

Warkworth Structure Plan

Review of dwelling and employment
yields

14 June 2019 – final

m.e
consulting



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1 Introduction

1.1 Background

Warkworth is a rural town nearly 60km north of the Auckland CBD, and 28km north of the nearest large commercial centres to the south at Orewa and Silverdale. Warkworth is a Satellite Town in the Auckland Plan, and a substantial amount of residential and business growth is projected to locate in and around the existing Warkworth urban area in the coming decades.

To accommodate that future growth, around 1,000ha of land adjacent to the existing town was zoned Future Urban Zone (FUZ) in the operative in part Auckland Unitary Plan (AUP). That FUZ zoning indicates an intention that the land will in the future change from the current rural use to some alternative (urban) use, and is therefore a transitional zone. Conversion to use for urban activities can only occur following due process, which involves preparation of a structure plan and subsequently a plan change to rezone the land.

1.2 Previous work

Auckland Council (AC) undertook several different phases of research into possible business and residential yields of the FUZ, including preliminary high-level assessment contained in the Supporting Growth project¹ and the Future Urban Land Supply Strategy (2015, and then a refresh version in 2017). Drawing on those high-level documents, in 2017 Council commissioned M.E Consulting to review Council's work and make independent recommendations as to the appropriate area required in Warkworth for and location of future business land (centres, Light and Heavy Industry, General Business and Mixed Use). The recommendations took into account the extent of urban zonings in Warkworth, the characteristics and size of Warkworth's catchment and growth projections for the area. The culmination of that work was the "Warkworth Business Land Assessment".²

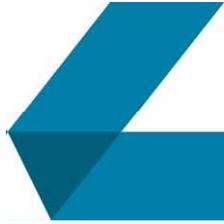
Auckland Council considered all of that background information, and then prepared a draft Warkworth Structure Plan (DWSP), to guide development of the town's Future Urban Zone (FUZ). The DWSP included a preferred zoning layout, associated with which Council estimated potential dwelling and employment yields from the zones proposed. The creation of the DWSP was an iterative process whereby the feedback from various specialists influenced the Plan, and community feedback was also taken into account.

1.3 Current position

Having now completed that iterative process of taking into account specialist and community feedback, Council adopted the finalised Warkworth Structure Plan (WSP) on June 4, 2019.

¹ https://ourauckland.aucklandcouncil.govt.nz/media/10276/2016_12_21-supportinggrowth.pdf

² M.E Consulting, 13 June 2018. The report is summarised by Council, and provided in full, at: <https://www.aucklandcouncil.govt.nz/have-your-say/topics-you-can-have-your-say-on/warkworth-structure-plan/docsbusinesseducation/warkworth-structure-plan-business-land-topic-paper.pdf>



1.4 Objective

The objective of this report is to review the WSP from a number of perspectives:

- Review the dwelling and employment yields provided by Council and compare against independently derived yields, quantifying and explaining any differences.
- Using dwelling and employment yields, assess local employment provision, and compare to the current provision.
- Assess retail floorspace yields.
- Assess the location of the proposed business land zones, including centres, to understand the likely attractiveness to the market. This includes consideration of locations attributes such as topography, accessibility, and urban form.



2 Warkworth Structure Plan

This section provides an overview of the WSP's assumptions, geographic layout, and dwelling and employment yields as the basis for the following review.

2.1 Preferred zoning

The WSP's zoning divides the FUZ into 33 sub-areas that are defined by the zoning that will apply to them, and each relates to a contiguous, discrete geographic area. In total 997.8ha of land is included in the WSP, although not all of that will be developable (Figure 2.1). In fact, a significant proportion will not be developable, given the area's geographic characteristics, and the need to provide for roads and reserves:

- 240.1ha falls within areas not for development, including: flood plains, streams, wetlands, significant ecological areas, covenanted bush, historic heritage areas, existing open space, future esplanade reserves and existing roads (24% of the 997.8ha).
- Of the balance of 757.7ha:
 - 30% (224.5ha) is assumed for the purposes of this exercise to be required for roads.
 - 13.9% (105.2ha) is assumed to be required for other uses such as parks, schools and community facilities. The actual figure applied in the calculation is 15%, however that is not applied to business land, which is excluded from that requirement, bringing the average across all zones down to 10%.
 - 57% (428.0ha) is the net developable area (NDA). That area equates to 43% of the total 997.8ha.

