



REPORT

Auckland South Rural Production

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CONFIDENTIAL

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AUCKLAND SOUTH RURAL PRODUCTION GREENFIELDS STUDY AREA

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1. Introduction

1.1 Background to study

The Auckland Council has commissioned Primary Focus NZ Ltd to undertake a study examining the range and value of rural production activities in three Greenfield sites in Auckland South.

The impetus for the study has come from the need for the Auckland Council to accommodate significant urban growth over the next thirty years. It is necessary to understand the value of the range of rural activities in the greenfield areas and the potential impact that accommodating such urban growth may have on Auckland's rural economy.

1.2 Brief

Three Greenfield sites in Pukekohe, Paerata and Karaka/Drury have been identified and are the focus of this study.

The study reports on:

- The range and significance of existing rural production activities in and around the study area.
- The spatially significant groupings of rural industries and rural production activities.
- The economic value of the range of rural production activities and rural industries.
- Commentary on the strength of the cross-sectoral (rural production activities) backward and forward linkages and the significance of these to the Study area.
- Key elements of the rural production systems in the Study area, the role these play in the economy of the Study area and the wider rural and Auckland economy.
- The range of rural production activities using a range of economic indicators.
- High level commentary on different parts of the Study areas with regards to
 - soil type
 - existing uses
 - value per hectare based on current use calculated using a range of indicators
- A high level comparative analysis of the Drury South development area with the Study areas.

1.3 Extent of Study Area

The South of Auckland rural areas extend from the west coast of Awhitu across to the east coast of Maraetai, travelling as far south as Bombay. However for the purpose of this study, the areas of Karaka, Drury, Paerata and Pukekohe have been identified and are demarcated in the map below.

The three study areas comprise a mix of rural production activities ranging from lifestyle areas of below 2 ha to significant farming operations. The map below has earmarked some of the rural industries who are highly productive, and contribute to Auckland's economy.

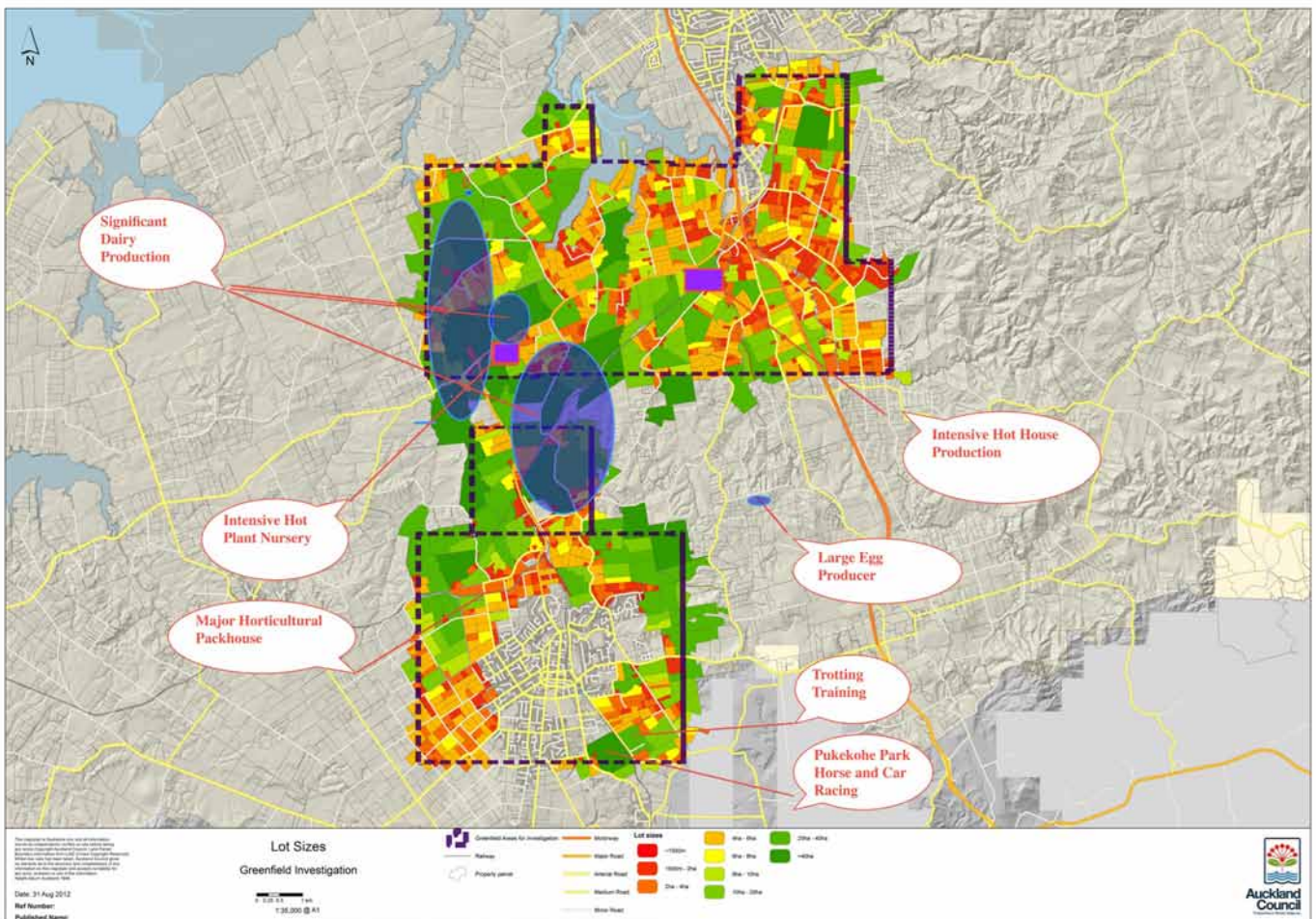


Diagram 1: Three Greenfield Study Areas of Karaka, Pukekohe and Paerata

2. Methodology

2.1 Process

In recognition of the tight timeframe and the restricted brief of the study, the investigations outlined in this report have focused on establishing the value of rural production activities in the study area and general commentary. The process followed when undertaking the project has been:

- Briefing and background discussion with Council Officers
- Review of Agribase data and property valuation data provided by Council
- Review of Statistics NZ data
- Development of a set of 2006-07 regional multipliers (this base year is the most recent available for any region) for Franklin by Geoff Butcher of Butcher Partners Limited
- Detailed site visits and inspections
- Industry interviews with key industries located in the Study area
- Preparation of report and associated mapping

Turnover and FTE rates applied were derived from the Berl 2011 Kel Sanderson, Kelly Dustow "Assessment of The Economic Value of Rural Productive Potential in the Greater Otaki Area Study as per figure 1 below.

	Farming Type	FTE/\$m	Turnover \$/ha
API	BEEKEEPING	7	10,000
ARA	ARABLE CROPPING	5	1,000
BEF	BEEF CATTLE	5	1,000
DAI	DAIRY CATTLE	4.5	4,639
DEE	DEER FARMING	5.7	1,000
DOG	DOGS		1,000
DRY	DAIRY DRY STOCK	4.5	4,639
EMU	EMU FARMING	4.3	1,000
FLO	FLOWERS	7.5	21,000
FOR	FORESTRY	4.3	500
FRU	FRUIT GROWING	7.5	21,000
GOA	GOAT FARMING	5	1,000
GRA	GRAZING OTHER STOCK	5	1,000
HOR	HORSE FARMING BREEDING	5.7	10,000
LIF	LIFESTYLE BLOCK	4.3	500
NAT	NATIVE BUSH		0
NEW	NEW RECORD		0
NOF	NOT FARMED		0
NUR	PLANT NURSERY	7.5	21,000
OAN	OTHER LIVESTOCK	5	1,000
OPL	OTHER PLANTED TYPES	7.5	500
OST	OSTRICH BIRD FARMING	4.3	1,000

OTH	ENTERPRISES NOT COVERED	4	
PIG	PIG FARMING	5	4,000
POU	POULTRY FARMING	5.7	10,000
SHP	SHEEP FARMING	5	1,000
SNB	SHEEP & BEEF	5	1,000
TOU	TOURISM	4	0
UNS	UNSPECIFIED		0
VEG	VEGETABLE GROWING	7.5	21,000
VIT	VITICULTURE	7.5	21,000

Figure 1: Summary of the Turnover and FTE data used for all areas¹

Direct Margin has been calculated using the Multipliers for Franklin figures supplied by Butcher and Partners, Christchurch derived from the 2006-07 rural census.

Land use type	Margin
Horticulture & Fruit Growing	41%
Livestock and cropping farming	33%
Dairy and cattle farming	46%
Other Farming	28%

Figure 2: Land use type and associated direct margin²

Lifestyle blocks are prevalent throughout all three of the Greenfield study areas. Because of the diversity of production on lifestyle blocks it was felt that a mid-point figure needed to be chosen due to the extreme range of production values that were found in previous studies. For example: animal grazing returns range from \$38/ha - \$1000/ha and production of plants from \$60/ha - \$35,000.

For small blocks of less than 2 ha it is not uncommon for no production to be gained. Lifestyle block information was derived from MAF Information paper no. 53, by Robert Sanson, Andrew Cook and John Fairweather, "A Study of Smallholdings and their Owners" December 2004.

A figure of \$500/ha value was chosen and used for all lifestyle block land area contained in the three Greenfield areas. The range of earnings per ha for lifestyle blocks is further discussed in section 7 of this report.

¹ Berl 2011 Kel Sanderson, Kelly Dustow "Assessment of The Economic Value of Rural Productive Potential in the Greater Otaki Area Study

² Multiplier Analysis for Franklin District, Butcher & Partners, October 2012

³ New Zealand Dairy Statistics 2010-11

⁴ Multiplier Analysis for Franklin District, Butcher & Partners, October 2012

2.2 Limitations to Study

This study has been limited to project brief and access to AgriBase and Stats NZ data.

Agribase data supplied and used for the study is based on data collected from each property over the past 16 years, from 1996 to 2012. Properties have not been interviewed more than once over that time and changes in farm use are likely to have occurred with some of them.

Land areas relating to the Greenfield Study areas have been provided by the Auckland Council. Totals of land areas vary to area boundary due to titles going beyond Greenfield boundaries.

The raw data provided contained over 4 times the land area of the summary figures. Because of this the raw data could not be used.

Output/ha has been based on a mixture of industry reports and local experience. The less known industries such as poultry, horse breeding and plant nursery operations required sensitive information, due in some cases to the low number of businesses. Information was not always available.

The multiplier information used is based on the 2006-07 rural census. Calculation of the FTE labour was scaled back by a 12.5% inflation factor. The 12.5% figure for inflation was suggested by Geoff Butcher of Butcher and Partners. The employment tables report results as at 2006-07 prices. The outputs calculated in this report reflect 2011-12 prices. To bring these outputs back to 2006-07, five years deflator at 2.5% general inflation was calculated thus the 12.5% inflation factor was used.

Turnover and FTE rates per hectare were applied using the Berl 2011 Kel Sanderson, Kelly Dustow report. As a result seasonal labour fluctuations have not been picked up and FTEs may seem lower than expected. In some cases land use pertaining to intense activities such as processing may have significantly higher FTEs than reported.

Only one egg laying farm exists in the immediate area. Due to reverse sensitivity considerations we have included this in our figures because of its relatively close proximity to the Greenfield area.

Lifestyle blocks have all been treated the same. The \$500/ha output would be high for many, however this would be offset by the high spending of many of these blocks.

It was found during the site investigation around that in many areas 25% - 33% of lifestyle blocks contained equine animals. The expenditure on these animals is far in excess of the average output we have allowed for. Further work is needed on Lifestyle blocks to truly understand their actual contribution to the local economy.

3. Summary

Three greenfield sites have been identified for the Study, Karaka/Drury, Pukekohe and Paerata. Of the three sites, the land area for Karaka/Drury makes up 58% of the study area, Pukekohe makes up 27% and Paerata makes up 15%.

Karaka/Drury makes up 77% of the turnover and 76% of FTE's in the study area, followed by Pukekohe at 16% turnover with 19% of the FTEs and Paerata at 7% of turnover and 5% FTEs.

