne te iwi.

Nā reira, tihei, mauri ora.

# Executive Summary

The 4412 area of Palmerston North is home to over 25000 people, it's an area rich in diversity, hopes, skills and connections, but where many struggle to provide enough food for their whanau. For the past 4 months Manawatū Food Action Network have been defining the food challenges our people in the 4412 face so we can create a coherent, achievable strategy to support our people move from food insecurity to food resilience and food sovereignty. We would like to acknowledge the aroha filled mahi that is already being done by all the community groups we have interacted with. You are the taonga that is integral to positive outcomes for the whanau of 4412.

The 4412 Food Resilience Strategy journey we are on is at the definition stage. Like all journeys, we have acknowledged where we have come from, where we are, and we have highlighted where we want to go. To get to the food resilience destination, our next challenge is to identify trails that will lead us forward, these paths will be varied, multifaceted and will lean heavily on the community resources already in the 4412 and identify areas that need strengthening. In November, we will present our suggested pathways for consultation with vested community groups. We will lean heavily on your wisdom to identify what is achievable.

## What we have discovered

- A definition for food security, resilience, and sovereignty
- Our rohe and the community/governmental groups working to support our people.
- Up to 10,000 4412 residents live with some form of food insecurity
- A methodology for confronting the task.
- Identified the 4 pathways kai gets into our homes so we can tailor plans to facilitate these pathways.
- The main stressors that contribute to food insecurity.
- That food insecurity is only a small piece of the puzzle for the challenges vulnerable people face but converting that insecurity into resilience will provide the whanau with more time and space to overcome their larger challenges.
- What a food resilient community could look like.

On a personal level I want to show my aroha and appreciation for the MFAN team of Heike Schiele, Madz BatachEI, Helen Lehndorf, Lisa Christensen and Sharon Stevens for driving this important work along. Through this journey I have met over 30 different community groups working within the 4412 to support those that need a little extra help. I am continually surprised and impressed with the capacity they have to care for those that need extra love. I have every confidence that together we can arrive at the 4412 food resilience destination together.

**UP TO 10,000 4412  
RESIDENTS LIVE WITH SOME  
FORM OF FOOD INSECURITY**

MFAN welcomes feedback, discussion, and further information about kai security, resilience, and sovereignty challenges experienced by 4412 residents. We anticipate many of our partners will see gaps in our knowledge, or corrections we should take on board. We acknowledge that 4412 residents who experience food insecurity have not been surveyed or interviewed directly for this report, yet we also have considerable respect for the direct client experience of the service providers with whom we did consult. MFAN acknowledges our need for our partners: Our collaborative kaupapa—whānau ora and kai security—is larger than all of us put together.

Once this draft strategy has been accepted, the next phase is identifying pathways to building food resilience and sovereignty. Through the connections with community groups, MFAN has already identified over 40 different actions that can be taken to help us reach our destination and we expect to identify even more with feedback from this draft, in November we will be sharing these pathways with you for your consideration.

Dave Mollard Kai Security Lead – Manawatū Food Action Network Oct 21

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# 1.0 Introduction

## 1.1 Manawatū Food Action Network

Manawatū Food Action Network (MFAN) connects people and organisations within the Manawatū River region, supporting resource sharing to empower and enable communities to take charge of their food security and food resilience. In 2020, Manawatū Food Action Network (MFAN) was reactivated under the umbrella of Environment Network Manawatu (ENM), building on initial 2016-2017 cross-sector work that had been put aside in 2018 and 2019 because no funding was available.

ENM was seen as a suitable umbrella organisation for renewing MFAN both because it had some spare capacity in 2019, and also because ENM had a developed interest in coordinating food action among its own member organisations. ENM's interest in food action predated its early involvement in MFAN: this prior interest involved, for example, the ground-up development and adoption of a collaborative food action statement. The statement's values are commensurate to those of the wider MFAN network and rooted in the practical initiatives of ENM member groups. Tanenuiarangi o Manawatū Incorporated—the environmental arm of Rangitāne o Manawatū—had a guiding role in its development, especially by identifying the six conceptual pou that uphold the statement:

Pou tikanga (mahinga kai, pātaka kai)

Pou taiao

Pou atua,

Pou mauri

Pou ohaoha

Pou tangata tiaki (kaitiakitanga)

(Environment Network Manawatu 2017).

Shortly after ENM committed to renewing MFAN's community strengths mapping project, the challenges of COVID-19 reshaped national, regional, and organisational priorities. In response, with substantive support from Palmerston North City Council, ENM has continued to employ an MFAN Coordinator for the ongoing work of community engagement, capacity building, developing relationships, creating connections, and supporting community-led action for food resilience.

## 1.2 Ora Konnect and a holistic vision for Kai Security in 4412

Since May 2021 MFAN also has been developing a Kai Resilience Strategy for residents living in the 4412 area, a Palmerston North postal code. This postal code overlaps approximately with the neighbourhoods of Awapuni, Cloverlea, Highbury, Takaro, Westbrook, and West End. These neighbourhoods have been chosen as an initial focus for a Kai Resilience Strategy in large part due to deprivation data drawn from the New Zealand Census. Strengths and weaknesses with this emphasis are discussed in Appendix A. 4412 also have relatively affluent residential areas such as Riverdale, Dittmer Drive, the Racecourse area and outer Cloverlea. These areas are a source of resources that the more challenges areas can lean into.

More directly, MFAN's 4412 activities emerge from the collaborative organisational context directed by Ora Konnect: a multi-organisational, collaborative impact initiative led by Danielle Harris for Whakapai Hauora and Joanne Ransom for Palmerston North City Council. Ora Konnect has been developing since at least 2017 to develop holistic support for whānau ora within 4412: that is, Ora Konnect aims to “support whānau to drive their own health and wellbeing” within an “integrated system” including “education, health, social and community services” (Te Tihi n.d.). Working within a collaborative impact framework, Ora Konnect serves as a backbone organisation, creating the relationships necessary

to deliver connected services for a well-being kaupapa—whānau ora—that is bigger and more complex than any individual organisation or single intervention can address effectively in isolation. The governments Lotteries Covid-19 Community Wellbeing Fund was critical to the funding of this project.

In May 2021, as one facet of their work and also in part as a response to COVID-19, Ora Konnect created the 4412 Kai Security Squad. In a workshop facilitated by contributing organisation Te Tihi, Ora Konnect participants developed a broad vision for Kai Resilience in 4412. This vision balances the urgent need of feeding people today with the long-term need to change systems through step-change activities. As reported by Te Tihi, the Kai Security initiative can be considered successful when people;

- Are not worrying about the source of their next meal;
- Have enough food available for the whole week;
- Are eating nourishing, healthy, quality food.
- Have the knowledge, education, and skills to grow food, minimise food waste, cook using seasonal produce, and share surplus food;
- Are eating nourishing, healthy quality food;
- Have the knowledge, education, and skills to grow food, minimise food waste, cook using seasonal produce, and share surplus food;
- No longer have any need for food banks;
- Are achieving whānau ora through food security and resilience

**NO LONGER HAVE ANY NEED  
FOR FOOD BANKS**

(Ora Konnect 2021)

Ora Konnect creates an enabling context, supporting MFAN to make connections and to contribute to a vision that is much larger than MFAN can address on their own. MFAN wishes to acknowledge the leadership of Rangitāne o Manawatū—who hold mana whenua in this rohe—as well as the leadership of Palmerston North City Council and all the other collaborators within Ora Konnect. Internally to MFAN, the 4412 Kai Resilience Strategy is led by this report's lead, Dave Mollard.

### 1.3 Food security and resilience and pandemic response

A key motivating context for this strategy is COVID-19. The pandemic, and Aotearoa's pandemic response, have led to diverse and interconnected impacts on residents of 4412, highlighting existing systemic vulnerabilities, and raising awareness here—as elsewhere in the nation—of the importance of community-led, local action as one component of a secure and resilient food system. At the same time, raised awareness about food insecurity has directed increased attention to the existing community strengths and assets in 4412 that are supporting resilience. Demand for these community-led solutions, however, is outstripping readily available supply.

### 1.4 Purpose of the 4412 Kai Resilience Strategy, with key definitions

The 4412 Kai Resilience Strategy is designed to identify new opportunities to extend, enhance, refine, or diversify current community-led action. The strategy's purpose is to identify strategic actions that can contribute to food security by enhancing food system resilience. An additional goal is to do so in a way that honours tino rangatiratanga with respect to food: food sovereignty.

### 1.4.1 Food system

In this context, the food system is defined as the entire weave of ways that food is made available to the people living within 4412 neighbourhoods, all the pathways that food is accessed and used within these neighbourhoods, and the dynamic interactions of these factors over time.<sup>1</sup>

### 1.4.2 Food security

Food Security is understood in the context of Ora Konnect’s shared vision, and defined as having enough—and being reasonably confident there will continue to be enough—healthy, nutritious, and safe quality foods, as well as the ability to access and use these foods in ways that are culturally appropriate and that support full participation in social activities involving food.<sup>2</sup>

### 1.4.3 Food resilience

Food Resilience is defined as the capacity of this system to provide sufficient kai security for whānau ora even during periods of shock and disruption,<sup>3</sup> so that those who live in this area can become and remain food secure, even in times of personal, household, whānau, and social instability. The end goal of a resilient food system is food security.