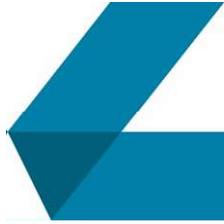
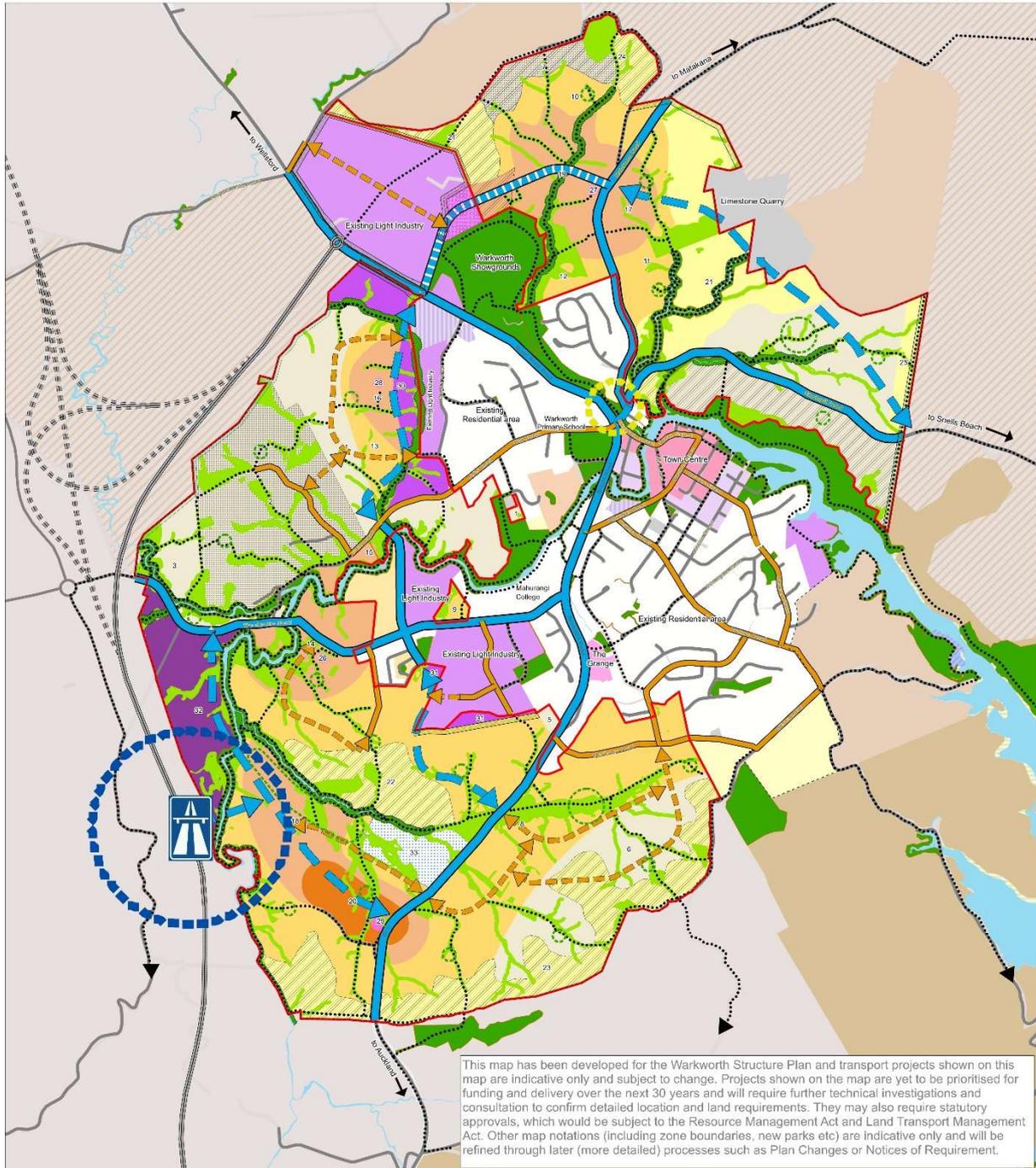