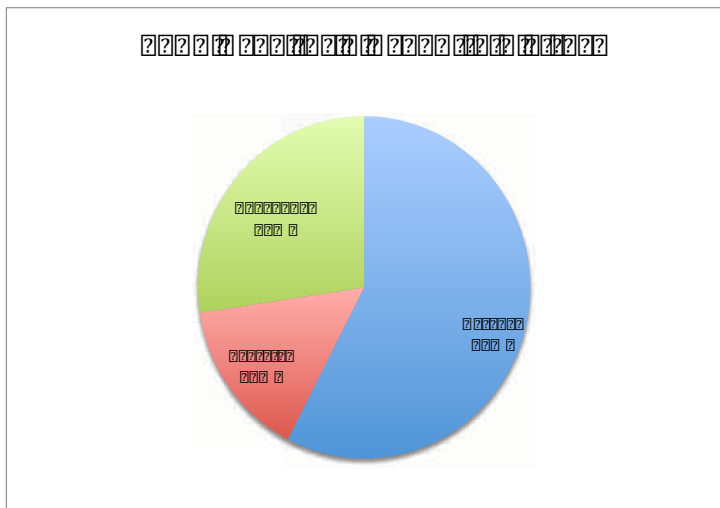


Figure 3: Land Area for three Greenfield sites

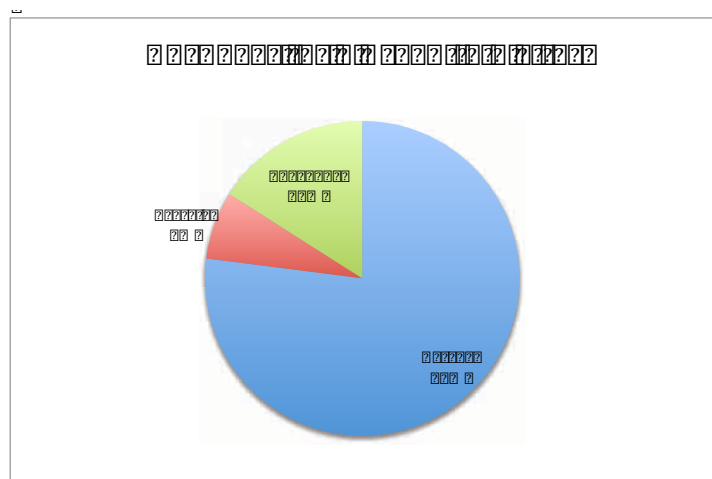


Figure 4: Turnover for three Greenfield sites

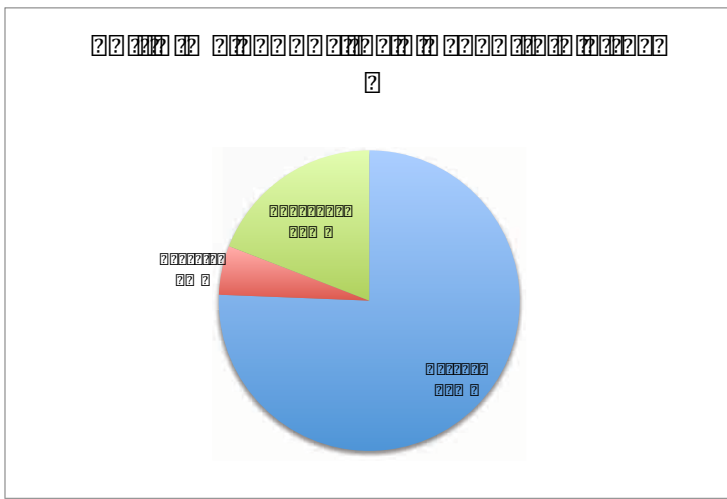


Figure 5: Full Time Labour Equivalents for three Greenfield sites

Site	Land Area (ha)	Turnover (\$/ha)	FTEs/ha
Site 1	100	1000	10
Site 2	200	2000	20
Site 3	300	3000	30

Figure 6: Table showing land area, % \$ turnover and % FTEs of each of the three Greenfield sites.

The economic value of the study areas in terms of turnover and FTEs per hectare can be summarised as follows:

Site	Land Area (ha)	Turnover (\$/ha)	FTEs/ha
Site 1	100	1000	10
Site 2	200	2000	20
Site 3	300	3000	30

Figure 7: Table showing hectares, \$ turnover and FTEs of each of the three Greenfield sites

The table below shows that the Karaka/Drury area is showing a turnover per hectare that is greater than 79% to Pukekohe and 188% to Paerata.

Site	Turnover (\$/ha)	FTEs/ha
Site 1	1000	10
Site 2	2000	20
Site 3	3000	30

Figure 8: Table showing turnover per hectare (\$m) and no of FTEs per hectare of each of the three Greenfield sites.

3.1 Land use in the Study Area

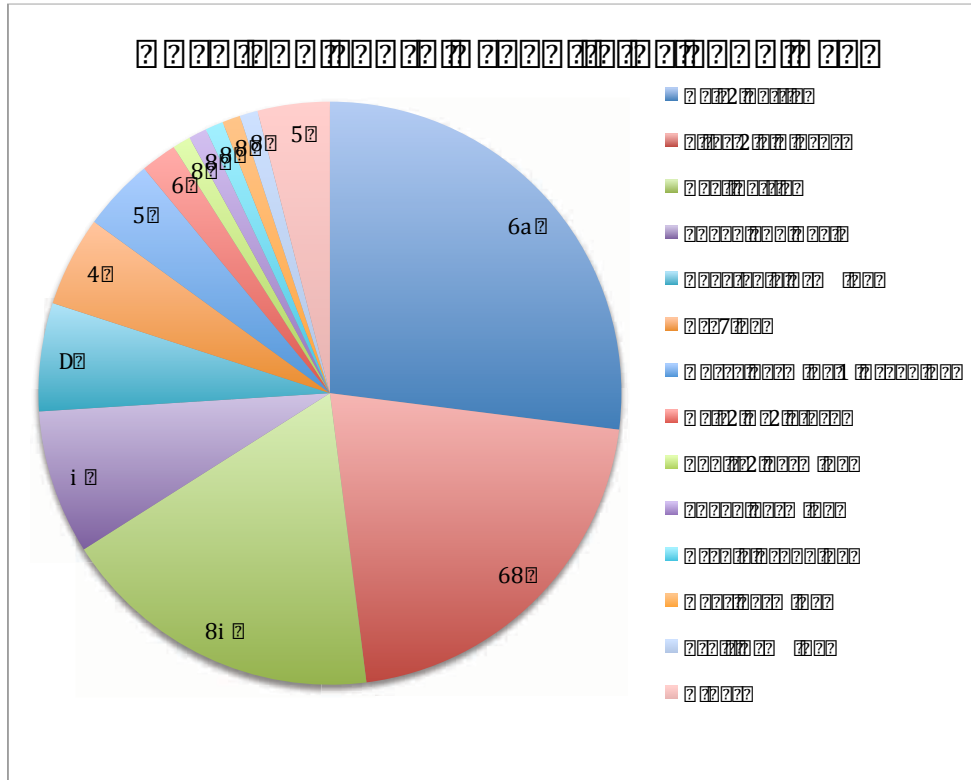


Figure 9: Graph showing % land use in the three Greenfield sites collectively.

Dairy makes up 27% of the land use in the Study area, followed by Lifestyle blocks at 21%, Beef Cattle at 18%, Sheep and Beef at 8% and Vegetable growing at 6%. Horse Farming and Breeding makes up 4% of the land use, however from the site investigations undertaken, it would seem that lifestyle blocks include a significant amount of equine activity. Horse farming and breeding as a category does not include the Lifestyle block equestrian enthusiast.

3.2 Dairy in South Auckland

59% of the total effective hectares farmed for dairy in the Auckland region is farmed in South Auckland (Manukau, Papakura, Franklin). Of the 59%, 96% is farmed in the Papakura and Franklin areas.³

Franklin yields the highest average kg milksolids per cow in the Auckland region at 312, with Manukau at 297, Papakura at 288 and Rodney at 280. Franklin yields the second highest average kg milkfat per effective hectare at 429 to Manukau at 450 with Papakura lying 3rd at 369 to Rodney at 358.⁴

Dairy comprises 27% of the land use in the Study area. It is worth noting that this figure is believed to be far larger in the Study area given that dairy farmers lease significant land parcels for their dairy run-off. Whilst 2% is recorded in the Agribase dataset as dairy dry stock, we believe that the leased land may not have been recorded as such but rather as beef cattle which currently comprises 18% of

³ New Zealand Dairy Statistics 2010-11

⁴ New Zealand Dairy Statistics 2010-11

the land use in the Study area. This has been verified whilst undertaking site inspections in the Study area.

The leasing of land for dairy run-off we believe is typical of Auckland and can be attributed to the cost of land. The excerpt below regarding a Canterbury run-off may be of interest.

"While dairy run-offs offer farmers security and control, they do have a cost. Jonathan Davis of Living Land Consultants calculated the annual cost of a 100ha dairy run-off in Canterbury to be \$60-\$80,000 above the value of grazing and feed.

This is money that needs to be generated by the dairy farm every year simply to support the run-off. He says return on capital on a run-off varies between 2.0%-6.5% depending on the amount of grass grown and purchase price of the land. The average return on most run-offs sits at between 3.5-4%.

"Assuming you are borrowing the money at 7-8% the dairy farm is having to support the run-off." Based on figures from Davis's model run-off the dairy farm is having to generate an extra \$60,000-\$80,000 to support the run-off and this is above what the dairy farm would have to pay to purchase the grazing and supplement on the open market.⁵

We believe that given the land values in the Study area versus the Canterbury Study, the dairy farms located in the Study area would have to generate significantly more than the figures quoted in Davis's article, making the purchase of a run-off block in the Study area unsustainable.

It is also worth noting that whilst dairy's yield per hectare is significantly lower than cropping and intense horticulture, it is one of the region's key export industries.

3.3 Horticulture in South Auckland

The former Franklin district is the leading district in New Zealand for nursery crops with 67,850m² grown. The former Franklin District is the leading grower in New Zealand⁶ in the foods listed in figure 10:

Outdoor vegetables	Ha	% of NZ
Broccoli	510	23%
Cabbage	308	40%
Carrots	312	24%
Lettuce	573	44%
Potatoes	2068	21%
Pumpkin	297	21%

Figure 10: Table showing % of outdoor NZ vegetables grown in the former Franklin District, 2007 Census.

⁵ <http://www.country-wide.co.nz/article/3864.html>

⁶ Stats NZ 2007 Census

Indoor vegetables	Floor space m2	% of NZ
Cucumbers	95,535	36%
Lettuce/salad greens	25,074	12%
Tomatoes	318,697	32%

Figure 11: Table showing % of indoor NZ vegetables grown in the former Franklin District. 2007 Census.

4 Karaka/Drury

The Karaka/Drury Study area (Karaka) includes the Southern Motorway and expands west to the corner of Glenbrook and Paerata Roads, up to Linwood Road and East to the Dury Quarry and Drury Hills area, incorporates some of the Manukau Harbour in the North and extends the breadth in the South from Ramarama Road to Glenbrook Road. Refer diagram 2.