### 1.4.4 Food sovereignty

Food Sovereignty is defined here as the right of individuals and communities to define their own food and agricultural systems, plus

. In other words, food sovereignty encompasses both production and consumption, and it might be expressed, for example, by preferring biodynamic or contemporary conventional agribusiness growing methods, by choosing a vegetarian or omnivore diet, by seeking a specialty diet for health, taste preference, or ethical reasons, by championing food rescue or the convenience of takeaways, and so forth.

**THE RIGHT OF INDIVIDUALS  
AND COMMUNITIES TO CHOOSE  
WHAT AND HOW TO EAT**

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<sup>1</sup> We have adopted this common-sense definition because of its fit with the analytic framework in our discussion. Other approaches to food systems that inform our analysis include that of the United Nations Food Summit, including five action tracks: (1) ensuring access to healthy food, (2) developing sustainable eating habits and reducing food waste, (3) boosting nature-positive production, (4) advancing equity, including by raising incomes and creating jobs, and (5) developing system resilience (von Braun et al. 2020, pp7-8). We have also consulted an Aotearoa-based model of a food system that maps eleven major aspects of the sociocultural, economic, physical, and political food environment together with around thirty potential policy interventions (Signal et al. 2012).

<sup>2</sup> Signal et al. (2012) define food security as ‘the assured access to sufficient food that is nutritious, of good quality, safe, meets cultural needs, and has been acquired in socially acceptable ways.’ Also see Carter et al. (2010). Radimer and Radimer (2002) define food security as ‘the availability of nutritionally adequate and safe foods, and the ability to obtain these foods in socially acceptable ways.’ This second definition is relied on in an exploratory study of (Māori) household experiences with food insecurity, a study that also suggests ways that food insecurity can impact participation in social activities (Beavis et al. 2019).

<sup>3</sup> “A resilient food system is able to withstand and recover from disruptions in a way that ensures a sufficient supply of acceptable and accessible food for all” (John Hopkins Center for a Livable Future n.d.).

## 1.5 The scope of this report is a well-defined challenge statement

This report has been prepared approximately at the mid-point within MFAN’s strategy development. The purpose of this report is to respond to the original challenge—Ora Konnect’s shared vision—with a developed understanding of food system challenges. That is, what are barriers or obstacles that must be overcome to achieve Ora Konnect’s shared vision? What are the risks to the current food system, and which aspects of the system are especially vulnerable to disruption? What are the gaps in current services?

To develop a challenge definition, this report draws on multiple sources of information, reflecting a process of discovery that has included analysis of publicly available data and a literature review. More substantively, this discovery process has included meetings, a half-day workshop, interviews, community resource mapping, and additional forms of consultation. The aim has been to rely primarily on the knowledge and experience of those who are embedded within the 4412 food system as residents and community participants, as food providers, and as other service providers.

## 1.6 The purpose of this report is to request feedback

MFAN intends to share this draft mid-project report in October 2021 with other Ora Konnect participants and additional community partners in the 4412 rohe, for discussion, feedback, and refinement, with the aim of ensuring that a revised understanding of systemic challenges can be used as a well-grounded basis for developing a strategic action plan by February 2022.



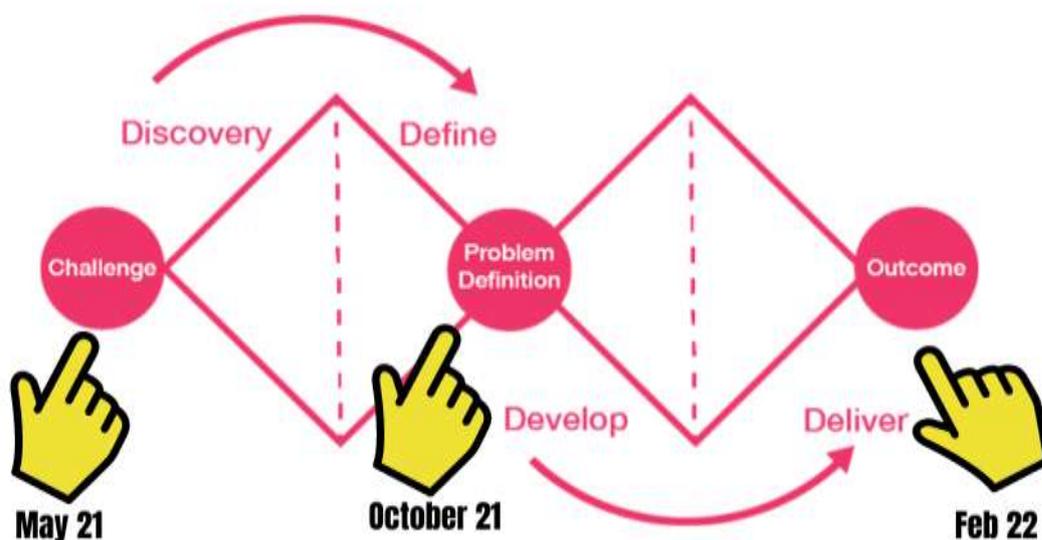
## 2.0 Methods and methodology

### 2.1 Methodology

An iterative four-step “Double Diamond” design process is being used to develop this strategy (Wikipedia 2021).

The four steps are;

1. Discovery, involving divergent or “opening up” thinking to challenge initial assumptions and extend and broaden thinking and contribute to understanding the issues.
2. Definition, involving convergent or “focusing” thinking to consolidate learning and contribute to understanding the issues.
3. Development, involving divergent thinking, in this case meaning further discovery and consultation to possible action ideas and contribute to creating the solutions.
4. Delivery, involving convergent thinking, including assessing potential solutions for feasibility, efficacy, and outcomes, in order to prove the value of particular actions as part of creating the solutions.



MFAN is adopting an “iterative” approach to this process as a way to respect and tap into the collective wisdom of the 4412. Iterative simply means that the four steps of the sequence cannot be fully separated in time. Even though one step logically follows another, each new step also clarifies the previous step. An iterative process allows us to integrate what the community already knows regardless of when that information becomes available.

There is already a considerable amount of knowledge available about the complex food systems of 4412. This knowledge is held by residents and whānau, within service providers and other organisations, and it is shared in multiple informal and formal contexts. There are also many extant community-based solutions to the challenge of kai security and resilience: the hard work of residents to earn incomes and otherwise support livelihoods, knowledge about growing and cooking food, sharing networks among neighbours, the actions of service providers, and much more. In the context of collective experience and wisdom, the four steps of the Diamond Process become an opportunity to pause “Business as Usual” and engage in collective reflection and planning: in other words, this process is an opportunity for the community to come together within a focused period of time to share knowledge, deepen understanding, and plan collaboratively and creatively.

This report shares the process of discovery (step one) and presents a current challenge definition (step two).

## 2.2 Methods

To develop this report, we have taken the following steps.

1. **Statistics.** While we are cautious of the way statistics reduce the diversity of human experience, often reinforcing deficit thinking, we have drawn on some statistical indicators as one lens to help describe the extent of the challenge. Please see Appendix A for these results. Please note we have no statisticians on our team.
2. **Literature review.** We have conducted a highly constrained review of peer-reviewed primary research. Our review is restricted to open access sources and the limited holdings of Te Pae Mātauranga o te Ao (UCOL). Additionally, to make good choices around time constraints, we have given strong preference to Aotearoa-based studies that address the intersections of food security, food resilience, and food sovereignty with poverty, hunger, insecurity—or, more positively, with community-based action. What we have learnt from the sources we have identified is integrated into this report wherever it is most relevant.
3. **Workshop consultation.** On 26 July 2021, MFAN offered a half-day workshop to members of Ora Konnect, to representatives of additional partnering organisations, and to additional parties with overlapping purposes. Part of this workshop included a participant-led SWOT analysis (identifying Strengths, Weaknesses, Opportunities, and Threats). Please see Appendix B (section B.1).
4. **Interviews.** Strategy Lead Dave Mollard has held community chats with one or more staff members from key partners in MFAN’s work. These partners include nine food providers and ten additional food-related service providers. Please see Appendix B (section B.2).
5. **Food shopping and transportation data.** Additional data has been collected to develop a picture of the time and cost of transportation from 4412 neighbourhoods to budget food shops. Please see Appendix C.