Figure 2.1: WSP land areas by zone

Future zones	Gross area (ha)	Net developable area (ha)	Share of NDA
THAB	15.2	6.8	2%
Mixed Housing Urban	143.6	57.5	13%
Mixed Housing Suburban	268.1	112.1	26%
Single House	295.6	124.3	29%
Large Lot	192.1	84.0	20%
Local Centre	1.0	0.3	0%
Neighbourhood Centre	0.9	0.5	0%
Business - Light Industry Zone	27.4	14.0	3%
Business - Heavy Industry Zone	37.4	19.1	4%
Orchard	16.3	9.3	2%
Total FUZ	997.8	428.0	100%
Residential	914.7	384.7	90%
Centre and Business	28.3	34.0	8%
Other	16.3	9.3	2%

Within the 428.0ha NDA, the predominant zoning type is residential, making up 90%, or 384.7ha. Centres and business areas together account for 8% (34.0ha, and other zone types (Morrison's Orchard)) 2%.

Figure 2.2: Warkworth Structure Plan zoning map



Warkworth Structure Plan

Date Printed: 27/05/2019

<ul style="list-style-type: none"> New Interchange - south facing ramps only Ara Tūhono - Warkworth to Wellsford Indicative Alignment New Collector Roads with cycleways (Potential routes) Collector Roads (Upgrade existing road including cycling provision) Arterial Roads (Upgrade existing road including cycleways) New Arterial Roads with Cycleways (Potential routes) Malakana Link Road - Te Honohono ki Tai 	<ul style="list-style-type: none"> Ara Tūhono - Pūhōi to Warkworth (under construction) Rural Urban Boundary (RUB) Landscape Screening Area Potential buffering/screening area from motorway Protection areas (not for development) Existing Open space Future esplanade reserves (20m) on subdivision Indicative locations of new open space 	<ul style="list-style-type: none"> Study Area Business case for long term improvements to the Hill Street intersection Areas for further landscape protection controls Business - Heavy Industry Zone Business - Light Industry Zone Business - Local Centre Zone Business - Neighbourhood Centre Zone Area for potential increase to minimum site size 	<ul style="list-style-type: none"> Momon's Heritage Orchard Residential - Large Lot Zone Residential - Mixed Housing Suburban Zone Residential - Mixed Housing Urban Zone Residential - Single House Zone Residential - Terrace Housing and Apartment Buildings Potential investigation of rezoning 'live' zone Indicative Greenway routes (walkways/cycleways) (Auckland Council, Rodney Local Board)
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The geographic distribution of the WSP's zones are shown in Figure 2.2. Notable elements of that zoning include:

- A Local Centre zone in the south of Warkworth, adjacent to the current SH1 (labelled Area ID code 29 in Figure 2.2 and Figure 2.4)
- Three Neighbourhood Centre zones:
 - To the north-east of the Warkworth Showgrounds around where Matakana Rd leaves current urban Warkworth (Area 27).
 - West of the existing Hudson Rd Light Industry zone (Area 28).
 - Near where Woodcocks Rd and Falls Rd intersect (Area 26).
- Three main areas of Industry zone:
 - A Light Industry zone adjacent to the live-zoned Light Industry zone along Hudson Rd, and extending as far north as SH1 and south to Falls Rd (Area 30).
 - Small areas adjacent to the existing Morrison Drive Light Industry zone (Area 31).
 - A Heavy Industry zone in the western-most part of the FUZ, stretching from the intersection of Wylie and Woodcocks Roads (in the north) to about 1km south in a currently rural area, adjacent to Ara Tūhono, the new alignment of SH1 (Area 32).
- Large areas of residential zone, with generally higher density zones (Terrace Housing and Apartment Building (THAB), and Mixed Housing Urban (MHU)) surrounding the Local and Neighbourhood centres, with lower density zones (Mixed Housing Suburban (MHS) and Single House) further from the centres. Smaller amounts of Large Lot residential are provided for on the periphery of the FUZ, adjacent to the Rural Urban Boundary (RUB).
- An extensive network of Protection Areas, Open Space and Esplanade Reserves, mostly focussed around the network of streams in the FUZ.
- Retention of Morrison's Orchard (Area 33) on the western side of SH1 at the southern entrance to the town.

Provision for new schools and large parks are intended, although no specifics (extent or exact location) are provided.

2.2 Yields

Having established an indicative NDA for the WSP, the next step applied by Council was to estimate the likely dwelling and employment yields for those areas. To do this Council applied assumed average lot sizes for residential land, and employment density for business land, as shown in Figure 2.3.