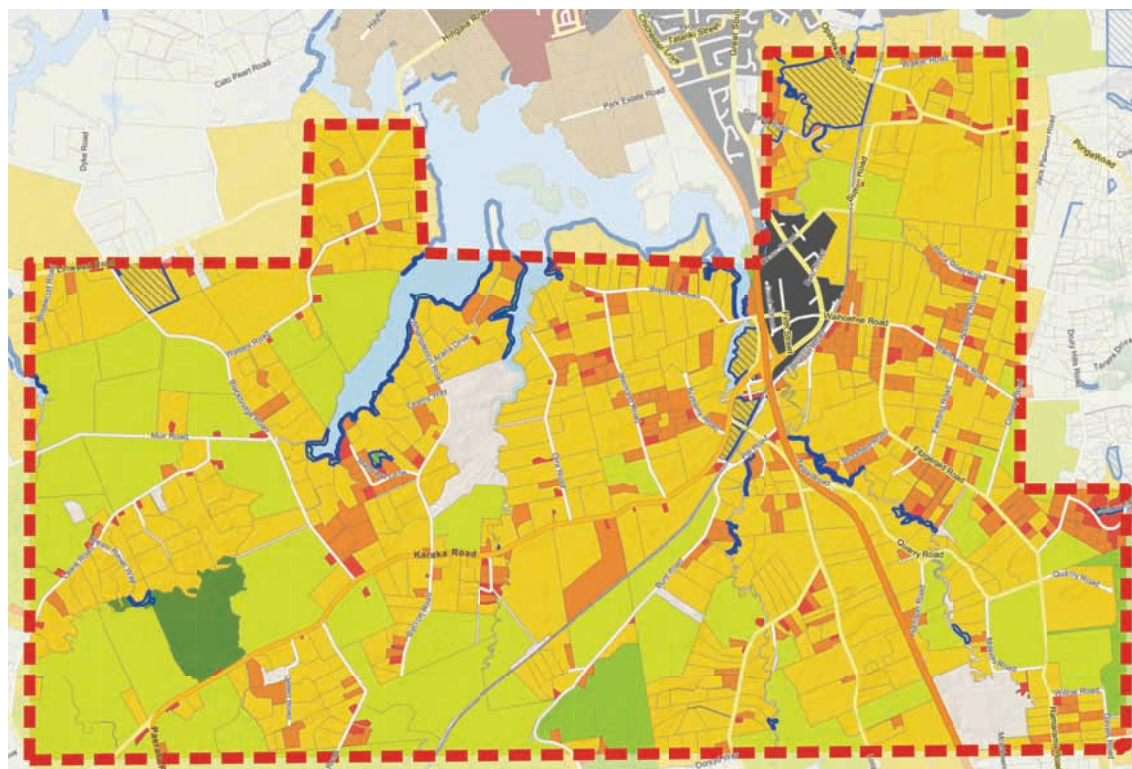


Diagram 2: Karaka/Drury Study area

4.1 Existing Productive Land Use

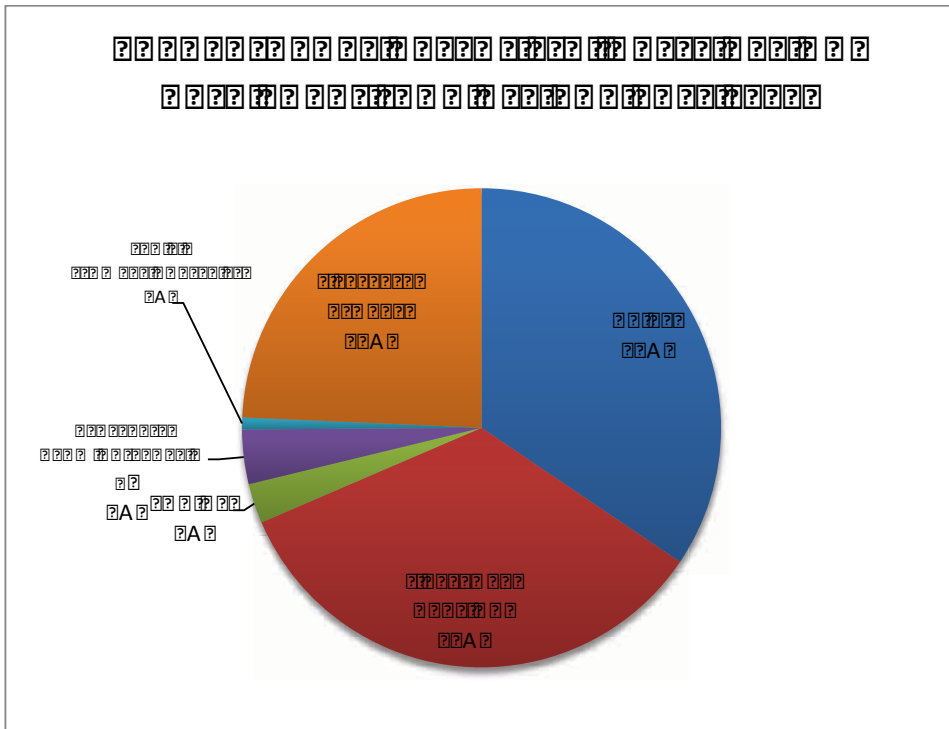


Figure 12: Land use percentage by type in the Karaka/Drury study area

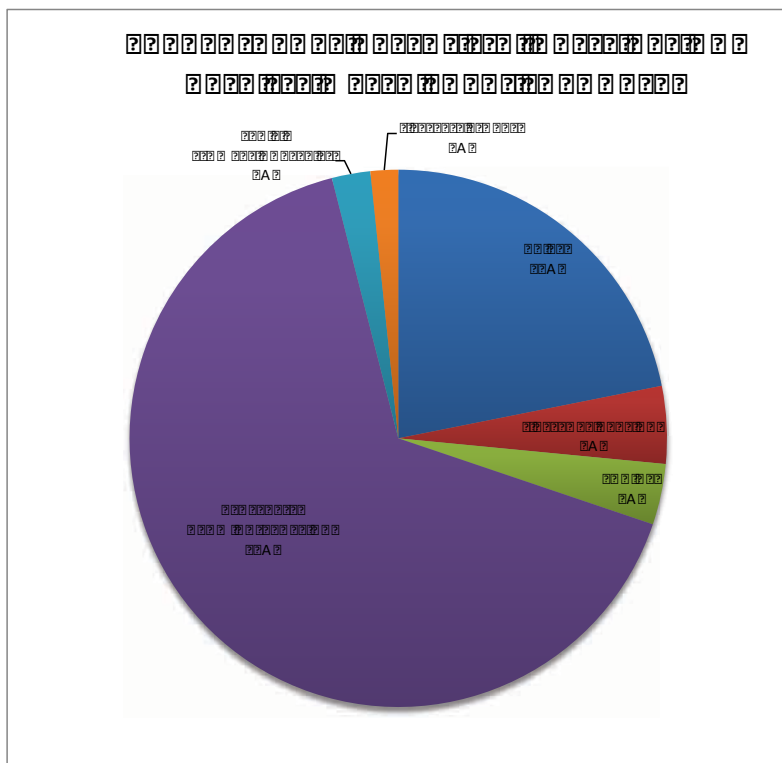


Figure 13: Turnover percentage by land use type for Karaka/Drury study area

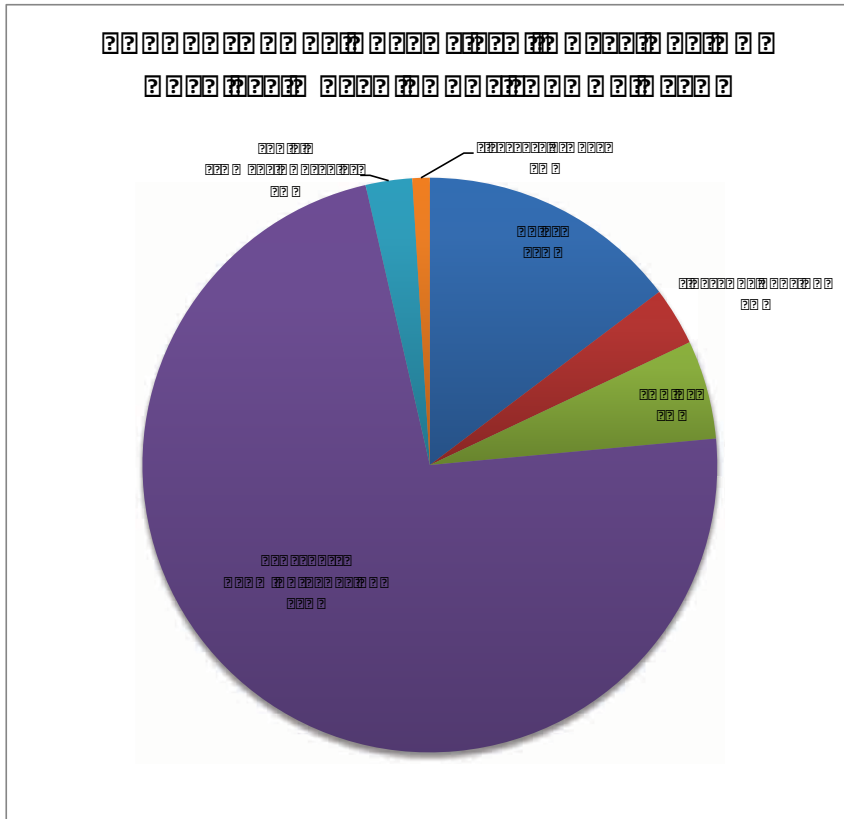


Figure 14: FTE % by land use type for Karaka/Drury study area

Karaka/Drury Study Area			
Land Use Type	Turnover (%)	FTE (%)	Area (ha)
Dairy Cattle Farming	22%	15%	34%
Livestock Grazing	5%	3%	34%
Vegetable Growing/Cropping	66%	73%	4%
Other			

Figure 15: Measure by land use type by hectare, turnover and FTE for Karaka/Drury study area

In the Karaka/Drury Study area, dairy cattle farming make up 34% of the land use, has a turnover of 22% and 15% of the total FTEs. Livestock grazing make up 34% of the land use, has a turnover of 5% and 3% of FTEs. Vegetable growing/cropping make up 4% of rural land use, 66% of turnover and 73% of the FTEs in the Study area.

Lifestyle blocks in the Karaka area make up 24% of its land-use and generate a turnover of 2% and employ 1% of the FTEs.

This data has been generated as a result of the AgriBase data. However from the site investigations undertaken by the authors we believe that as many as 33% of the lifestyle blocks in the Karaka/Drury study area keep horses as part of their lifestyle activity. As Stats NZ only record GST registered horses, the true count of number of horses to be found in the Karaka/Drury Study area would be difficult to determine accurately, as the majority seem to be kept as a lifestyle choice. This has also not been reflected in the AgriBase data.

Enterprise Franklin in 2009 undertook a study using AgriBase data, Stats NZ and industry data provided for by equine vets, feed merchants etc to determine where the horses were located in Franklin. Refer Appendix A. Whilst this data does not determine the amount of horses located in the study areas, making it difficult to determine a true economic value, it does provide a very good picture of where the horses are located.

According to Alex Matheson, author of the 'Economic Impact Report on the New Zealand Sporthorse industry', the average annual cost of keeping a horse is \$12,456.71 per annum. This figure does not include capital purchases required for keeping horses or major saddler, transport and property purchases.

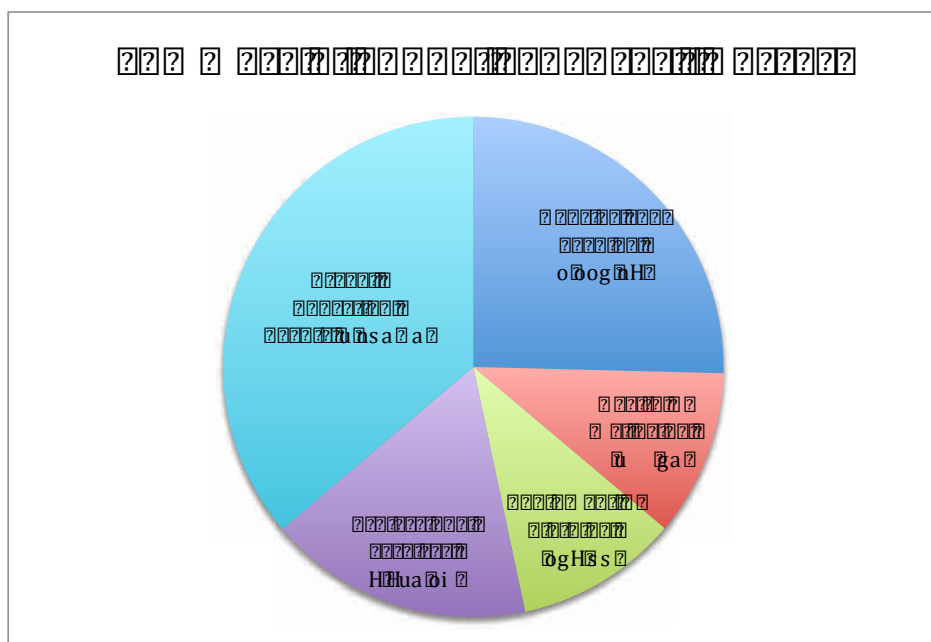


Figure 16: Summary of annual expenses – \$ - Horses⁷

The NZ Horse and Pony Magazine⁸ conducted a survey of its readers in 2011. They had a response rate of 2000 readers out of a readership of 70,000. The results show that 41% of respondents owned between 2 – 3 horses. This was

⁷ Alex Matheson, Economic Impact Report on the New Zealand Sport Horse Industry

⁸ The NZ Horse and Pony Magazine has the highest readership of equine enthusiasts and businesses in NZ. Whilst it may not be an 'impact' magazine as would be expected for undertaking research, a survey of readers of a scientific magazine such as the Equine Research Foundation Bulletin would not generate the results required for such a study as that undertaken by Alex Matheson.

consistent with the research undertaken by Alex. The survey also established that 70% of horse owners in NZ own the land they keep their horses on.

We believe that the income generated as a result of equestrian activity in the Karaka Study area is substantial, however as we do not have an accurate figure for the type of activity occurring on lifestyle blocks in the Study area, the economic value of the lifestyle horse industry in the Study area cannot be accurately accounted for.

The turnover figure for lifestyle blocks and its associated full time equivalents in the Karaka Study area should therefore not be considered as complete.

The table below describes the land use by hectare, turnover and FTE. It is worth noting however that the Karaka Study area has some significant glasshouse activity. One such glasshouse would employ around 330 staff during summer and 270 staff during winter – another such glasshouse would employ 30 seasonal staff and 16 permanent staff. The data provided by AgriBase does not show these seasonal fluctuations or variations.

The Karaka Study area generates more than \$45m in turnover annually. This figure does not include poultry as listed in Figure 17 as poultry falls outside of the Karaka Study area. Its contribution of an estimated \$10m in turnover to the South Auckland area is of significance to the Study Area.

KARAKA/DRURY STUDY AREA			
Land use	Hectares	\$ Turnover	FTE
Arable Cropping	98	98,000	
Beef Cattle	1134	1,134,000	6
Dairy Cattle	2138	9,918,182	45
Deer Farming	45	45,000	
Flowers	50	1,050,000	8
Grazing Other Stock	359	359,000	2
Horse Farming and Breeding	166	1,660,000	17
Lifestyle Blocks	1508	754,000	3
Hothouses	46	28,000,000	210
Poultry Farming	7	9,999,997	24
Sheep Farming	99	99,000	
Sheep and Beef	477	477,000	2
Vegetable growing	84	1,764,000	13
Total	6211	55,358,179	330

Figure 17: Hectares, Turnover and FTEs by land use for Karaka/Drury Study area

4.2 Significance of the Karaka/Drury area to the local economy

The western end of the Karaka Study area has a number of dairy farms where significant capital investment has been made with regards to on farm improvements. It is also important to note that dairy farms outside of the Study area as well as those in the Study area, lease farms in the Study area as their Run Off farms. Dairy Run Offs are critically important to the dairy industry as this is where heifers are raised, the block may be used for wintering or for growing feed when not stocked.

Large blocks are leased simply because the cost of purchasing land in the Karaka Study area is unsustainable for the dairy farmer. The economics of a dairy Run Off is discussed in section 3.2 of this report. Leased blocks used as a dairy run off require daily monitoring by the farmer, hence the need for leased land to be located close to the dairy farm. Herd sizes in the Karaka area range from 260 to 500 cows.

Land is also leased in the Karaka study area for cropping and horse farming and breeding.

It is also worth noting that for growers such as those in the glasshouse industry, fertile soils is of little importance, what is of most importance is the production system as outlined in 8.2.

There is also significant capital investment in businesses located in the study area. One particular grower has an extensive spread of specialised concrete flooring replicating the highly productive glasshouse industry in Holland. Such capital investment is evident throughout the study area. It is not possible to report the level of capital investment in the Study area as this information is not available.

Industries located in the Study area also provide important services to each other. For instance a large grower with a sophisticated freight system in place may provide space on trucks for other growers who are at capacity or may not necessarily have the same level of infrastructure.

The Auckland market is the main market for many growers in the study area, followed by the North Island and South Island.⁹

4.3 Comparative analysis between Drury and Karaka areas

The Drury area has a far higher percentage of LUC 2 land than the Karaka area which is a combination of LUC 2 and LUC 3 land. Refer to diagram 7 - Map Land Use Capability. Despite the high percentage of LUC 2, the Drury area is dominated by lifestyle blocks of a size of 6 hectares and smaller. The production system within this area may have altered as a result of increased urbanisation.

The western end of the Karaka study area comprises mostly properties larger than 20 hectares and farms remain relatively large in this area despite owners holding a number of titles. The production system within this study area seems to have remained relatively intact.

⁹ S Gellert, Gellert Nurseries

Agricultural and horticultural activities in the Karaka area are significant and this was confirmed by site investigations.