We have drawn from all of the above findings to support the discussion in Section 3

### STRENGTHS

COMMUNITY INVOLVEMENT  
STRONG INTERCONNECTED SOCIAL SERVICES  
CENTRALIZED VENUES  
SKILLS OF RESIDENTS  
DIVERSITY  
SURVIVING COVID  
MANA WHENUA SUPPORT  
ENTHUSIASM  
WHENUA  
AROHA

# 4412 KAI RESILIENCE STRATEGY

*Manawatu Food Action Network July 21 hui*

### OPPORTUNITIES

NETWORKING  
COMMUNITIES WORKING TOGETHER  
COMMUNITY WEALTH BUILDING  
PEOPLE WANT CHANGE  
TO BE PART OF A COORDINATED COLLECTIVE PROCESS  
ESTABLISHED GARDENS  
BOOSTING CONFIDENCE  
YOUTH  
TIME RICH

### WEAKNESSES

HIGH DEPRIVATION  
GANG CULTURE  
FEWER SERVICES  
LOW QUALITY HOUSING  
LOW SKILL BASE  
LACK OF INFORMATION ABOUT SERVICES  
TRANSPORTATION

### THREATS

GOVERNMENT POLICY CHANGE  
AGENDAS  
CHANGE IN LAND USE  
IN FILL HOUSING  
DEPENDENCE ON VOLUNTEERS  
FLOODS  
PANDEMIC  
REMOVING CONNECTIONS  
HOUSING CRISIS  
DRUGS/ALCOHOL

## 3.0 Discussion of findings

This section of the report presents and discusses the “heart” of our findings: the challenges, barriers, and risks associated with ensuring sufficient quality, nutritious food is available, accessed, and used by residents of 4412.

In theory, there is currently sufficient available food for residents of 4412. Palmerston North is surrounded by an abundance of food from nga hau e wha. The rich vegetable growing soils of Horowhenua to the south, the Tasman Sea to the west serving up kai moana, the dairy producing paddocks of Taranaki to the north and the orchards and vineyards of Hawkes Bay and Wairapa to the East. Besides these primary industries, Palmerston North is the Pataka Kai of the lower North Island with several large food distribution centers using the city as a hub to transport hundreds of truckloads of food across the motu daily. Much of the region’s vegetable growing serves national markets, with pastoral farming primarily serving international export, nonetheless, these combine to surround Palmerston North—including 4412—with abundant food.

The trickier challenge is how availability intersects with access and use—the barriers to making theoretically available food usefully available within households. Moreover, food security does not exist in isolation. Signal et al. (2012) note that food security is a ‘wicked problem’—that is, a highly complex challenge with multiple causes, a challenge whose features keep shifting and developing, requiring multiple types of interventions. No single intervention and no single

organisation can meet the challenge. Whatever action plans are adopted must also adapt to shifting conditions.

In 4412, the insights of community partners (see Appendix B) indicate the extent of this system complexity. Food security issues aren’t limited to what a system theorist might call the “control determinants” at the boundaries of the food system, which are especially critical system parameters such as income and financial situation. The complex tangle of food insecurity also includes mental and physical health, housing insecurity, gang culture, drug and alcohol addiction, education and skill levels, information and communication networks, the policy environment, broken families, land alienation, intergenerational impacts of all these challenges, and other intractable challenges. The current and rapidly escalating housing crisis, the COVID-19 pandemic, and economic recession are additional stressors on the current food system.

**NO SINGLE INTERVENTION  
AND NO SINGLE  
ORGANISATION CAN MEET  
THE CHALLENGE**

Conversely, food provision is only one contribution to the holistic weave of whānau ora.

This discussion acknowledges this larger complexity, while also highlighting four major considerations specific to the food system:

1. Current food availability and access challenges (section 3.1),
2. Risks to food availability and access (section 3.3), and
3. Barriers to using food (section 3.3),
4. Intergenerational dimensions of the food system (section 3.4).

## 3.1 Current food availability and access challenges

Kai flows into homes through four streams:

1. Buying food;
2. Receiving free food from service organisations and other public sources;
3. Sharing food within extended whānau and other private social networks; and
4. Growing food at home or in communities.

### 3.1.1 Purchased food

The most significant single dimension of the kai security challenge in 4412 is the financial constraints residents face around purchasing enough quality food. In a household-based study of Aotearoa food security, Signal et al. (2012) found that two of the three most effective ways to intervene in complex food systems and increase food security are by increasing the money available to households or by decreasing the cost of healthy nutritious food (p. 87). Many of the community partners consulted for this report similarly stressed financial barriers to food security, including not only insufficient incomes but entanglements of debts, benefit cuts, the relatively high cost of healthy food, employment challenges, and additional financial challenges associated with poverty (Appendix B).

Census data and national-level government surveys provide supporting evidence for the insights of community partners, showing median incomes and median rents in 4412 that leave far too little money to purchase food and meet other basic costs of living. One full-time median income, for example, is insufficient to pay median rent. These same data sources give some ground to think that around 10,000 people, about one third of those living in 4412 neighbourhoods experience some form of food insecurity (appendix 1).

Financial constraints are likely to affect food sovereignty—self-determination with respect to food—and health and nutrition even before affecting whether there’s enough purchased food to survive. National food price indices, for example, indicate that the costs of fresh produce have been rising over the last two years at about three times the rate as rises in the cost of other foods (Appendix A, Table A1). A review of research from English-speaking countries, including New Zealand, concluded that almost all research has found that “healthy foods are more expensive than unhealthy foods, and, as a percentage of household income, a basket of healthy food costs more for low-income than for high-income families” (Carty et al. 2017, p.138). In general, budget shopping can mean accepting that more food choices must be made based on price rather than on the range of other criteria people might rely on—taste, convenience, cultural considerations, health, freshness, dignity of the source, and so forth.

**HEALTHY FOODS ARE MORE  
EXPENSIVE THAN UNHEALTHY FOODS**

Budget shopping also requires planning and transportation costs in time and money. The nearest 4412 neighbourhood shop rarely has the best prices. Appendix C illustrates the transport costs for budget shopping:

a minimum of \$2.40 in bus fares and—at minimum—a quarter of an hour each way to and from a single one of the budget shopping places from a central 4412 neighbourhood location. A return trip to Chilly Box from the Highbury or Awapuni Shops can readily take two hours plus time spent shopping, or even longer if the bus timetables do not perfectly suit. Bus trips to Pak’nSave from 4412 locations are between these two extremes. Those who have the

means to drive can cut down on shopping time, and they are also able to carry groceries more easily: even so, budget shopping requires visiting more than one location with costs to time as well as vehicle costs.

One additional challenge for budget shoppers is accessing the information on where, when, and how to access budget foods. For example, it is possible to reduce food budgets and increase food nutrition by purchasing seasonal produce and preserving uneaten foods, yet this assumes sufficient time and energy, equipment and storage space, information, knowledge, skills, and experience. Information is also a challenge for those wishing to access free food.

### 3.1.2 Free food from service providers and other public sources

Free food is accessible to 4412 residents from at least nine service providers who provide food parcels, pātaka kai, served meals, and free food shopping. These providers include Te Whare Koha, Legacy Church, Te Pātaka Kai 4412, St. Vincent de Paul, Te Waka Huia, The Methodist Social Services, The Luck Venue, The Salvation Army, and Just Zilch. Collectively, these providers meet demand for free food 3,600 times each week (see Appendix A, Table A2). By policy, one of these providers—Just Zilch, which provides free food between 1500 and 2,000 times each week—does not collect data on the extent of food insecurity experienced by shoppers. The Luck Venue estimates that seventy percent of those they serve are food insecure, and all other venues estimate that one hundred percent of those they serve are food insecure. From this we have evidence that about 1,000 distributions of free food weekly clearly address food insecurity, with a further 2,500 distributions that are potentially connected to food insecurity. In many cases, these food parcels or free food shopping events are serving multiple members of a family or household.

**IT TAKES A LOT OF TIME  
AND EFFORT BEING POOR**

*Jodie Parker - Te Whare Koha*

There is reason to think that met demand for free food is less than actual demand—that these services are over-subscribed.

For example, two of the food banks find it necessary to restrict how often food parcels can be received (Appendix A, Table A2). Another data point is the routinely oversubscribed Te Whare Koha shuttle service, which offers free transportation from Highbury shops to the free food supplier Just Zilch. We anticipate that many of our partners have further evidence of unmet demand for free food services, and we welcome input. The national context also gives evidence of steeply rising demand for food support and reason to anticipate additional food insecurity (Barber et al. 2021).

Availability and transport are only two of the factors affecting whether free food is accessed. One of our partners indicated that shyness about asking for help can be a barrier, particularly where cultural difference is involved. Carty et al. (2017, p.144) have found that whether people access free food can depend on the perceived attitudes of providers: “food assistance from charitable organisations was seen as benevolent and altruistic, whereas, the bureaucracy of the government agency providing financial assistance was viewed as uncaring, impersonal, tedious and confusing.” Insufficient information about free food options is yet another barrier, along with all the other intersecting challenges of daily life that have been discussed already—health challenges, lack of time, and so forth.

Yet another type of barrier to accessing free food arises from limits experienced by the food providers themselves. For example, Just Zilch, reports that their current premises are too small for current demands and anticipated future growth, and Te Whare Koha seeks additional community shuttle drivers and a larger van.

### 3.1.3 Food from private sharing networks, including whānau

Data provided for this report did not include any information about informal food sharing in 4412 outside of households. Such sharing can be an important part of food cultures and food system resilience. For example, in an exploratory study of Māori household experiences of food insecurity, Beavis et al. (2019) discussed how study participants valued having enough food to demonstrate manaakitanga to guests, and they also discussed the commitment of intergenerational families to support one another. Even when some members of this small group of

study participants received free food from service providers, they sought mana-enhancing ways to contribute generously to their community in return, for example by serving their church.