2.2.1 Dwelling yields

The average lot sizes applied have been generally guided by subdivision rules in Chapter E of the Auckland Unitary Plan (AUP) and through council review of recent subdivision activity in greenfield areas (to understand the current market). The AUP specifies³ that the minimum average net lot size is 600m² in the Single House zone, although larger averages are applied in small parts of the Single House zone. The MHS and MHU zones have no minimum site sizes where subdividing around dwellings, and no maximum density controls (i.e. a landowner applies for a design with a number of houses and can then apply subdivide around the approved land use plan). Therefore, for the purposes of yield calculations the average lot size for MHS and MHU have been guided by what recent market activity has been doing (350m² for MHS and 300m² for MHU). For the THAB the yield calculations are based on 1 dwelling per 180m². The assumptions in this dwelling yield assessment are logical and appropriate.

Figure 2.3: WSP dwelling and employment yields by zone type

Future zones	Land area per dwelling (m ²)	Dwelling yield	Ratio	Ratio unit (workers per...)	Jobs
THAB	180	377	0.50	Dwelling	189
Mixed Housing Urban	300	1,916	0.50	Dwelling	958
Mixed Housing Suburban	350	3,204	0.50	Dwelling	1,602
Single House	600	1,729	0.50	Dwelling	864
Large Lot	4,000	210	0.50	Dwelling	105
Local Centre	300	11	58	ha	19
Neighbourhood Centre	300	16	58	ha	29
Business - Light Industry Zone	-	-	37	ha	520
Business - Heavy Industry Zone	-	-	37	ha	706
Orchard	-	-	-	ha	-
Total FUZ		7,464			4,992

2.2.2 Employment yields

The WSP applies employment density assumptions for centres and industrial areas that are consistent with modelling undertaken by M.E for the Independent Hearings Panel on the AUP. That modelling divided Auckland Region into four urban (North, South, Central and West) and two rural areas (North and South), and assessed the average employment density in each. An indicative area to apply as a guide to possible future employment density in Warkworth is the Urban North area. Densities tend to be highest in Urban Central, and very low in Rural areas, but relatively similar in the three non-Central urban areas.

The IHP work's average employment density for Neighbourhood centres in the Urban North was 51 employees per hectare in 2018, projected to increase to 58 employees per hectare in 2043. That figure of

³ Table E38.8.2.3.1

58 employees per hectare has been applied for the WSP calculation. The Local centre employment yield has been assumed to also be 58 employees per hectare.

Figure 2.4: Dwelling and employment yield by location

Area ID Code	Area (ha)	Net developable area (ha)	Zone	Dwelling yield	Employment yield (employees)
1	54.0	25.3	Residential - Single House Zone	421	211
2	79.3	30.1	Residential - Single House Zone	200	100
3	23.8	5.9	Residential - Single House Zone	99	49
4	85.2	38.0	Residential - Single House Zone	633	316
5	1.2	0.6	Residential - Single House Zone	11	5
6	40.1	18.1	Residential - Single House Zone	302	151
7	12.0	6.3	Residential - Single House Zone	63	31
8	202.5	84.6	Residential - Mixed Housing Suburban Zone	2,417	1,209
9	2.6	0.9	Residential - Mixed Housing Suburban Zone	25	13
10	21.6	10.1	Residential - Mixed Housing Suburban Zone	288	144
11	19.4	8.4	Residential - Mixed Housing Suburban Zone	240	120
12	9.0	2.2	Residential - Mixed Housing Suburban Zone	62	31
13	13.0	6.0	Residential - Mixed Housing Suburban Zone	172	86
14	33.5	10.5	Residential - Mixed Housing Urban Zone	351	176
15	5.5	1.3	Residential - Mixed Housing Urban Zone	43	21
16	11.8	5.8	Residential - Mixed Housing Urban Zone	192	96
17	13.4	6.1	Residential - Mixed Housing Urban Zone	204	102
18	37.6	16.9	Residential - Mixed Housing Urban Zone	564	282
19	41.9	16.8	Residential - Mixed Housing Urban Zone	561	281
20	15.2	6.8	Residential -Terrace Housing and Apartment Building	377	189
21	66.9	26.3	Residential - Large Lot Zone	66	33
22	28.2	12.1	Residential - Large Lot Zone	30	15
23	65.5	32.4	Residential - Large Lot Zone	81	41
24	23.6	9.3	Residential - Large Lot Zone	23	12
25	8.0	3.9	Residential - Large Lot Zone	10	5
26	0.3	0.2	Business - Neighbourhood Centre Zone	5	10
27	0.3	0.2	Business - Neighbourhood Centre Zone	5	10
28	0.3	0.2	Business - Neighbourhood Centre Zone	5	10
29	1.0	0.3	Business - Local Centre Zone	11	19
30	24.5	12.1	Business - Light Industry Zone	-	447
31	2.9	2.0	Business - Light Industry Zone	-	72
32	37.4	19.1	Business - Heavy Industry Zone	-	706
33	16.3	9.3	Morison's Orchard	-	-
	997.8	428.0	Total all zones	7,464	4,992