4.4 Drury South Business Land Project

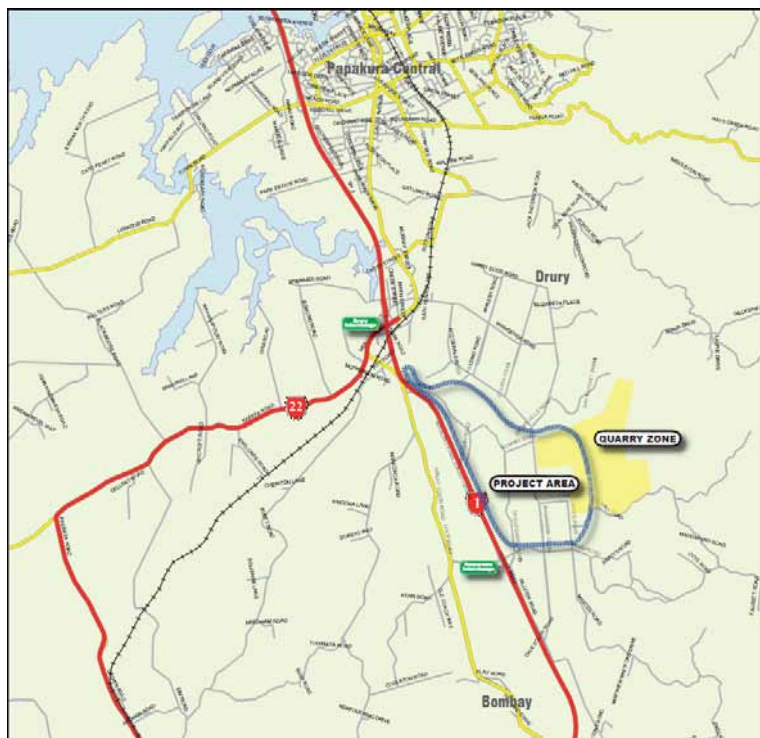


Diagram 3: Demarcated Drury South project area¹⁰

The Drury South project area is 361 hectares. 130 hectares has been applied to public open space, riparian corridors, storm water treatment and management areas and roads.

A further 8 hectares is occupied by the Transpower switching/sub-station site, resulting in a net business area of approximately 223 hectares. Of this area, 201 hectares has been identified for industrial activities, with the remaining 22 hectares proposed for supporting business uses.¹¹

The land is contained by the SH1 on the western edge, the eastern edge by the Drury quarry and the Hunua hills – topography, the southern edge by the Bombay Hills – topography and the northern edge by the escarpment and rural residential.

The Stevenson Group own a significant portion of the plan change area. The land is predominantly Category 2 and 4 under the LUC. Stevenson own the farm surrounding the quarry which is used as a finishing farm for their livestock bred at Lochinver Station in Taupo.

The Karaka/Drury Study area incorporates the Drury South business land area and part of the Drury Quarry. The land is predominantly LUC 2, however it seems that the agricultural production system has already been compromised in this area, as a result of the area being dominated by lifestyle blocks smaller than 4- 6 hectares in size.

¹⁰ Drury South Business Project Consultation Report, December 2010, prepared by Theresa Walsh

¹¹ <http://drurysouth.net.nz>

5 Paerata

Paerata is located at the northern end of the Pukekohe. The study area, refer diagram 4, includes an extensive area previously identified on the eastern side of Paerata Road as a potential business land area (115 hectares) by the former Franklin District Council. However, the Franklin District Council, at the time of its amalgamation with the Auckland Council, had not undertaken to rezone this land from rural to business. It is believed however that peat soil can be found in this area, making business land development potentially undesirable.



Diagram 4: Paerata Study area

5.1 Existing Productive Land Use

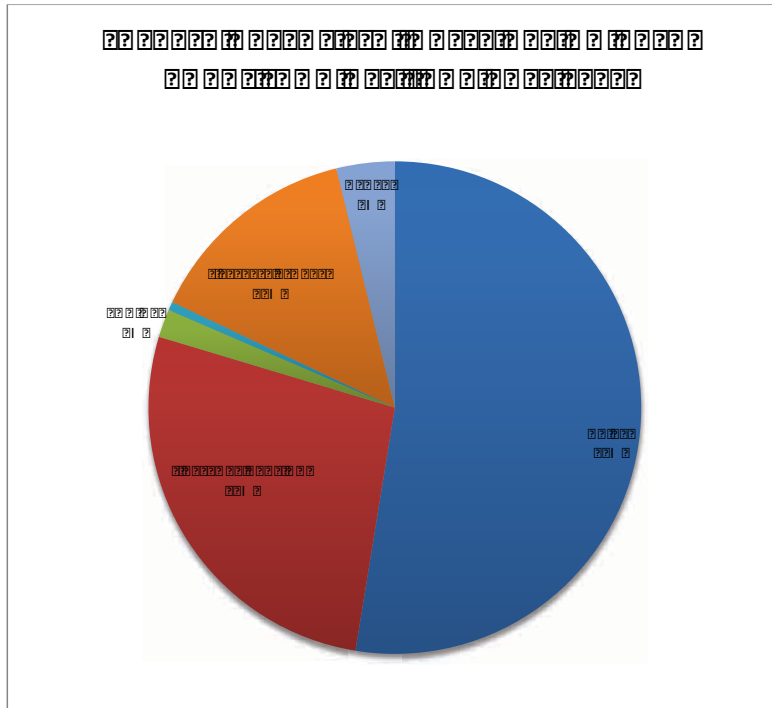


Figure 18: Land use percentage by type in the Paerata study area

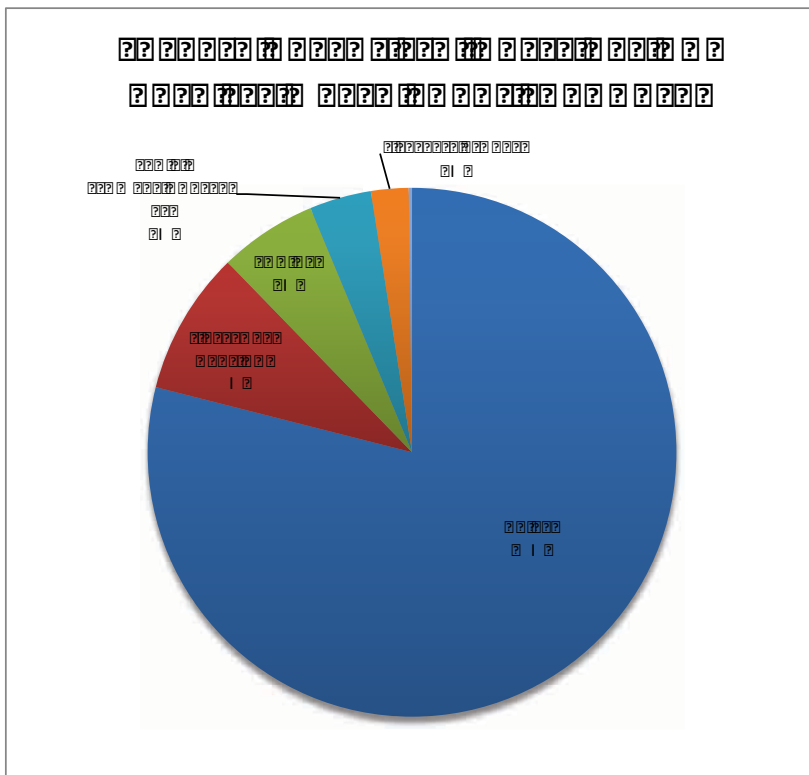


Figure 19: Turnover percentage by land use type for Paerata area

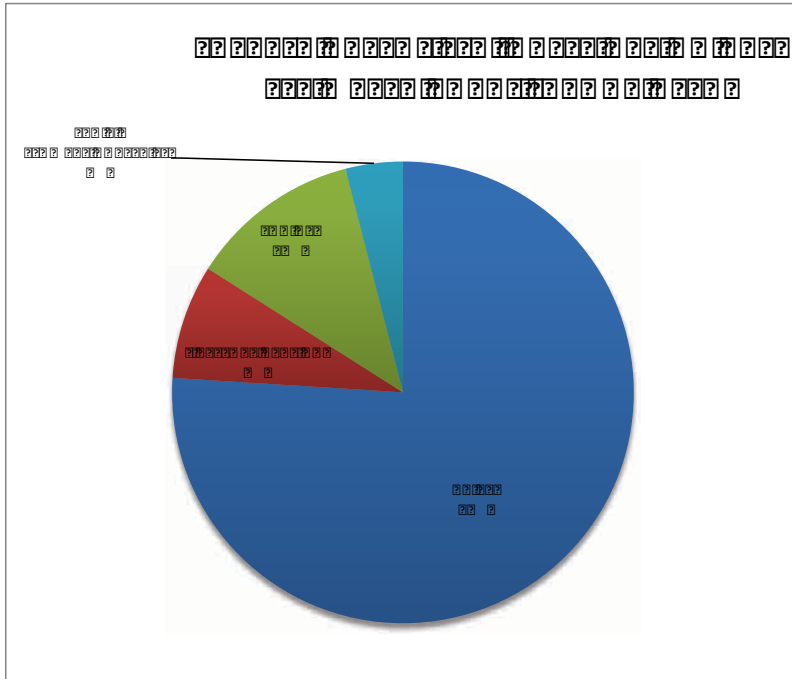


Figure 20: FTE % by land use type for Paerata study area

In the Paerata area, dairy makes up 53% of its land use with 79% of its turnover and 76% of its FTEs. Livestock grazing make up 27% of its land use with 9% of its turnover and 8% of its FTEs and horse breeding and farming make up 2% of its land use, 6% of its turnover and 12% of its FTEs.

Lifestyle blocks make up 14% of its land use and 2% of its turnover.

Paerata Study Area Land Use Summary			
Land Use Type	Area (ha)	Turnover (%)	FTE (%)
Dairy	14,200	79	76
Livestock grazing	7,000	9	8
Horse breeding and farming	1,000	6	12
Lifestyle blocks	1,800	2	0
Other	1,000	0	0

Figure 21: Measure by land use type by hectare, turnover and FTE for Paerata study area

Figure 21 describes the land use by hectare, turnover and FTE. It is worth noting that there is a sizeable dairy farm located in the Paerata study area owned by Wesley College. This farm has seen recent expansion through further land acquisition and on farm improvements.

It is also worth noting the recent location of a multi-million dollar equine vet hospital in the study area.

The hospital has a specialised treatment room with stocks and a rubber non-slip floor, a fully padded knock-down/recovery room, and a spacious surgical theatre. Hospitalisation facilities include large boxes, covered yards and small paddocks.

The hospital is only one of two such in New Zealand. Surgeries from all over the North Island are referred to this hospital. The hospital is located in Franklin because of its close proximity to the racing industry and the large concentration of horse breeding and sport horse enthusiasts.¹²

PAERATA STUDY AREA			
Land use	Hectares	\$ Turnover	FTE
Beef cattle	202	202,000	1
Dairy cattle	852	3,952,428	19
Deer farming	42	42,000	
Fruit growing	9	189,000	1
Grazing other stock	177	177,000	1
Horse farming and breeding	30	300,000	3
Lifestyle blocks	229	114,500	
Poultry farming	1	10,000	
Sheep farming	1	1,000	
Sheep and beef	17	17,000	
Unspecified	61		
Total	1621	5,004,928	25

Figure 22: Hectares, Turnover and FTEs by land use for Paerata Study area

The Paerata Study area generates more than \$5m in turnover annually.

5.2 Significance of the Paerata area to the local economy

The Paerata area is dominated by larger blocks of land, mostly greater than 20 hectares in size. The southern end of Paerata is dominated by small blocks. Dairy is the dominant industry in Paerata taking up 852 hectares and employing 25 FTEs with an annual turnover of more than \$5m.

The discovery of peat soils by the former Franklin District Council make development of parts of the proposed business land area challenging. Peat soils have insufficient bearing pressure and require specifically designed raft foundations and floor slabs. Further work will be required to understand the extent of these soils and the impact this may have on local development and rural production.

¹² Neil Houston, Director, Vet Associates

6 Pukekohe

The Pukekohe Study area is limited to the rural outskirts of the Pukekohe township. There are two distinct areas, Pukekohe West and Pukekohe East and the land use differs quite remarkably. South west of Pukekohe is dominated by Class 1 and 2 category soils under the LUC, however the commentary in this report under 8 – Soils is very valid in this case. Whilst Pukekohe West may have Class 1 and 2 category soils under the LUC, the production system has been compromised as a result of urbanisation. The loss of this production system in some of the Study Area is irreversible. Refer diagram 5.