This type of sharing is a cultural strength and enhances resilience. Beavis et al. (2019) also found that some cultural expectations around food and food sharing could contribute to food insecurity. When food was insufficient to meet social expectations, it affected hauora, as when one of the study participants found herself unable to provide a special meal for her children's birthdays. Expected food koha and bring-a-plate gatherings are additional situations that can carry strong expectations about having enough food to share.

### 3.1.4 Food grown and foraged at home and within community spaces

Another source of food is home-grown and community-grown food. A basic challenge here is the disconnection of people from the land, due to colonisation and land alienation for tangata whenua, and—for people of all ethnicities—due to additional issues associated with poverty and social inequity. Co-occurring with this disconnection to the land is disconnection from cultures of food growing and the loss of vital skills necessary to forage, farm, and garden.

Those who wish to reverse processes of land alienation face several challenges in addition to the disruption of food cultures and the loss of associated knowledge and skills. By some estimates, close to half of those living in 4412 are renting, and levels of social housing are also disproportionately high in 4412 relative to other areas of Palmerston North (Appendix A, section A.3). Tenancy agreements can create barriers to gardening in addition to the general instability associated with renting.

Another public source of food is community-grown food, including community gardens and community fruit trees. Partners identified barriers including ongoing vandalism to public fruit trees. Those wishing to forage must not only have the know-how; they must also have access to an appropriate foraging location. Loss of biodiversity and pollution present challenges here. For example, the Mangaone—a traditional mahinga kai for Rangitāne—flows through 4412, yet this once-abundant stream has been channelised into a highly polluted urban drain.

For gardening, community members are needed to support school māra kai and other community growing. Another challenge is that community growing spaces are also subject to alienation due to land use changes or policy changes. For example, Palmerston North is now supportive of community gardens and fruit and nut tree plantings; just over a decade ago, establishing public food growing spaces required considerable persistence and advocacy. Council resistance was reportedly due more to unpreparedness than due to unwillingness. There is reason to think PNCC's current openness to food gardening will continue for some time, yet relationships remain tricky and there is also a need for council to balance multiple uses of public space. One example of the resulting challenge is the relocation of Crewe Crescent gardens to Awapuni in response to development.

## 3.2 Use

Partners consulted for this report noted multiple potential barriers to using food once it was accessed. Food parcels might contain food unsuited to a family's needs, for example if there were dietary constraints from health or preference, cultural or religious requirements, or other factors affecting home food cultures. Partners also pointed to the need for knowledge on how to cook and use food.

Health and nutrition research provides further insight into barriers to using food, especially barriers to using produce. A New Zealand study of ten households with children (five of which were low-income) investigated factors that influence eating fruit and vegetables once barriers of access and cost are removed through the delivery of sufficient free fruit and vegetables to meet recommended dietary intakes for the household for a week (Carty et al. 2017). The study found that—even when produce was free and delivered direct to households—all of the following factors still shape whether that produce is in fact used.

- Life experience. Early life experiences affected how likely participants were to use produce. These experiences “instilled values, taste preference and knowledge and skills (especially in relation to food storage, preparation, gardening and financial coping)” (p.141).
- Relationships among household adults. Relationships between partners and other adults in the household affected the use of food. It mattered whether all adults supported eating produce, and it also mattered how competing desires were negotiated.
- Children in the household. The presence of children in the household made it more likely that participants would use produce, because adults often gave children’s health higher priority than their own. In keeping with this, “researchers found that using child-focused strategies often encouraged adult behaviour change” (p.143).
- Household size. Larger households were more willing to spend time preparing meals, and therefore more likely to use produce.
- Household labour. Household labour shortages led to reduced levels of produce use. For example, sole parents, or people affected by physical or mental health problems, were less likely to use produce even when they wished to do so.
- Personal motivations in general. Complex personal motivations affected study participants’ use of produce. These motivations included “health, weight control, food enjoyment and social acceptance” (p.142).
- Personal motivation to avoid food waste. The study found the single biggest personal motivation that supported participants’ food use was a desire to avoid food waste and associated guilt (p.142).

This desire to avoid food waste warrants larger discussion. Food waste is found in many locations within 4412: in households, in school lunch programmes, on community fruit trees, and in markets. Some of this potential waste stream is diverted by Community Fruit Harvest and Just Zilch—the latter reports giving away 2000kgs of rescue food daily. More waste remains.

At the household level, waste is affected by access to refrigeration, freezers, and other forms of appropriate storage. The use of fresh food is also affected by how regularly residents have time to shop. Some of the participants in the study by Carty et al. (2017) reported they avoided buying fresh fruit and vegetables because of their desire to avoid waste.

### 3.3 Food availability, access, and systemic risks

The previous discussions of food availability, access, and use imply multiple potential risks to food security, especially at the household or neighbourhood level. Our community partners have identified a wide range of risks, including risks that cross the borders between 4412 and the larger food system. These include government policy changes, agendas, changes in land use, in-fill housing, dependence on volunteers, floods, pandemics, removing connections, housing crises, and drugs and alcohol (see Appendix B, section B.1.2). This section of the report focuses on the dimensions of these risks that are shaped by the wider food system.

At the macro-level, some risks have become distressingly familiar:

- The risks of viral pandemics such as COVID-19
- The risks of general economic recession with disproportionate impacts on those who are already struggling
- The risks of system disruptions from events like earthquakes or floods
- The risks and insecurities associated with changes of government and changes of policy

To the extent that global environmental conditions worsen (for example, topsoil loss, biodiversity loss including the loss of food diversity, climate change and increased drought and especially flooding in Manawatū–Horowhenua), then macro-level risks to food supplies also increase. Additional types of resource depletion also pose risks: global peak phosphorous and its impact on soil fertility within the conventional agribusiness model, global peak oil and its impact on food transportation and food prices, depletion through overharvesting of renewable food stocks such as fish populations. Pollution and some methods of food production increase health risks and decrease the nutrition within the

food supply. Given that inequity is especially extreme when it comes to the distribution of healthy food, this is likely to add to the already inequitable burden of chronic health problems.

At another level, reliance on charitable organisations for free food underscores risks associated with potential organisational instability: funding decreases, scarcity of volunteers or qualified workers, or other organisational changes that have flow-on impacts for food security outcomes. There are risks to informal community networks, also, especially if they rely too strongly on a single kuia, or one or a few community leaders: these social risks underscore the essential importance of education and skills transfer, including informal forms of social mentoring and the importance of fostering a co-leadership culture. These risks also sit within the larger social context of growing inequity, which puts increasing pressure on social networks and local service providers.

The following are a few of the more specific ways the local food system is at risk.

- The majority of Aotearoa's grain for human consumption is imported. Further, 2012 data indicated that only fifteen percent of the relatively small amount of grain grown nationally is grown on the North Island (Stevens 2017). If grain imports decrease, what types of local grain growing or local crop substitutions are most likely to address resulting gaps in 4412 diets?
- The global food system's tendency to geographically separate food producers, food processors, food distributors, and consumers creates challenges for those wishing to take local steps to reduce risks. Anecdotally, this region might be especially undersupplied with food processing and preserving equipment, such as canneries. This assumption bears further inquiry. A related question is the extent to which the local community lacks the equipment, knowledge, personal time and resilience necessary to increase local food preservation and storage if needed. In other words, what need is there to renew a food preserving culture, and what would be required to do so?
- In local food systems without sufficient long-term storage, the period around spring equinox is often considered the 'starving season' because autumn crops such as pumpkins or kumara are more likely to be exhausted while early summer crops are yet to emerge. One local example of this is the relative abundance of summer fruit available through Community Fruit Harvesting and the current coordinator's desire to locate more 'off-season' harvestable free produce. Even when global systems do not fail, local, fresh produce is disproportionately important to nutrition. There's a need to be more strategic about planting for year-round neighbourhood-based produce harvesting.

### 3.4 Intergenerational challenges

We wish to highlight one final aspect of the kai security challenge: intergenerational dynamics. We have already noted core issues with land alienation and disruptions in intergenerational skills transfer—together these are part of a larger issue with the disruption to holistic food cultures that support whānau ora. Looking forward, the food whānau access and use today has long-term impacts on children's health and well-being, as well as on their food preferences, knowledge, and habits. In a 2019 report, the Aotearoa-based Child Poverty Action Group noted that childhood experiences of food insecurity and poverty do have diverse outcomes, with some individuals responding to childhood challenges with high agency, yet negative "impacts can include increased risk of health-related social problems, such as substance use, anxiety, and behaviour disorders; nutritional deficiencies and increased likelihood of diet-associated chronic diseases; negative impacts on capacity for learning; and development problems," plus vulnerability to malnutrition and obesity, contributing to "children's poor health outcomes throughout their life course" (Graham 2019, p.9).

In short, today's food availability, access, and food issues not only emerge from dynamic processes that extend beyond individual lifespans; what happens now will have impacts beyond individual lifespans and certainly beyond the reach of many funding and policy-driven outcomes measurements, but though early indicators of change might also still be measurable. The experiences of children and youth are likely to be most important to the long-term processes of eradicating food insecurity within the context of the wicked social problems in which food systems are entangled.