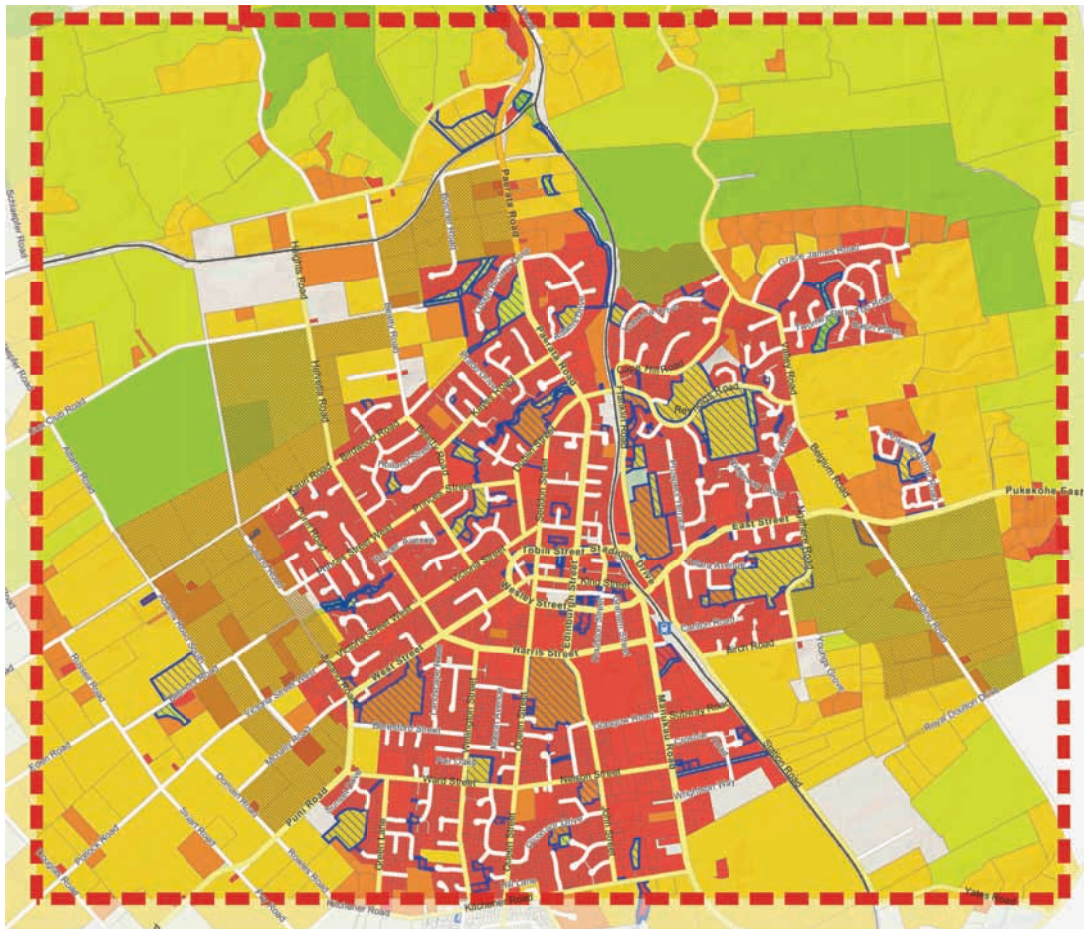


Diagram 5: Pukekohe Study Area

8.2 Existing Productive Land Use

The study area is limited to the earmarked area in the diagram, and does not take into consideration the economic activities in the town of Pukekohe.

There are a number of significant businesses who are also export industries located in the study area. Pukekohe West has a significantly sized packhouse operation exporting produce NZ wide and internationally. Whilst the packhouse does not currently make use of rail, it is located alongside the rail network.

Rural production off the land has been measured as the key component of this Study. The value of processing and packaging product, being the added value component of rural production has not been measured. There are some key horticulture industries located in the Pukekohe Study area undertaking value-added production who are significant employers. These may be located on rural zoned land close to town and will require protection to enable such activity to continue close to urban development. Such value-added activities are located in the Pukekohe study area as a result of the area's proximity to ports, infrastructure, labour, etc.

South east of Pukekohe lies a cluster of horse racing activity, as well as a sizeable packhouse operation. A training track for the harness industry is located in this area, with up to 500 horses training per day on the track. The track is the nucleus of a hub of horse racing properties who directly access the track daily through a network of pathways. These properties are leased or owned by trainers with horses from as far afield as Christchurch. South Island trainers and owners also access the facilities located in this hub of equine activity.

The area is a large exporter of racehorses, with horses moving between Australia and New Zealand for racing purposes as well as the sale of horses.

Located close to the harness industry track is a training and race track for the thoroughbred industry. Up to 300 horses train on this site per day. The track also has stables, although it does not operate in the same way as the harness industry with tracks accessible to the training track. Trainers truck horses to the track for training purposes.

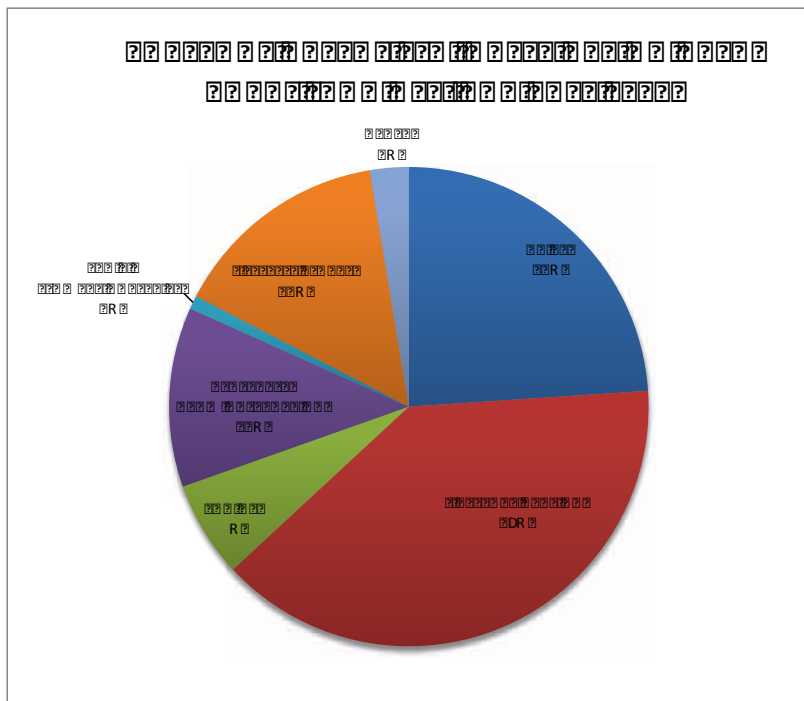


Figure 23: Land use percentage by type in the Pukekohe study area

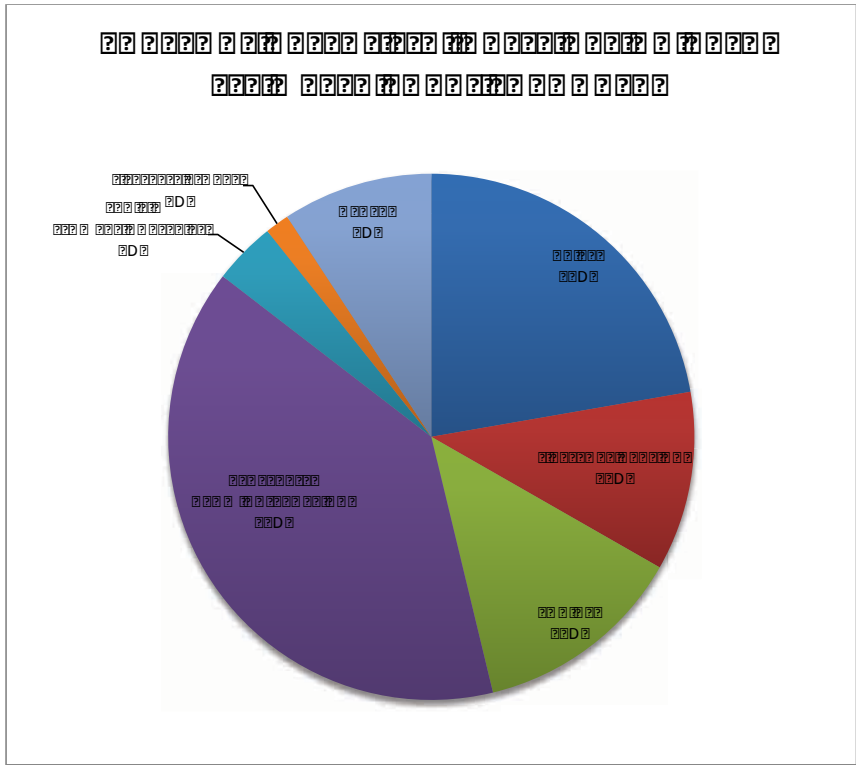


Figure 24: Turnover percentage by land use type for Pukekohe area

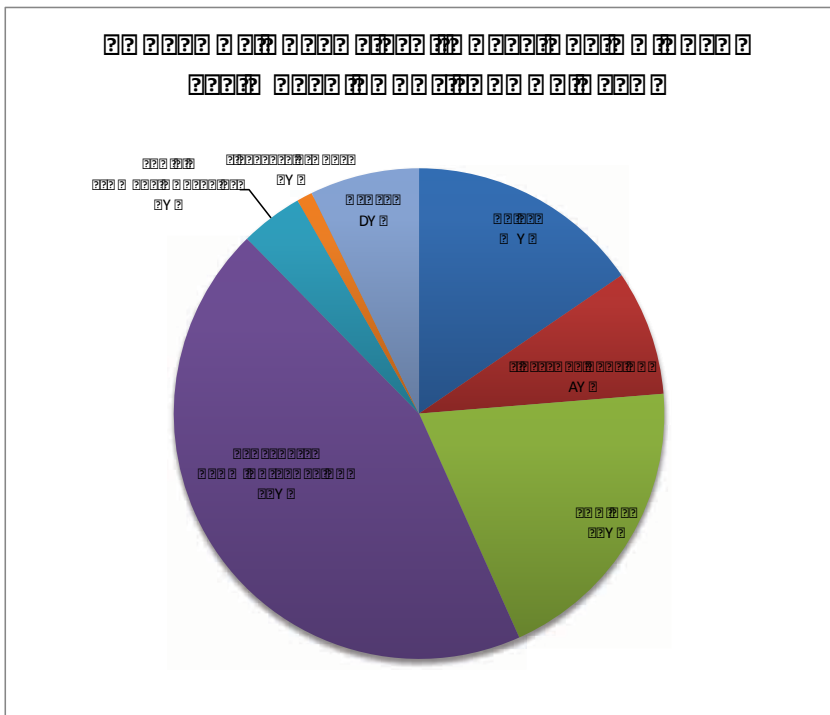


Figure 25: FTE % by land use type for Pukekohe study area

LAND USE IN PUKEKOHE			
	HECTARES	TURNOVER	
		\$000'S	FTE
DAIRY	707	3,280	15
LIVESTOCK GRAZING	1156	1,622	8
EQUINE	191	1,910	19
VEGETABLE GROWING/CROPPING	358	5,778	43
FRUIT, FLOWERS, NURSERIES	27	567	4
LIFESTYLE BLOCKS	436	218	1
OTHER	77	1,360	7
TOTAL	2952	14,735	97

Figure 26: Measure by land use type by hectare, turnover and FTE for Pukekohe study area

In the Pukekohe area, dairy cattle make up 24% of the land use and 22% of the study area turnover with 16% FTEs. Livestock grazing make up 39% of the land use, 11% of turnover and 8% of the FTEs. Lifestyle blocks make up 15% of land use, 2% of turnover and 1% of employment. Poultry farming make up 7% of turnover and 6% of FTE's.

Vegetable growing has the highest annual % turnover and FTES, making up 12% of the land use, 39% of annual turnover and 44% of the FTES.

Horse farming and breeding make up 6% of the land use, 13% of turnover and 20% of the FTEs.

It is important to note however that facilities such as the Franklin Trotting Club who own a significant parcel of land leased by trainers as well as having key infrastructure for the racing industry such as the training track has no classification in the AgriBase dataset. The Counties Racing Club, owner of Pukekohe Park, the training and racing track for the galloping industry is listed as horse farming and breeding in the AgriBase dataset. Given this, the variance between horse farming versus an intense operation such as horse training per hectare would be significant.

Equine events for example also contribute to the local economy making this very difficult to measure. For instance, take the Auckland Cup week in 2010, where Franklin based trainers earned takings exceeding \$1.4 million, with 70 horses from a field of 130 coming from South Auckland.

New Zealand exported a total of 1,354 horses through the Karaka Bloodstock Centre during the 2008/2009 year, with a value estimated at \$140M. A total of 900 horses were imported in the same period. In addition, a considerable number of racing thoroughbred and harness horses from across New Zealand and internationally were regularly housed in facilities in the Pukekohe study area prior to or after racing.¹³

¹³ Franklin Plus 2010 – A Development Strategy for a Rural Based Economy Volume 1

A general rule of thumb with regards to employment in the racing industry would be 1 person employed for every 4 – 6 horses. The constant movement of horses in and out of the area, the impact of events and the inconsistencies of the AgriBase dataset make it incredibly difficult to accurately value the equine industry.

We believe that the equine industry in Pukekohe is grossly undervalued as a result of this.

PUKEKOHE STUDY AREA			
Land Use	Hectares	\$ Turnover	FTE
Beekeeping	4	40,000	
Arable Cropping	87	87,000	
Beef Cattle	679	679,000	3
Dairy Cattle	707	3,279,773	15
Deer Farming	57	57,000	
Dairy Dry Stock	128	593,792	3
Flowers	3	63,000	
Fruit Growing	14	294,000	2
Goat Farming	1	1,000	
Grazing Other Stock	105	105,000	1
Horse Farming and Breeding	191	1,910,000	19
Lifestyle Block	436	218,000	1
Plant Nursery	10	210,000	2
Poultry Farming	4	1,000,000	6
Sheep Farming	26	26,000	
Sheep and Beef	160	160,000	1
Vegetable Growing	271	5,691,000	43
Unspecified	69	320,091	1
Total	2952	14,734,656	97

Figure 27: Hectares, Turnover and FTEs by land use for Pukekohe Study area

The Pukekohe study area turnover is estimated at around \$14.7m with the highest turnover being generated by vegetable growing at over \$5.7m, followed by dairy at \$3.3m and then horse farming at close to \$2m and poultry farming at \$1m.

6.2 Significance of the Pukekohe area to the local economy

One of the country's largest packhouse operations can be found on the western side of the Pukekohe study area. Vegetables are brought up from farms across the Auckland and Waikato regions, graded, processed and packed at the Pukekohe packhouse.