## CHILDREN'S POOR HEALTH OUTCOMES THROUGHOUT THEIR LIFE COURSE

### 3.6 Lockdown challenges

Palmerston North has been relatively well insulated for many of the negative aspects of the global pandemic. Having a very small tourist industry, a large logistics industry, a large military community and being the hub for several large infrastructure projects has propped up the local economy. The current unemployment rate is 4% (National average 4.7% - Infometrics July 2021), housing prices rose 34% in the last 12 months (Quotable Value's June 21 Quartile Index). The rise in housing prices has been positive for homeowners but has put additional stress on renters

There is no empirical evidence on how lockdowns have affected the 4412 community, but community workers agree that it has had a negative effect on the most at-risk whanau. Astryr Halligan a Social worker for Raukawa Whanau Ora has seen a marked increase in housing allowance applications due to the extra expense of having children at home. These expenses include food (at school the kids get breakfast at lunch provided and at home the kids snack more due to boredom), heating and internet expenses. Laura Banks from Methodist Social Services agrees that these are contributing factors to higher stress levels in the home which makes it harder to deal with ongoing challenges

Linda Lake from Te Awahou Kai Community Trust has seen a huge increase in demand for their services due to the expense of kids at home, masks claustrophobic, fear for immune compromised people, and confusion over Covid level restrictions.

### 3.7 Community Assets

The 4412 community has an abundance of resources that will be the foundation of moving from food insecurity to food resilience and potentially food sovereignty.

4412 is blessed with green space, waterways, marae, churches, and community centres but the real taonga of the 4412 is the people. He tangata, he tangata, he tangata.

It's the kaumatua, full of wisdom which they pass on to their mokopuna, the Pacifica communities with their strong sense of connection, the refugee families that truly understand that Aotearoa is much closer to paradise than their country of birth. 4412 has strong schools that provide more than just a formal education, but a place to grow holistically. 4412 has networks of people that are linked through culture, sports, activities, passions and beliefs, It's the mana whenua who are committed to positive outcome, not just for their own iwi, but for everyone who lives within their rohe.

4412 has an abundance of community/social governmental groups employing an army of frontline workers showing manaakitanga to whanau to help them overcome their challenges.

Lockdowns, while being a cause of stress has also been a "call to arms" for the residents of 4412, they have checked on their neighbours, provided food and other essentials to the people in their networks and advocated for those that do not have strong voices.

Governmental agencies including Kainga Ora, The Police, the PNCC, Corrections, the Ministries of Education and Social Development and the District Health Board are moving from a needs-based philosophy to a whanau support based philosophy. They are starting to acknowledge that solutions need to be led from the grassroots rather than the top down.

The success of the following initiatives are blueprints for further food related projects.

- Awapuni Community Gardens
- Just Zilch Food Hub
- Te Whare Koha free shuttle
- Highbury Whanau Centre Rangitahi programs
- Let's Grow Highbury meetings
- Awapuni Crop Swap
- Te Pataka Kai 4412
- Growing Gardens and Communities
- Legacy meals
- Sharing tables at community libraries
- Whanau run te pataka kai
- Plant to plate in-school programs
- 4412 School's maara kai and orchards
- Grant Kitchen and his Maori Kai project
- YMCA learning garden
- The Kai Alliance, a group of food banks, free stores, PNCC, MSD, Civil Defence and Iwi have created a positive environment and strategy for dealing with the food issues in a large-scale community crisis.
- PNCC fruit and nut tree program
- PNCC community gardens & berm gardens strategy
-

## 4.0 Conclusion

This report has contributed the following discussion points.

- The challenges of establishing kai security, resilience, and sovereignty is highly entangled with other aspects of the challenge of developing whānau ora.
- 4412 is surrounded by agricultural producers, yet social inequity and other challenges mean this abundance of food does not translate to kai security for whānau.
- Many 4412 households have insufficient money to meet all of their basic needs.
- A median income in 4412 is insufficient in some neighbourhoods to pay for median rental costs.
- Money is only one of many factors impacting food access. Others include time, energy, physical and mental health, and other factors that affect personal and whānau resilience.
- Transportation to budget food outlets requires time, planning, information, and additional resources, such as physical capacity and bus fares or the complex resources necessary to drive to a shop.
- Budget shopping erodes choice and food sovereignty.
- Very rough data-based estimates suggest that 10,000 people--one-third of those living in 4412—face some degree of food insecurity.
- Nine free food providers serving 4412 residents collectively distribute food up to 3,600 times weekly, however, there is evidence they do not meet full demand.
- There is evidence that more free food could be supplied, perhaps especially through stepped-up food rescue efforts. There are insufficient resources available to community organisations that distribute food. In general, the information provided to prepare this report did not include whether community organisations were unable to meet demand and, if so, how additional resources might support them. This type of information could contribute to a better understanding of community challenges.
- Fresh produce, and healthy food more generally, is especially costly and challenging to access and use.
- Not all food assistance is equally respectful of the mana of those seeking help, and shyness and cultural differences can be a barrier to seeking support.
- Not enough is currently known by MFAN to make conclusions about how informal 4412 networks contribute to kai security.
- When families have insufficient food to contribute in ways that meet cultural norms and social expectations, they are more likely to experience food insecurity and/or to stop participating in social activities.
- Food cultures have been disrupted, including intergenerational skills transfer and practices of growing, preserving, cooking, and eating food.
- By some estimates, close to half of 4412 residents live in rentals. Tenancy agreements and housing instability are barriers to home food growing.
- Food grown in community spaces is vulnerable to a myriad of factors, including vandalism, land use and policy changes, insufficient community participants to tend the food, and pollution of traditional foraging locations.
- Not all available foods are equally suitable to all diets. Dietary choices are influenced by childhood and other life experiences, relationships within households, a wide range of personal motivations including desires including desires to raise healthy children and to avoid food waste, cultural requirements, and taste preferences. These factors are indicative of why self-determination with respect to diet is a challenge that cannot be described through calorie counting alone.
- 4412 sits within a larger food system that faces its own risks, for example risks arising from environmental problems, social inequity, and supply chain failures.
- Particular risks associated with potential supply chain disruptions include insufficient nationally-grown grain, insufficient regional preserving facilities, and insufficient early spring produce.
- Childhood experiences have myriad long-term impacts, with child poverty and food insecurity contributing to reduced outcomes for generations.

- 4412 is full of resources that can be leaned on to establish solutions.

MFAN welcomes feedback, discussion, and further information about kai security, resilience, and sovereignty challenges experienced by 4412 residents. We anticipate many of our partners will see gaps in our knowledge, or corrections we should take on board. We acknowledge that 4412 residents who experience food insecurity have not been surveyed or interviewed directly for this report, yet we also have considerable respect for the direct client experience of the service providers with whom we did consult. MFAN acknowledges our need for our partners: Our collaborative kaupapa—whānau ora and kai security—is larger than all of us put together.

E kī ana,

I orea te tuatara ka patu ki waho.

Tēnā koutou, tēnā koutou, tēnā koutou katoa.

Manawatū Food Action Network

Lisa Christiensen Helen Lehndorf Dave Mollard Sharon Stevens



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\* This list includes sources referenced within report appendices.

## Appendix A: Quantitative deprivation measures for 4412

This appendix uses NZDep2018 and available quantitative measures to make very rough estimates about levels of relative deprivation in 4412 (section A.1), food insecurity (section A.2), housing inequity as indicated by renting and social housing (section A.3), and income challenges faced (section A.4). The analysis examines the following neighbourhoods: Awapuni, Cloverlea, Highbury, Takaro, Westbrook, and West End. The border of these combined neighbourhoods is not entirely identical with that of 4412, however, the overlap is high. There are affluent areas in 4412 such as Riverdale and The Racecourse, but we focused on the statistics for the areas with the highest deprivation to get a clearer understanding of what our community faces.

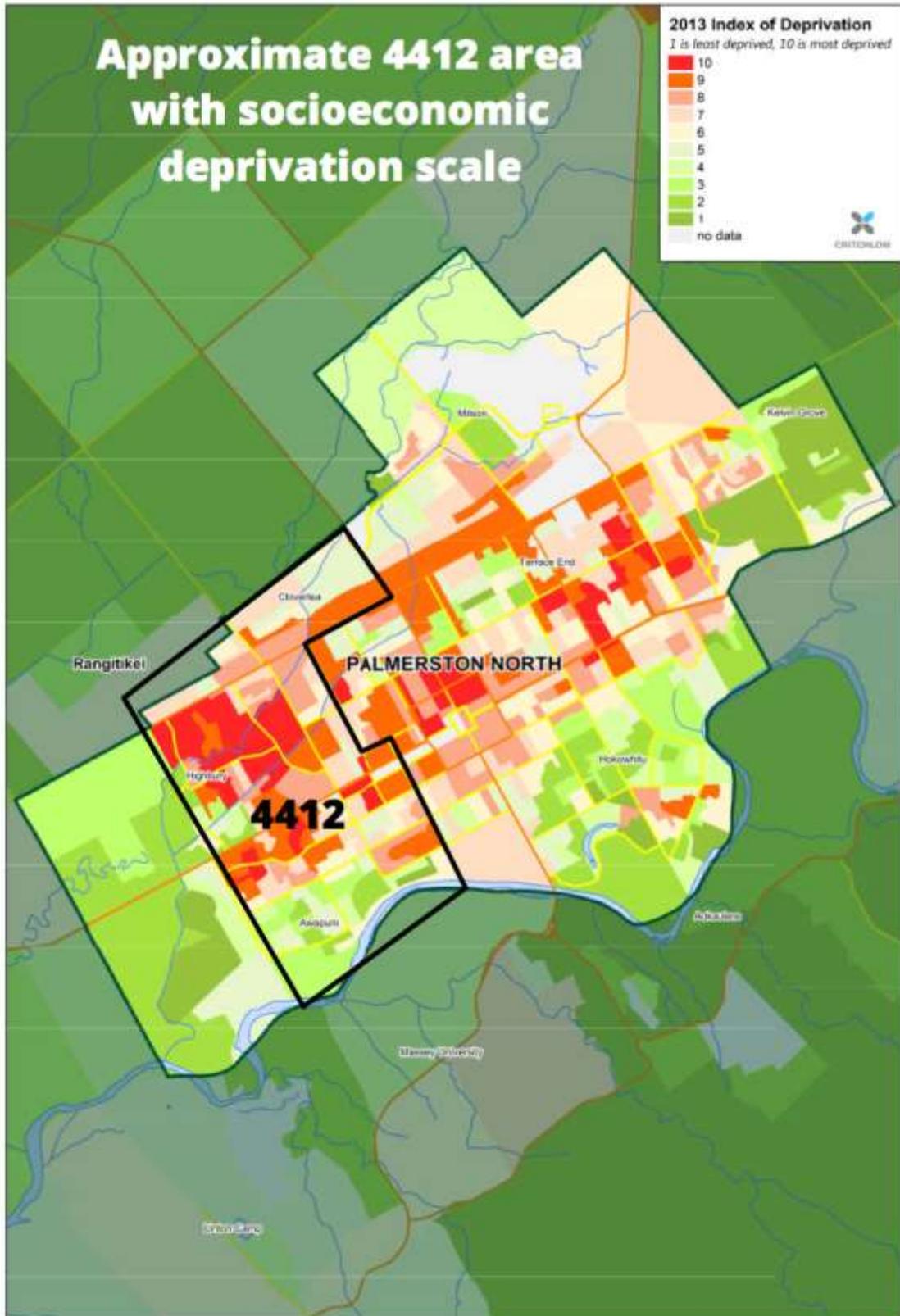
We estimate:

- Around 10,000 4412 residents experience kai insecurity.
- 4412 service providers collectively meet demand for free food 3,600 times weekly.
- Accessing fresh produce is even more difficult and costly than accessing enough food—significantly so.
- Almost half of 4412 residents are renters, or roughly 14,000 people.
- About sixty percent of Palmerston North’s social housing through Kāinga Ora is located in 4412.
- Many 4412 residents lack sufficient personal income to meet their basic needs.

We share these statistic-driven conclusions as a very rough indicator of the size of the kai Resilience challenge, yet we acknowledge the significant and inherent limitations of our statistics-based and deprivation-oriented approach (see section A.1.3). We also acknowledge limits to the information we have available and considerable imprecision in our estimates, though we are reasonably confident in their general accuracy to an order of magnitude (section A.4). We welcome additional information, including more accurate or more precise information—from any of our partners.

### A.1 Census-based indicators of deprivation in 4412

Ora Kōnnect, Ora Kōnnect’s Kai Security Squad, and this MFAN report all focus on neighbourhoods within Palmerston North’s 4412 postal code. 4412 has been chosen, in large part, because this area receives high scores on the New Zealand Index of Deprivation (NZDep)—meaning that this area has been identified as “most deprived”. See the figure below. This report relies, primarily, on the most recent 2018 Index of Deprivation, “NZDep2018” (Atkinson et al. 2020).



### A.1.1 How the New Zealand Index of Deprivation defines deprivation

NZDep2018 defines deprivation, operationally, through New Zealand Census data chosen to measure communication, income, employment, qualifications, home ownership, support, living space, and living condition.

These abstract qualities are measured through the following indicators:

- People with no access to the Internet at home;
- People aged 18-64 receiving a means-tested benefit;
- People living in households with an income below a certain threshold (this threshold varies to account for information about who lives in the household);
- People age 18-64 unemployed;
- People age 18-64 without any qualifications;
- People not living in their own home;
- People aged <65 living in a single parent family;
- People living in homes below a bedroom occupancy threshold (this threshold varies to account for household differences);
- People living in dwellings that are always damp and/or always have mould greater than A4 size (Atkinson, Salmond, and Crampton, 2020, p.9).

These indicators are rank-ordered, so that #1 is more heavily weighted than #2 and so forth.

### A.1.2 Reasons for relying on NZDep2018

Ora Konekt and MFAN are taking a strengths-based approach to 4412, questioning measures that focus on deprivation. MFAN accepts NZDep2018 as an appropriate *starting* point for a few reasons.

- **Shared purposes.** NZDep2018—like other NZ Deprivation Indices since 1991—has been developed to support “resource allocation, research, and advocacy” (Atkinson al. 2020, p. 16). Deprivation indices have long been used to decide where funding and other resources are most needed, to serve as a descriptive foundation for research and other forms of learning, and to support service advocacy. These purposes overlap with some of MFAN’s purposes.
- **Proportional or ‘good enough’ understanding for a starting point.** Much of the financial support for the 4412 Kai Strategy comes from Palmerston North City Council, which serves a more extensive area than 4412. MFAN’s intended reach is even wider, potentially someday including the entire catchment of the Manawatū River Region. Both PNCC and MFAN anticipate effectively applying learning from the 4412 Kai Strategy in other areas. This expectation lowers the stakes for choosing an initial focus area. Relying on an existing deprivation measure similarly reduces the effort and expenditure necessary for choosing a starting point, so that costs and benefits are kept proportional to one another.

### A.1.3 Limitations of NZDep2018

When relying on Census data, some data manipulation is always required to address challenges within the data set, such as missing information due to incomplete or unreturned forms (Atkinson et al. 2020, pgs. 21-24). More substantive cautions relate to the basic nature of the NZDep2018.

**Limit 1: Census data is only a ‘proxy’ for what it tries to describe.**

‘Indicators’ are just that—an indication, or a proxy, for the lived experience of deprivation (p.17). For example, indicator #7 (people aged <65 living in a single parent family) is relied on as the sole indicator to answer the more holistic question, do people have support?

**Limit 2: The NZDep2018 describes an area, not the individuals or the diversity of people within that area.**

The measures within NZDep2018 are based on averages of proxy data (p.17). This involves multiple inferences and generalisations. The resulting measure does not describe any individual or any individual household.

**Limit 3: NZDep2018 cannot be used to measure outcomes.**

NZDep2018 measures are designed to compare different areas so that, *by definition*, 10% of the measured areas *must* be ‘most deprived’ relative to the other 90% (p.18). It is therefore logically impossible to eliminate deprivation throughout the whole of Aotearoa as measured by NZDep2018. Further, changes in relative deprivation might be due to worsening conditions elsewhere rather than improving conditions in the focus area. Finally, because data collection and analysis methods change from census to census, comparisons between different NZDep indexes (e.g. NZDep2013 and NZDep2018) are inexact. NZDep cannot be used to measure outcomes.

**Limit 4: A household-level analysis does not capture types of connectivity that are central to food resilience.**

According to the definition of a “resilient food system” relied on within this report, a resilient food system is connected and relies on diverse solutions to withstand disruption. The NZDep2018 is arguably suited for answering the question, can people in a household buy food for their household at a shop? This question is quite narrow relative to this report’s focus on a *resilient food system*, which takes a broader perspective on all the ways food might be available and accessed for use—not just through money-based shopping. Depending on attitudes and lived experience, some people living within 4412 might experience resilience, strength and personal resourcefulness by growing food or by accessing free food (for example); they might experience well-being and security by participating in sharing networks such as extended families or neighbourhood friendships.

**In summary, NZDep2018 does not describe whānau ora, kai security, kai resilience, or kai sovereignty.** NZDep2018 and Census data more generally are robust enough to focus attention on 4412 and even on particular features of 4412. Further strong inferences about the lived experiences of 4412 residents are not supported.

Similar limitations apply to estimates and descriptions in the sections below.

## A.2 Quantitative estimates of food insecurity in 4412

### A.2.1 Estimated numbers affected

MFAN does not have available any direct statistical measures of current food insecurity within 4412. Information gathered in a 2015-2016 by the New Zealand Ministry of Health (MoH) indicates that, at the time of the survey, “almost one in five children lived in households with severe-to-moderate food insecurity” (NZ Ministry of Health 2019, p.IX). The report also indicated that levels of child food insecurity are higher in the most deprived neighbourhoods, so that we can reasonably infer that in the vast majority of 4412—in those areas of 4412 that score high on the NZDep2018—more than 20% of children face moderate to severe food insecurity. At the time of the 2018 Census, 29,000 people lived in Awapuni, Cloverlea, Highbury, Takaro, Westbrook, and West End combined: of these, 6,000 were children. A very rough estimate might be that considerably more than 1,200 children in these neighbourhoods were food insecure in the years leading up to the COVID-19 pandemic.