During season the packhouse works 24/7. The site services 200 staff, fluctuating to between 500 – 800 seasonal workers working across multiple sites enabling an all year round supply of crops.

Vegetables brought into the packhouse are expected to be packaged and delivered to supermarkets within 6 hours. Vegetables packaged here are mostly potatoes, onions, carrots, brassicas and squash.

Waste product from the packhouse site services the company dairy farm, south of Pukekohe. Four other sites are leased for storage as a precautionary measure given that on site processing is not a permitted activity. Future expansion of the site would require certainty with regards to land use planning.

Water quantity and quality is important and whilst growers may have access to water supply from the aquifers in Franklin, increased urbanisation may limit future water supply.

Pukekohe is the main service town in the Auckland South rural area and whilst this study does not include analysis on Pukekohe town, it is worth noting that the town has developed as a major rural service town servicing the rural economy. Pukekohe is a catchment for the agricultural and horticultural industry from as far south as Huntly to rural Manukau.

This linkage is important to note, growers whose packhouses are located in close proximity to Pukekohe town would be undertaking the bulk of their operation in the Waikato areas of Pukekawa, Matamata, Otorahonga, Waeranga.

Services out of Pukekohe include:¹⁴

- Horticultural/agricultural supplies (fencing, water tanks, processing equipment, etc)
- Seed/soil nutrient specialists providing expert advice to farmers and horticulturalists, also suppliers of seeds, fertiliser, etc
- Machinery servicing – tractors, specialist packhouse machinery, other farm equipment and processing equipment which is too big or heavy to transport far to be serviced or has to be serviced/repaired on site.
- Banking/groceries/fuel for those working in the rural sector.
- Social and recreational services provided by schools, medical centres, libraries, local stores, halls and clubrooms.

Pukekohe growers use both ports of Auckland and ports of Tauranga. The Auckland port services the Pacific markets and the Tauranga port, the northern hemisphere markets. International demand from Asia for fresh produce is expected to increase.¹⁵

“Economies such as Pukekohe which have traditionally relied on rural people visiting and buying services, show this rural dependence and history in their physical layout and heritage. The stockyards in Pukekohe which are close to the town centre, still function as sale yards.

¹⁴ Franklin Plus 2010 A Development Strategy for a Rural Based Economy Volume 1

¹⁵ D Balle, Balle Bros

The Pukekohe A & P Showground and stockyards have been in existence for over a 100 years and form part of the character and identity of place.¹⁶ The Pukekohe A & P Showgrounds provide the platform for the Sheep and Beef industry to showcase their breeds and play a key role in the promotion and establishment of the different breeds. The Showgrounds also play a key role in the equine industry and the promotion of the various breeds of sporthorses. The Showgrounds are located close to the Franklin Trotting Club and form part of the Study area.

The south eastern area of the Pukekohe study area is a catchment area for the equine industry with the racing industry firmly established in this area. Racehorses arrive from all over New Zealand and use the training establishments as their base for racing in Auckland and the Waikato and on their way to Australia. The area is also used for spelling (resting) of horses.

7 Lifestyle blocks

Lifestyle blocks comprise 69% of the Karaka/Drury study area, 11% of Paerata and 20% of the Pukekohe study areas.¹⁷ There is insufficient data to extrapolate the productive value of lifestyle blocks in the study area. However it is believed that the following types of farming would generate earnings per hectare as indicated in the table below. A separate study determining the productive value of lifestyle blocks in rural Auckland would be useful, given the direct and indirect and induced effects that are generated as a result of this activity. We believe that measuring these effects would show the real value of this activity.

Production Potential of Lifestyle Blocks using various types of farming	
Farming Types	Earnings \$/ha
1.Home Consumption	300
2.Grazing	400
3.Sheep & Beef	700
4.Cropping	700
5.Horticulture	5,000
6.Intensive	100,000

Figure 28: Estimated earnings per hectare for Lifestyle blocks by land use type

Assumptions:

1. Food grown for own consumption
2. Grazing other peoples animals
3. Growing own sheep & beef
4. Leasing land for cropping
5. Sharing in horticultural crop
6. Doing own intensive farming

¹⁶ Franklin Plus 2010 A Development Strategy for a Rural Based Economy Volume 1

¹⁷ Auckland Council data

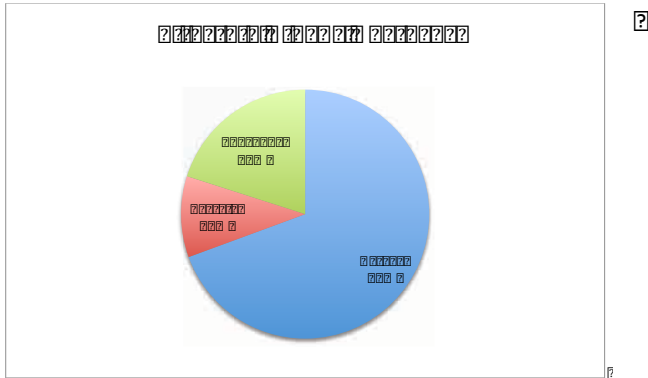


Figure 29: % land area of lifestyle blocks in the Greenfields Study Area

In the Auckland South Raw Data Area¹⁸ there are 720 lifestyle blocks under 2ha, 1094 lifestyle blocks of 2 to 4ha, 825 lifestyle blocks of 4 to 8 ha, 391 lifestyle blocks of 8 to 20 ha and 559 lifestyle blocks of 20 ha and greater in the three study areas. It is believed that lifestyle blocks under 4ha are unlikely to be highly productive with the exception of glasshouse activity. 50.5% of the lifestyle block count in the three study areas are under 4ha. Diagram 6 shows lifestyle blocks up to 8ha in size in the three study areas.

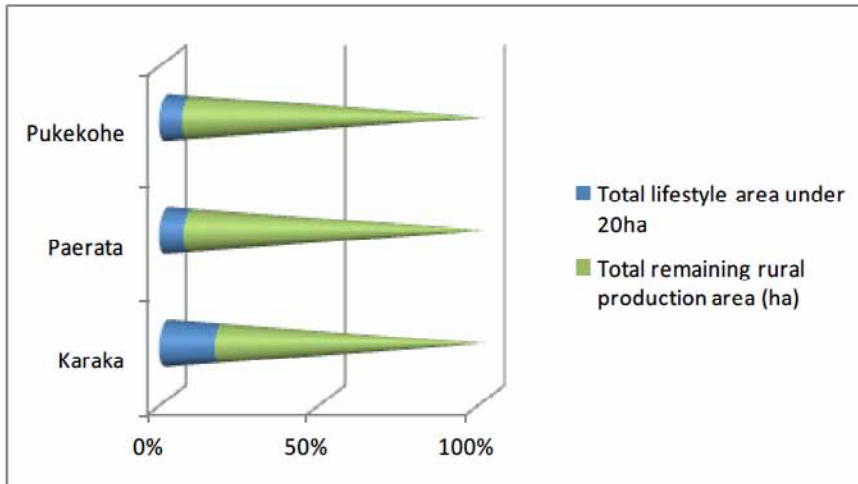


Figure 30: Total lifestyle area of 20ha and under as a % of the total rural production area.

In the Karaka area, lifestyle blocks of 20ha and under make up 17% of the total rural production area. In the Paerata area, lifestyle blocks of 20ha and under make up 7.46% of the total rural production area and in Pukekohe 7% of the total rural production area is in lifestyle blocks of 20ha and under.

Study Area	Total lifestyle area under 20ha (%)	Total remaining rural production area (ha) (%)
Pukekohe	7%	93%
Paerata	7.46%	92.54%
Karaka	17%	83%

Figure 31: Table showing total lifestyle area under 20ha per study area as a percentage of the total rural production area.

¹⁸ Data supplied by the Auckland Council – “Agribase by Property Auckland Rural South”

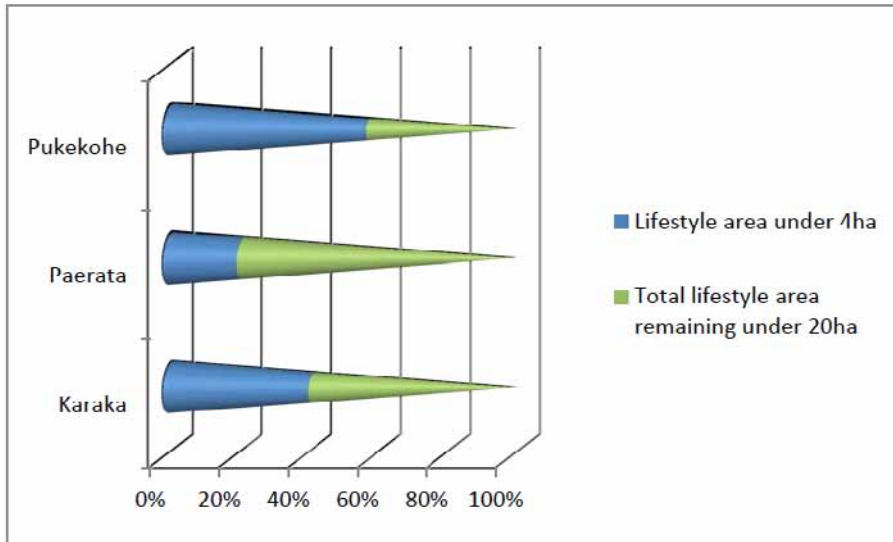


Figure 32 Total lifestyle area of 4ha and under as a % of the total lifestyle area of 20ha and under.

In the Karaka area, 41.11% of the lifestyle area of 20ha and under is made up of lifestyle blocks of under 4ha. In the Paerata area 20.84% of the lifestyle area of 20ha and under is made up of lifestyle blocks under 4ha and in the Pukekohe area, 56.93% of lifestyle blocks under 4ha make up the total area of lifestyle blocks under 20ha.

Area	Lifestyle area under 4ha (%)	Total lifestyle area remaining under 20ha (%)	Area
Pukekohe	56.93%	43.07%	Pukekohe
Paerata	20.84%	79.16%	Paerata
Karaka	41.11%	58.89%	Karaka

Figure 33 Table showing total Lifestyle area under 4ha as a percentage of the total lifestyle area under 20 ha

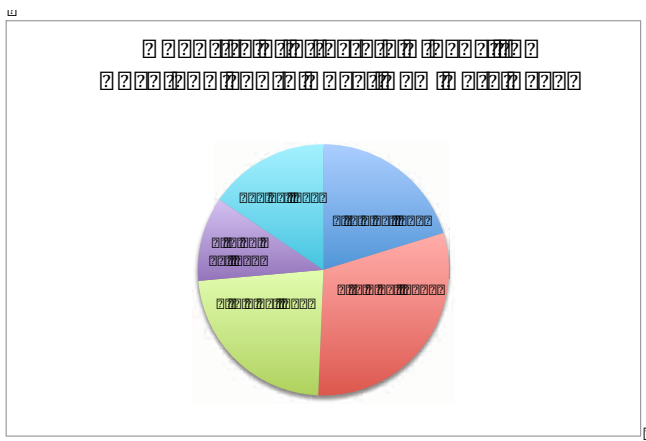


Figure 34: Quantity of lifestyle blocks by parcel size in the Greenfields Study area

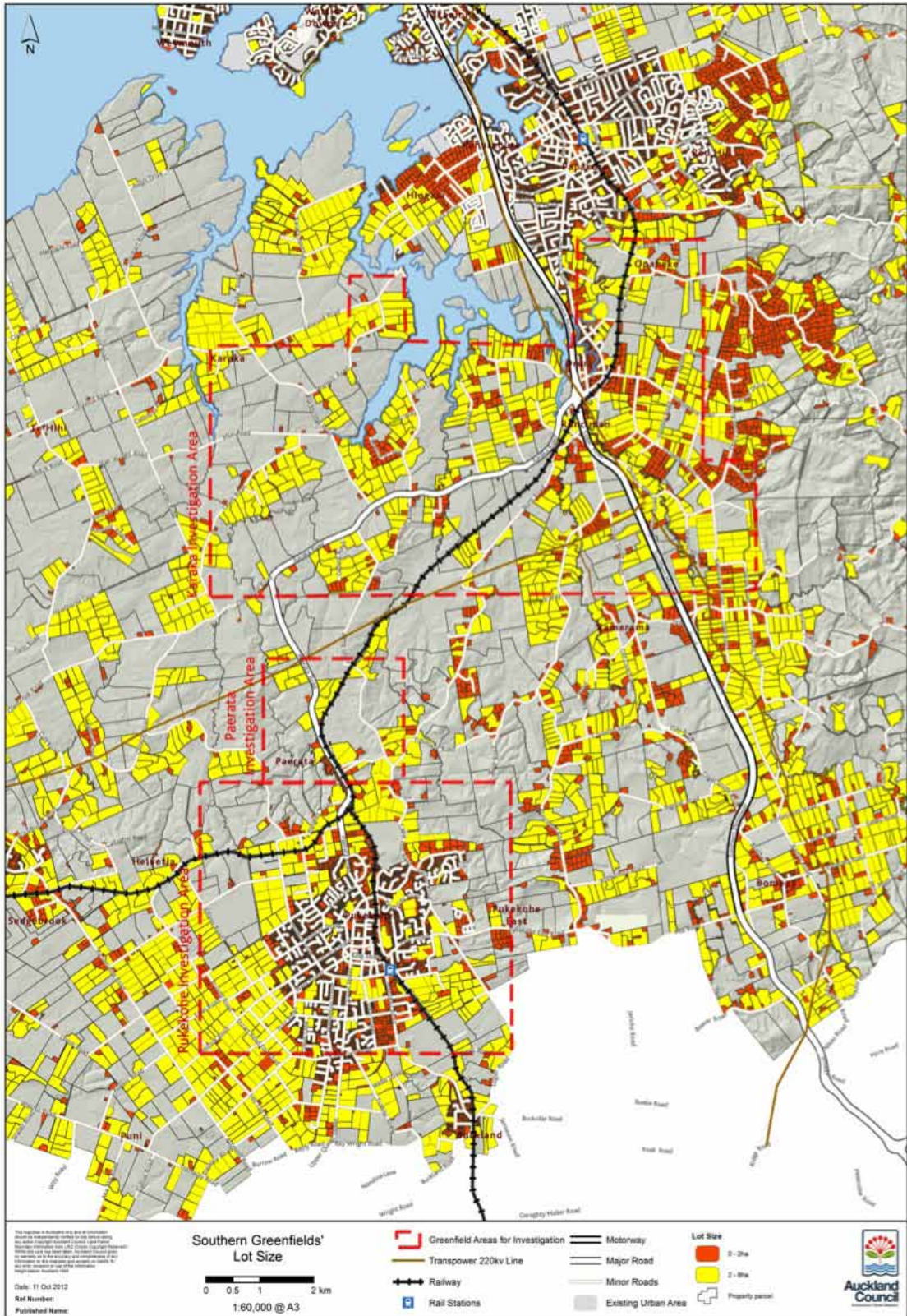


Diagram 6: Lot sizes from 0-2 ha and 2 – 6 ha in the Greenfields Study Area

8 Soils

“Many Councils use the LUC classification to define soils that are worthy of protection for their potential life supporting capacity and protection for future generations. They define these soils variously as either being high quality, elite, prime agricultural or versatile.