Were 3,000 to 6,000 adults (give or take) also food insecure in 2018? The MoH report focused exclusively on children. We can infer that adults within these households and some additional adults are affected by food insecurity. An analysis based on a 2002 version of the same MoH survey indicated that 11% of all those living in New Zealand Index of Deprivation (NZDep) areas 7 and 8 and 20% of those living in NZ in NZDep areas 9 and 10 “were more food insecure and more likely to use special food grants or food banks because of lack of money compared to those in less deprived neighbourhoods” (Carter et al. 2010, p.2). NZDep areas 7-10 includes the vast majority of 4412, as shown in Figure A.1, with the notable exception of parts of Awapuni South.

MoH report authors predicted that food insecurity figures would only increase (Carter et al. 2010, p.7). Subsequent events have provided evidence confirming their predictions. For example, we know that COVID-19 has changed the social landscape in ways that are exacerbating many existing challenges and inequities. National food prices increased by 4.1% in the year ending June 2020, and by 2.8% in the year ending June 2021.

Fruit and vegetable prices increased *substantially* more during these same periods: by 10.0% in the year ending June 2020 and by 9.6% in the year ending 2021 (See Table A1) (Statistics New Zealand). These disproportionate increases in produce costs could readily lead to decreased nutrition within lower-income households.

Table A1. Annual national food price increases

<u>Year ending</u>	<u>Consumer price index</u>	<u>Food price index</u>	<u>Fruit and vegetable prices</u>
June 2021	+ 3.3 %	+ 2.8 %	+ 9.6 %
June 2020	+ 1.5 %	+ 4.1 %	+ 10.0 %
June 2019	+ 1.7%	+ 0.5 %	- 8.8 %
June 2018	+ 1.5%	+ 0.2 %	- 4.6 %
June 2017	+ 1.7%	+ 3.0 %	+ 9.3 %

There are a multitude of additional indications that the COVID-19 pandemic has coincided with rapidly escalating challenges to kai security. For example, the Salvation Army’s annual *State of the Nation* 2021 report indicates that, in spite of government responsiveness to the COVID-19 crisis, the poorest and most vulnerable in the community have suffered disproportionately. In response, The Salvation Army distributed almost double the number of food parcels in 2020 relative to 2019. They reported that “food hardship grants from Work and Income (WiNZ) have followed a broadly similar [doubling] trend” (Barber et al. 2021, p.4). The Salvation Army’s policy analysts warn these impacts are likely to be long-lasting, with the full negative impacts of COVID-19 not yet apparent. Further, “the impacts are also very unequally shared and create pressures that seem likely to increase inequalities of income and wealth” (p.4). Within the Manawātū region and 4412, we know anecdotally that food banks and other free food providers in our region have experienced similar dramatic upswings in demand for food in response to rising hardship. The government’s July 2021 increase to the main benefit, adding \$20 per week per adult, can be understood as another indication that beneficiaries across-the-board are facing additional challenges.

From the above information, we could infer that the number of people in 4412 who would benefit from additional kai security support is around 10,000, approximately one-third of the population. We can further conclude that the need for support accessing healthy and nutritious food affects even more people than the need to access appropriate quantities in food. These are incredibly rough estimates, and they do not indicate the diversity in experiences of food insecurity, for example whether it is occasional or chronic, mild or severe.

### A.2.2 Met demand for free food from 4412 service providers

Another rough indicator of food insecurity is current supplies in food support. Table A.2. indicates food providers who are based in 4412, or who provide services to residents of 4412. The table also provides staff answers to the following questions:

How many people do you serve per week?

What percentage of these people are food insecure?

Table A2. Free food services provided each week

Service provider	People served per week	Percentage of those served who are food insecure	Additional notes, if any
Te Whare Koha	50	100%	
Te Pātaka Kai 4412	80	100%	
St. Vincent de Paul	50	100%	Clients restricted to one food parcel every eight weeks
Te Waka Huia	80	100%	
The Methodist Social Services	240	100%	Clients restricted to one food parcel every eight weeks
The Luck Venue	250	70%	
The Salvation Army	300	100%	
Just Zilch	2000	unknown	Great diversity among customers; some return daily.

With some uncertainty, we can make a few reasonable inferences based on these figures.

- Some of these figures likely represent clients that access more than one food service. We cannot add these figures to represent number of those in need, however, we can add them to show the extent of overall met demand.
- Demand might very well exceed met demand. Some clients might access more food if it were available: for example, over an eight-week period, The Methodist Social Services serves approximately 1900 different households, many of whom might benefit from more than one food parcel in two months.
- Some of these clients live outside of 4412.
- Behind these visible figures sits unknown information about who requires food support but cannot or does not access it—due, for example, to insufficient information, lack of culturally inappropriate free food outlets, lack of perceived social safety, physical and mental health challenges, barriers to transport, and so forth.

In sum, the data above shows 3,100 times that free food is accessed from these providers, each week, with this met demand potentially under-representing the real need of 4412 residents.

## A.3 Quantitative measures of housing inequity in 4412

### A.3.1 Census data on rentals

The 2018 Census offers a breakdown of those who rent in 4412 by suburb. See Table A3.

Table A3. Rental population in **some 4412 areas**

<b>Neighbourhood</b>	<b>Percent renting</b>	<b>2018 rental population</b>
Awapuni	45%	3700
Cloverlea	29%	600
Highbury	52%	2500
Takaro	48%	2700
West End	57%	2800
Westbrook	40%	1300

By comparison, 37% of people who lived in Palmerston North in 2018 lived in rental housing, and 36% of those in Aotearoa.

### A.3.2 Social housing

Social housing is another indication of conditions in 4412. See Table A4.

Table A4. Kāinga Ora social housing in 4412

Neighbourhood	Number of Kāinga Ora homes
Awapuni	122
Cloverlea	16
Highbury	271
Westbrook	259
West End	158
Takaro	53
4412 totals	873
Palmerston North	1471

In other words, around 60% of Kāinga Ora's Palmerston North social housing is in 4412 neighbourhoods.

Not all those who rent, and not all those who live in social housing, experience housing insecurity. Similarly, many might experience home mortgage payments as a source of insecurity and anxiety.

#### A.4 Quantitative measures of income challenges

This section relies on some of the same indicators as does the NZDep2018, for the purpose of looking more closely at income, and at the correlating measures of unemployment and levels of education. See Table A5.

Table A5. 2018 Census Data related to household income

	Unemployed	median income	No education qualification
Awapuni	5.60%	\$24,800.00	22.00%
Highbury	8.20%	\$20,300.00	31.70%
Westbrook	6.80%	\$24,800.00	27.00%
Takaro	5.50%	\$27,800.00	19.50%
Palm Nth	4.00%	\$30,000.00	17.80%
Aotearoa	4.70%	\$31,800.00	18.20%

These incomes are in many cases too low to meet basic needs. For example, one investment web site claims that the current median weekly rent in Highbury is \$450 per week (Real Estate Investar n.d.), or \$23,400 per year—more than a median annual income. This is untenable unless multiple income earners are pooling incomes with relatively few dependents.

#### A.5 Some additional limits to our figures

In this Appendix, any figures requiring calculations have been rounded considerably:

- To account for how calculations could compound any inaccuracies or imprecisions in the original data
- To acknowledge elapsed time since most of the data was collected, especially noting that all national data is pre-COVID-19
- To address some inconsistencies between various data sources we accessed
- To account the boundary differences between 4412 and the primary neighbourhoods within 4412
- To recognise the lack of any formal statistical training in the report author

We cannot emphasise enough that our findings are intended to provide a rough sketch only—broadly accurate, but nonetheless imprecise. Further, while the sketch shares some of the broad contours shaping food insecurity, most of our measures are indirect.

MFAN would welcome more up-to-date, precise, and pertinent local statistics from any of our partnering organisations, especially if there's reason to think this will guide us to develop a better strategy. For example, we would welcome answers to the following questions.

- What is the extent of unmet demand for food?
- To what extent is food insecurity occasional or chronic, mild or severe?
- What are the actual budget constraints of those seeking food support, once all sources of income are addressed?

Are there any underused food sources available? If so, why might this be?

Ultimately, we also hope to understand the extent to which we can extrapolate our strategy from 4412 to the rest of Palmerston North, and we welcome the insights of service providers who are in a position to take this broader view.

## Appendix B: Consultation with community partners

### B.1 Participant consultation at a 26 July 2021 workshop

#### B.1.1 Questions for participants

On 26 July 2021, MFAN hosted a three-hour community workshop at Te Manawa. (See section B.1.3 for a participant list.) Workshop purposes included community consultation. At the workshop, strategy lead Dave Mollard reminded participants that “problem” does not mean “something bad”: rather, it is more akin to a maths problem: a challenge, a puzzle, something to understand as we work toward a solution.

As the workshop’s primary approach to consultation, participants were asked to pool their knowledge of 4412 in a SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats). Participants were assigned to one of the four areas of the SWOT analysis using criteria that weren’t specific to the problem (what they were wearing). Each group addressed one of the following questions:

- What are the known community strengths we can use as a resource base for developing our solutions?
- What are the known weaknesses that can help us better understand and respect the complex issues shaping experience and challenging whānau ora and food security?
- What are the identified opportunities that we can accept to enable our own action?
- What are the identified threats that can shape our advance planning for resilience in anticipation of social change, including shocks and disruptions?

#### B.1.2 Participants’ responses

Workshop participants’ answers to these questions are represented in the figure below.



### B.1.3 Workshop participants

Barrett	Brent	PNCC
BatachEl	Madz	ENM
Beere	Rebecca	Supergrans Manawatu
Butt	Zulfiqar	PNCC
Carter	Brooke	Department of Internal Affairs (DIA)
Cass	Sian	Palmerston North City Council
Chelius	Suzanne	RECAP
Crooks	Amy	Best Care Whakapai Hauora Charitable Trust
Culver	Rebecca	Just Zilch
de Maxton	Lea-Ann	
Dollery	Fiona	Public Health Service, Public Health
Etuale	James	Dept of Internal Affairs
Hamilton	Stephen	Green Corridors
Hera	Jean	
Hilkens	Aniek	Massey University
johanson	Kylie	Best Care Whakapai Hauora Charitable Trust
Keenan	Mike	Society of St Vincent de Paul
King	Helen	ENM
Kira	Geoff	Massey University
Lake	Linda	Te Awahou Kai
Lee	Kian	PNCC
Lehndorf	Helen	Manawatū Food Action Network
Low	Beth	Growing gardens and communities
Love	Chris	RECAP
McDonald	Monique	Best Care Whakapai Hauora Charitable Trust
Mollard	Dave	Manawatū Food Action Network
Moonsamy	Helen	Salvation Army
Nixon	Annette	Awapuni Garden Club
O'Fee	Bobbie	ONLA
Pearce	Sally	Moheke Community Garden
Pokaia	Venessa	Te Wakahuia Manawatu Trust
Rayner	Julia	
Russell	Nicola	Te Hā o Hine-ahu-one Palmerston North Women's Health Collective
Schiele	Heike	ENM
Semmens	Rae	Salvation Army
Semmens	Rose	Society of St Vincent de Paul
Shariff	Zubeda	Palmerston North Women Refuge
SHERIDAN	RACHAEL	N/A
Simon	Denise	Kainga Ora - homes and communities
Stevens	Sharon	Pūriri
Taonui	Rhia	Tupu Aotearoa – Whanganui/Manawatū / Hawkes Bay Regional Partnerships Ministry for Pacific Peoples
Venkateswar	Sita	Massey University
Viles	Amy	Palmerston North City Council
Williams	Angela	Kainga Ora - homes and communities
Williams	Rob	
Wynn	Debra	Community Fruit Harvest Manawatu

## B.2 Community Chats

### B.2.1 Partnering organisations consulted

Staff from the nine food providers were asked the following questions:

1. What are food security issues?
2. How many people do you serve per week?
3. What percentage of these people are food insecure?

These nine providers are:

- Te Whare Koha
- Legacy Church
- Te Pātaka Kai 4412
- St. Vincent de Paul
- Te Waka Huia
- The Methodist Social Services
- The Luck Venue
- The Salvation Army
- Just Zilch

Staff from the following organisations were also asked to identify food security issues:

- Rauakawa Whānau Ora
- Te Tihi
- Highbury Whānau Centre
- Palmerston North Pasifika Community
- Homes 4 People
- Palmerston North City Council
- Kāinga Ora
- SuperGrans Manawatu Charitable Trust
- Pascal Street Community Trust
- Plant to Plate
- Corrections

4412 Kai Strategy Lead Dave Mollard has also contributed his own knowledge based on experience coordinating Awapuni Community Gardens (a project run by Pascal Street Community Trust) and recent work experience at Just Zilch.

## B.2.2 Food security challenges identified by partners

These are the partner-identified challenges with affording food:

- General financial challenges
- Poverty
- Being on the benefit
- Benefit cuts
- Debt
- High cost of housing
- Unhealthy food choices are cheaper
- Lack of transferable work skills

These are the identified challenges with accessing food:

- Insufficient access to healthy food
- Insufficient access to quality food
- Lack of information about how to access and use available food
- Transportation challenges
- Shyness or discomfort around asking for help accessing food
- Health issues

These are the identified health and well-being challenges associated with living in an inequitable society (e.g. poverty and income inequality, colonisation and land alienation, poor housing availability):

- Lack of education or inequitable education
- Need for lunch in schools and good food in general to support learning
- Intergenerational dysfunction
- Unstable living situations (including temporary housing situations)
- Lack of cheap rentals creating housing anxiety
- Broken families
- Additional food challenges associated with being a single parent
- Drug and alcohol addictions
- Mental health challenges
- General dysfunction, family dysfunction
- Poor housing
- Homelessness

These are the identified barriers to home and community food growing:

- Temporary housing
- Homelessness
- Need for education and skills development around food growing
- Need for education around preparing healthy meals
- Lack of time and energy after a long day at work
- Policy changes in public spaces, for example, change from not allowing māra kai to encouraging them
- Ongoing vandalism to public fruit trees
- Need for community members to support school māra kai and other community growing

## Appendix C: Transportation and food purchasing

### 3.1.1 Purchased food

Currently the only supermarket in 4412 is New World Pioneer, in Takaro. There are Four Squares in Cloverlea, Awapuni, and Westbrook, a small dairy in the Highbury Shopping Centre, and another small convenience store in the city centre on the very edge of 4412. Prices in all these outlets tend to be notably high relative to the Pak'nSave supermarket in the Palmerston North city centre. Those wishing to visit the budget food outlet Reduced to Clear also need to travel, in this case across Rangitikei Street from Takaro.

4412 is also home to the discount food outlet Mad Butcher, with the 4412's only specialty fruit and vegetable shop next door, T Market Fresh. Produce selections tend to be more diverse at Totally Fresh across town, and Totally Fresh is also more likely to have a selection of older produce on discount. The Highbury Shopping Centre is home to a Sunday morning Highbury Flea Market, with two fruit and vegetable sellers: this is generally one of the least expensive ways to buy seasonal produce. Market produce seller Maruna Engu thinks the market does not yet realise its full potential. He points to limits on the space available, holding the market on a Sunday, the communication networks in the 4412, and trying to create momentum with more stalls.

What do these constraints on buying food mean for residents? Those requiring public transport to purchase food will need to spend a minimum of \$2.40 for a round trip. They also need to walk from their home to the closest bus stop, wait for the bus, then walk from the nearest drop-off point to their destination, returning home in reverse carrying groceries. As an example, public bus routes through 4412 allow access to Pak'nSave via an eight hundred-metre walk from the central bus exchange, which is convenient for trip planning; even so, someone whose home is only two hundred metres from the nearest bus stop would still require at least a two kilometre round-trip walk with half of it carrying purchased groceries.

Table C1 overviews the minimum bus travel time it takes to get from three central 4412 neighbourhood locations to the cheapest place to buy different food types in the city; in general, trips will take more time than noted due to timetabling. Note that the travel time is for one direction only.

Table C1. One-way bus travel times to budget shopping from three central locations in 4412 neighbourhoods, in minutes

	Reduced to Clear	Pak'nSave	Mad Butcher & T Market Fresh	Chilly Box	Totally Fresh
Highbury Shops	29	34	15	58	28
Cloverlea Shops	14	24	19	48	14
Awapuni Shops	31	19	22	56	31

Those who do have access to a motor vehicle with a current Warrant of Fitness, road user charges, and fuel in the tank have an easier time with budget shopping, yet shopping still requires planning and more time than does travel from many other neighbourhoods in Palmerston North. See Table C2. Te Whare Koha in Highbury reduces the shopping burden by operating a daily shuttle service from the Highbury shops to Just Zilch, sometimes stopping at Countdown for free prescriptions on its return. This service is usually over-subscribed as the shuttle is only a seven-seater. The service also relies on a limited number of drivers.

Table C2. Driving distances to budget shopping from three central locations in 4412 neighbourhoods, in kilometres

	Reduced to Clear	Pak'nSave	Mad Butcher & T Market Fresh	Chilly Box	Totally Fresh
Highbury Shops	2.3	2.9	1.7	7.7	2.4
Cloverlea Shops	2.7	3.7	2.5	7.2	2.6
Awapuni Shops	4.0	2.7	2.2	8.6	4.1

In 2022, Countdown Awapuni is scheduled to open in 4412, with generally lower food prices than at Pioneer New World. This supermarket will be only 1.5 kilometres from most of Awapuni and 1.6 kilometres from most of Highbury, creating a better opportunity for many 4412 residents to access less expensive food on a more regular basis.