LUC class 1 and 2 soils are the most versatile in New Zealand, but only account for about 6% of the total area of the country. Franklin has one of the largest proportions of these classes, where about 20% of the District is located on these soils.”¹⁹

The New Zealand Land Use Capability (LUC) Classification is defined as, “a systematic arrangement of different kinds of land according to those properties that determine its capacity for long term sustained production. Capability is used in the sense of suitability for productive use after taking into account the physical limitations of the land.”

There are eight classes with limitations to use increasing and versatility of use decreasing from Class 1 to Class 8.

LUC Classes 1 to 4 are suitable for arable and vegetable cropping, horticulture (Including vineyards and berry fields), pastoral grazing, tree crop or production forestry use.

- Class 1 is the most versatile multiple-use land with minimal physical limitations to arable use (deep, resilient, easily worked, well drained, fine textured, naturally fertile and flood free).
- Class 2 is very good land with slight limitations to arable use, readily controlled by management and soil conservation practices. Slight limitations include texture, moderate soil depth, structure and difficulty in working, potential erosion, potential flooding.
- Class 3 has moderate physical limitations to arable use. These may restrict the choice of crops and the intensity of cultivation, and/or make special soil conservation practices necessary. Limitations may include susceptibility to erosion under cultivation, shallow or stony soils, wetness or water logging after drainage, occasional damaging overflow, low moisture holding capacity, structural impediments to cultivation or low natural fertility.
- Class 4 land has severe limitations to arable use. These limitations substantially reduce the number of crops that can be grown, and/or make intensive soil conservation and management necessary. Some Class 4 land is suited to vineyards and berry fields.

¹⁹ Land Use Capability classification and assessment of soil use in relation to Kingseat Village Structure Plan, Soil and Land Evaluation Ltd.

- Classes 5 to 7 are not suitable for arable or vegetable cropping but are suitable for pastoral grazing, tree crop or production forestry use, and in some cases vineyards and berry fields.
- Class 8 is unsuitable even for grazing or production forestry, and is best managed for catchment protection, and/or conservation or bio diversity.

LUC Subclasses identify main kinds of physical limitations or hazards to use. Four limitations are recognised;

- Erodibility
- wetness
- soil limitations within the rooting zone
- climate.

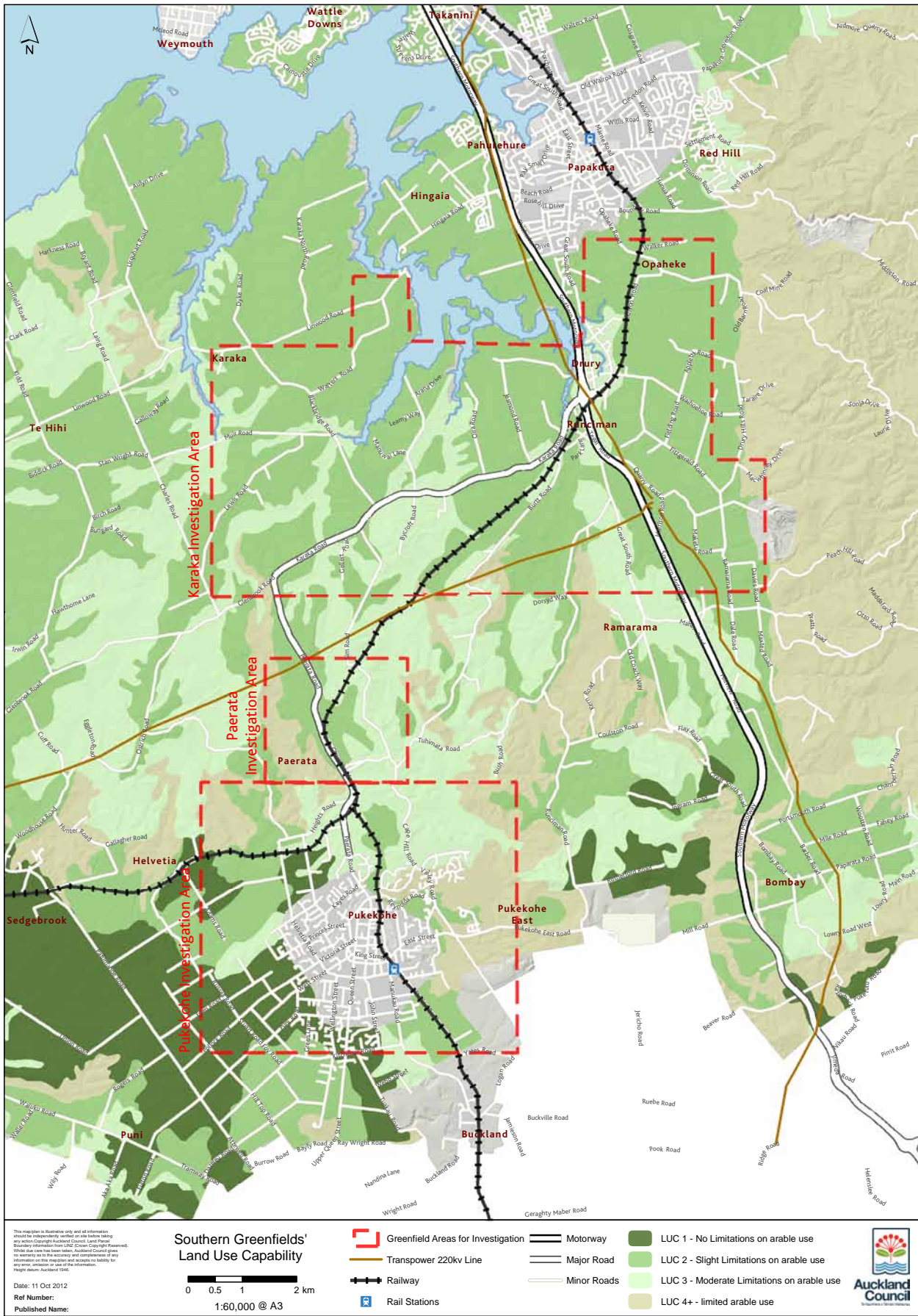


Diagram 7: Auckland South Greenfields Study area land use capability

Karaka/Drury Study area

The Karaka/Drury Study area is made up of Classes 2 and 3 under the LUC and is dominated by Class 2 soils.

Class 2 under the LUC is very good land with only slight limitations to arable use readily controlled by management and soil conservation practices.

Paerata Study area

The Paerata Study area is made up of Classes 2, 3 and 4. Classes 3 and 4 have limitations to use and may restrict the choice of crops and intensity of horticulture in this area.

Pukekohe Study area

The Pukekohe Study area is made up of Classes 1, 2, 3 and 4. Class 1 under the LUC most versatile multiple-use land with minimal physical limitations to arable use.

8.1. Factors to be considered in regard of land

“Assessments of land and soil value often focus on presence or absence of limitations. The best land is that with no or few limitations.

Current legal consideration of productive land references the opinion of Environment Court Judge Treadwell.

A comprehensive list of factors that require consideration was given by Judge Treadwell in *Canterbury Regional Council v Selwyn District Council* [W142/96], and guides much argument and decision in this area.

Treadwell’s range of factors to be considered is much broader than Land Use Capability. It lists a wide range of bio-physical, social and economic factors to be taken into account in recommending or otherwise a particular site for a particular crop or land use.

Productive land, and even more specifically highly productive land, will be fertile and capable of producing abundant yields of plants and other primary products. But more than this, the other factors that together make an agricultural production system viable will also be present.”²⁰

8.2 Productive use

Versatile soils are often considered as those most productive however it is worth considering the following views. Chapman defines “versatile soil/land” as the ability of land to support production and management of a wide range of crops. It is mainly assessed in terms of soil and land physical characteristics, which have few limitations, such as poor drainage or slope instability. The assessments assume that soil nutrients are not a limiting factor.

²⁰ Versatile Soils – Productive Land Report, Hawkes Bay Regional Council, 14 June 2011, Dan Bloomer, Page Bloomer Associates Ltd.

This definition mixes soil and land, and as already noted the two terms are not interchangeable. For land to be productive in an agricultural sense, it needs productive soil, but also all the other factors of successful production including such things as proximity to services and transport. The Treadwell list is relevant and is considered further in this section.

Extending the wider definition of productive land along the lines of Treadwell, versatile land will have a range of soil, climate, water resources, transport and industrial services, labour, and other resources, and absence of conflicts, that make it suitable for the production of a wide range of agricultural and horticultural products.

A sole focus on soil means that all landowners with so-called 'versatile soils' are locked into a type of production system that may be neither possible, reasonable or economic."

While a particular soil may be capable of producing food, there are many factors that also need to be available for the land to be used for productive capacity. Keenan argues:

"Urbanisation has no significant effect on the soil resource – rather it has effects on the productive capability of the land in question. The production system is what required protection, not the soil."

"The case in W142/96 Canterbury Regional Council v Selwyn District Council related to an unsuccessful appeal by Canterbury Regional Council against a suggested change to the [then] Selwyn Transitional District Plan from 5ha of farmland to permit residential development adjacent to Lincoln township.

In the decision on this matter, Environment Court Judge Treadwell stated:

The factors, which I take into account in recommending or otherwise a particular site for a particular crop, are as follows:

- Soil texture
- Soil structure
- Soil water holding capacity
- Soil organic matter stability
- Site's slope
- Site's drainage
- Temperature of the site
- Aspect of the site
- Storm water movements
- Flood plain matters
- Wind exposure
- Shelter planted
- Availability of irrigation water

- Transport, both ease and distance
- Effect of the use on neighbours
- Effects of the neighbours on the use
- Access from the road
- Proximity to airport
- Proximity to port
- Supply of labour
- Quality of that labour
- Previous cropping history
- Relevant contamination
- Sunlight hours
- Electricity
- District Plan
- Economic and resale factors

This list demonstrates the real relevance of the soil on its own. Obviously one can have an extremely good soil, which would be disqualified for a farming use by one of several of the factors above."²¹

9 Input Output analysis

The Input Output analysis uses multipliers derived from inter-industry input-output tables. These input-output tables were developed by Butcher and Partners – a recognized source for regional input-output tables and multipliers.

The measures of the Auckland South Rural area identified are;

1. Gross Output (Direct Turnover)	\$75,097,763
2. Value Added (GDP) Margin	\$31,996,771
3. Direct, Indirect and Induced Effects	\$55,167,437
4. Employment Impact	452

Comments;

1. Gross output of **the industry** is made up of the sum of
 - i. Salaries and wages
 - ii. Income from self employment
 - iii. Depreciation
 - iv. Profits
 - v. Indirect taxes less subsidies
 - vi. Purchase of goods
 - vii. Purchase of services

²¹ Versatile Soils – Productive Land Report, Hawkes Bay Regional Council, 14 June 2011, Dan Bloomer, Page Bloomer Associates Ltd.

2. Value added multipliers measure the increase in output generated along **the production chain**.
3. Direct, indirect and induced effects. The industry purchases materials and services from the supplier firms, who in turn make further purchases from their suppliers. This generates an indirect effect. The induced effects occur when persons employed in the direct environment and in firms supplying services earn income, which after tax is deducted, is then spent on consumption and or savings. Hence, for any amount spent in an area (direct effect), the actual output generated from that spend is greater once the flow on activity generated (indirect and induced effects) is taken into account.
4. Employment Impact multipliers are based on every \$1 million spent in an industry for one year. It provides a measure of total labour demand associated with gross output.

10 Exports

The location of poultry, flower producers, horses, vegetable growing and processing/packaging in the three study areas has arisen as these industries, amongst needing to operate within an efficient and effective productive system (refer 8.2), also need to be close to their market and the ports. For some producers, timing is critical. Flowers and poultry operate within a window of a few hours in terms of getting their goods to airfreight. Access to the Auckland International Airport is therefore critical for some of these industries. The same applies for the importation of plant material, essential for the horticulture industry in Auckland.

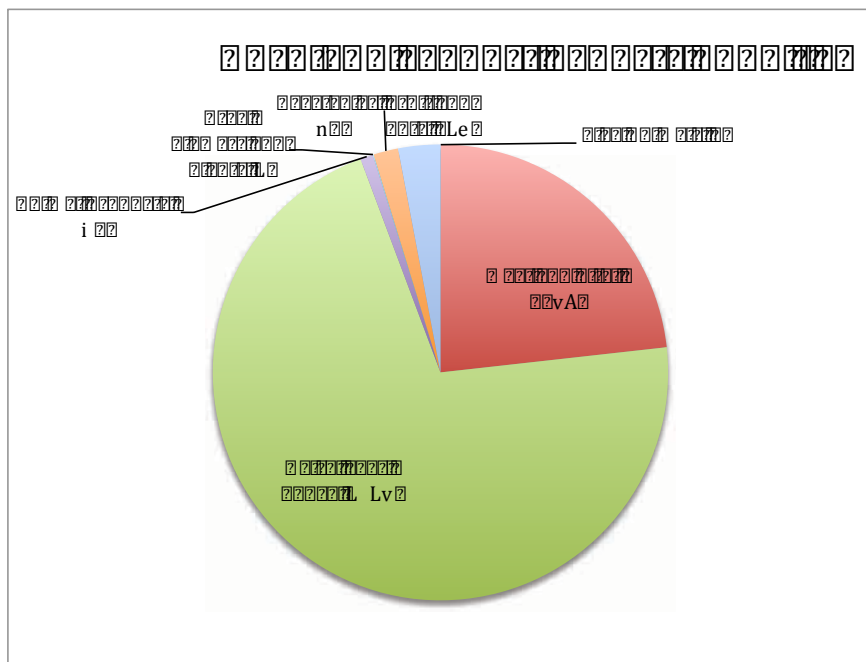


Figure 35: NZ wide rural products passing through Auckland Seaport Exports 2011 by \$m

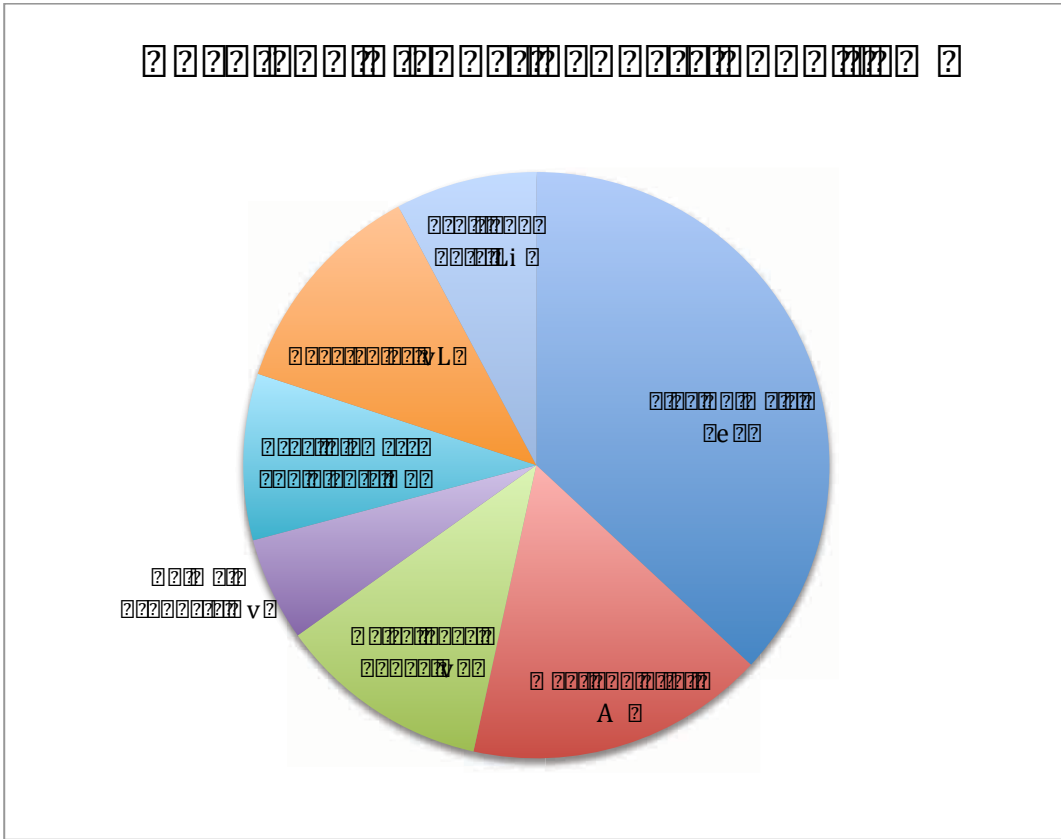


Figure 36: NZ wide rural products passing through Auckland Airport Exports 2011 by \$m

Product	Value (\$m)	Value (\$m)
Apple	4K	4K
Avocado	1.5	1.5
Banana	1.5	1.5
Beef	1.5	1.5
Broccoli	1.5	1.5
Carrots	1.5	1.5
Cheese	1.5	1.5
Corn	1.5	1.5
Cucumbers	1.5	1.5
Eggs	1.5	1.5
Fruit	1.5	1.5
Grains	1.5	1.5
Horses	1.5	1.5
Meat	1.5	1.5
Milk	1.5	1.5
Vegetables	1.5	1.5

Figure 37: Exports of Rural based Products through Auckland Seaport and Airport

The rural based products identified in the export table above comprise those most likely to be found in Franklin area. The three study areas are known to export plants, flowers, horses, and vegetables amongst others.

11 Future potential of rural production in the Study areas

The economic diversity of the three study areas has arisen as a result of the production systems that exist in these areas. Some of which include:

- Infrastructure such as the roading network to the ports and to markets across NZ
- Gas supply (although this is now considered an inhibitor to growth given that the supply is fully contracted north of Rotowaro, making any future expansion requiring gas impossible)
- Access to labour (supply and quality)
- Access to quality water and quantity
- Good soils (applicable only to some agricultural/horticultural activities)
- Biosecurity controls
- Climate

It is worth noting that the study area includes rural activities generating exports, some of which are easily scaleable.

Franklin Input-Output Table, YE Mar 2007 (\$2007)			
	Outputs Consumed in Franklin	Exports to other Regions and International	Total
Horticulture and Fruit Growing	6.68	164.166	174.03
Livestock and Cropping Farming	54.194	10.379	66.43
Dairy and Cattle Farming	21.68	82.4	92.65*
Other Farming	7.802	58.48	66.4
Total	90.356	315.425	306.86

Note * Change in inventories are taken into account.

Source: Butcher and Partners

Figure 38: Franklin Input – Output Table YE March 2007

The Input Output table, figure 34 shows that \$90m of Franklin's outputs (rural production such as food) is consumed in Franklin and that \$315m of its rural production is exported out of the Franklin district. In this instance the Franklin District refers to the former Franklin District area.

"The GDP of the Franklin District in 2008 was approximately \$1.7b. This is 2.6% of the Auckland region's GDP and 1% of the National GDP. Value added per employee in Franklin was \$95,779 in 2007. This is 11.5% higher than the New Zealand average. This together with the District's proximity to Auckland, and its important supply role, is a better indication of the true value of Franklin to the national economy, making the District more important to New Zealand than the 1% GDP suggests."²²

²² Hughes, Warren Dr, Department of Economics, University of Waikato, Economic Profile, Franklin District 2007

12 Conclusion

12.83% of the Greenfields Study rural production area comprise a total lifestyle area of 20 ha and under. Whilst the productive outputs of a lifestyle block greater than 2 ha but smaller than 6 ha may have limited capacity, and may provide justification for further urban development, consideration will need to be given to the complete production system currently operating within the Greenfields Study areas.

It is clear that parts of the Karaka Study area comprise some of the most productive horticultural and agricultural activity in the South Auckland area. Most productive would be the glasshouse industry using 46 ha of land and generating around \$28m in turnover. Poultry using 7 ha of land and generating close to \$1m in turnover also generate a generous return for a more intensive activity. The Karaka area also generates some of Auckland's exports.

The area to the west of the Karaka Study area plays a very important role in sustaining the dairy industry in South Auckland.

The Drury study area is dominated by lifestyle blocks of under 4 ha and it seems that the production system in this area may have been compromised by urban development.

The Paerata study area is dominated by the dairy industry with the south eastern end of Paerata compromised by urban development. Paerata was previously identified by the Franklin District Council as a site suitable for business land development. Around 115 ha was identified for this purpose. Paerata is located adjacent to the main trunk line and an arterial route to Auckland and Pukekohe. Dairy farms in the Paerata study area generate around \$3.9m in turnover and use 852 ha of land. There are no intense horticulture activities within this study area.

The study area West of the Pukekohe, is home to one of the nation's largest packhouses. The packhouse is significant as it grades, packages and processes vegetables from all over New Zealand and in season operates 24/7.

In the eastern side of the Pukekohe study area, the equine industry is considered to be a very important economic cluster that has significant backward and forward linkages.

Whilst there are parts of each of the three study areas with limited capacity to generate a high level of income, consideration must be given to the existing production system in place and the strength of such a system to the local economy.

Currently the three study areas collectively generate \$75m in direct turnover, \$32m in value added (GDP) and the direct/indirect/induced effects generate \$55m. Refer 9.

Productive land, and even more specifically highly productive land, will be fertile and capable of producing abundant yields of plants and other primary products. But more than this, the other factors that together make an agricultural production system viable will also be present.²³

²³ Versatile Soils – Productive Land Report, Hawkes Bay Regional Council, 14 June 2011, Dan Bloomer, Page Bloomer Associates Ltd.

It is clear that these production systems exist in parts of the Karaka and Pukekohe study areas. It is these systems that are worthy of protecting. Highly fertile soils should not be the justification for limiting urban growth but rather the existence of highly efficient and established production systems, supported by highly fertile soils if needed by industry type, should be considered when considering development in greenfields areas.

Glossary of Economic Terms

Employment

Employment is work done by employees and self-employed persons, and is measured in Full-Time-Equivalent jobs (FTEs). A person working part time all year is deemed to be equivalent to 0.5 FTEs. Where work is seasonal, the conversion to FTEs is based on 12 months work per year. So a seasonal worker working full time for six months per year is 0.5 FTEs, and a part time seasonal worker working ten hours per week for 4 months is 0.1 FTEs.

Output

Output is the value of sales by a business. In the case of wholesale and retail trade it is the total value of turnover (and not simply gross margins)²⁴.

Value Added

Value added includes household income (wages and salaries and self-employed income), and returns to capital (including interest, depreciation and profits). It also includes all taxes. Put another way, Value Added is equal to Output less costs other than wages, salaries, depreciation and interest. From an accounting perspective it is equivalent to EBITDA plus Wages & salaries.

Household Income

Household income is the gross earned income of households. It includes the income of self-employed persons. There is sometimes considerable uncertainty as to the proportion of business income, which goes to households, especially for small businesses. In assessing this proportion, dividends and interest payments have been excluded. When estimating indirect economic impacts, one needs to know the increase in household income, which occurs in the region.

Direct Economic Impacts

The direct impact is the output and employment of the business itself (in this case the farm). The direct employment is of people who work on the farm. The direct output is the value of farm gate sales. The direct value added is the value added on the farm. It is equivalent to operating surplus, before interest or tax, plus wages, salaries and drawings.

Indirect Economic Impacts

The indirect impact arises from increased spending by farms as they buy additional inputs so that they can increase production to meet plant demands. This indirect effect can be envisaged as an expanding ripple effect. For example, the farm buys fertiliser, the fertiliser factory has to employ more staff and buy more electricity, so the electricity industry expands. The electricity industry has to employ more staff and buy more fuel, so the fuel company increases its output. And so on. All the increased employment, output and value added (apart from that at the farm) are the indirect effect.

Note that indirect effects only include "upstream" effects (via buying more inputs), but do not include any stimulated development downstream, such as processing vegetables.

²⁴ Care has to be taken in combining retail sales figures with employment per \$million of output from input-output tables. In these tables, output is generally defined as gross margin. By contrast, business statistics usually refer to employment per \$million of turnover.

Induced Economic Impact

The induced impact is the result of increased household income being spent, and leading to a further ripple effect of increased employment, output and income.

Flow on Effects / Upstream Impacts

The sum of indirect and induced effects is sometimes termed the flow on effects, or upstream impacts.

Down Stream Impacts

Impacts which are not driven by an activity's demand for extra inputs, but which might arise as a result of a particular activity, are sometimes called the "Downstream impacts". The obvious example in the farming industry is the processing sector, where there is whole new set of direct and flow on effects. These effects are not included in the initial farm impacts, which focus only on the supply of inputs.

Total Economic Impacts

The total Type I impact is the sum of the direct and indirect impacts, and a Type II impact is the sum of direct, indirect and induced impacts.

Multipliers

A Type I multiplier is the ratio of (direct + indirect) impacts to direct impacts, and a type II multiplier is the ratio of (direct + indirect + induced) impacts to direct impacts. The Type II multipliers include the impact of household spending and hence will always be greater than a Type I multiplier. Both multipliers will always be greater than 1. Note that downstream effects (whether positive or negative) are not included in the multiplier, and must be calculated separately.

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David has a degree in Agriculture Commerce and Economics. He is an experienced business operator with a strong analytical bias. Initially David carried out research and marketing for some of New Zealand's key manufacturers. Industries included, steel ,plumbing, building products and various engineering and materials handling disciplines.

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Economic Profile, Franklin District 2007, Dr Warren Hughes, Department of Economics, University of Waikato

Economic Impact Report on the New Zealand Sporthorse Industry, Alex Matheson, University of Waikato

Site visits/interviews (1 hour each)

NZ Hothouse

Gellerts Nurseries

Balle Bros

Vet Associates, Karaka

Federated Farmers (diary)

Mark Ball, ex Mayor of Franklin

Telephone Interview (30 minutes)

K Reeves, Dairy Farmer

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APPENDIX A: EQUINE PROPERTIES IN THE FORMER FRANKLIN DISTRICT