The IHP work's average employment density for Light Industry zones in the Urban North was 34 employees per hectare in 2018, and 39 for Heavy Industry, which was modelled to remain constant into the future. The WSP yield calculations applied by Council assume an average of those figures for both the Light and Heavy Industry zones in the WSP area which is appropriate given both zone types share similar types of activities.



The other element to employment yields applied in the WSP yield calculations is the yield from residential land. Council's assessment assumes that residential zoned areas will yield 0.5 jobs per household. This figure attempts to capture home-based employment, including:

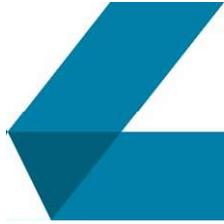
- people working from home offices within their dwelling or the dwelling of their employer,
- businesses registered to a residential address but with employees working in other (changing) locations, such as tradespeople (plumbers, builders etc.) that do not have a base on business land,
- other small amounts of employment in residential areas such as childcares, professional or medical offices which may establish outside business zones.

That figure of 0.5 jobs per households being based in residential areas is a good basis for the assessment, based on our analysis of the amount of employment that locates in residential zones around Auckland. The average employment in residential zones across Auckland is around 0.45 workers per dwelling, although that figure is slightly higher (0.45-0.50) in Warkworth, which likely reflects the relative inaccessibility of large employment areas such as the Auckland CBD.

However, this is a potentially complex relationship, and the actual employment yield from residential zones may differ from the 0.5 jobs per household assumed. For example, it could be that higher density zones are more (or less) likely to support home-based employment because of the nature of dwellings and occupants there:

- higher density zones may have different parking and vehicle access, which could be less attractive to some types of home-based businesses.
- residents in higher density zones may tend towards a particular demographic cohort (age/income etc.) which is more (or less) likely to be attractive to some types of home-based businesses.

Any such differences are not well understood, and particularly in the case of Warkworth where there are few higher density residential areas now. These difficulties in projecting potential employment yield from these residential areas may either over- or under-estimate their yield, however there is no information to indicate which might apply, so the 0.5 jobs per household is a reasonable input to apply.



3 Yield assessment

This section provides an independent assessment of the employment and dwelling yields calculated by AC in its work on the WSP, based on the areas and layout identified in section 2 and alternative assumptions relating to density.

3.1 Employment target

Current employment (2,933 MECs⁴) and household counts (2,100) in Warkworth were assessed, from which it was established that the current ratio of employment per household in Warkworth is 1.39 MECs per household. The Auckland Plan (2018) states that significant future employment growth is anticipated alongside residential growth in Warkworth, replacing the specific goal which had been set in the 2012 Auckland Plan of “a balance of houses to jobs of close to 1:1”. Warkworth town already has more employees than households, due to the role Warkworth plays as an employment centre for a large part of northern Rodney. For the purposes of the WSP, an appropriate target is to have future employment sufficient to maintain that ratio at around that same level. That would exceed the former Auckland Plan goal (1:1 ratio), and result in Warkworth maintaining a similar role in the Rodney economy as northern Rodney’s employment hub.

3.2 WSP yields

The WSP yields assessed in section 2.2 indicated 7,464 dwellings, and 4,992 jobs, which is only 0.67 dwellings per household. However, those yields only tell part of the story, because:

- They only relate to the FUZ part of Warkworth, and do not include the existing developed parts of Warkworth.
- There is live zoned (non-FUZ) land that is vacant and will accommodate employment, including industrial land adjacent to the Showgrounds, General Business zone south of the Showgrounds.
- They make no provision for employment in schools.
- As referenced in section 2.2.2 it may be appropriate to apply different assumptions for some aspects of the employment yield, in particular yield from residential zones.
- There is potential to increase employment yields in existing live zoned centres (e.g. through redevelopment), especially the Town centre, Mixed Use and Light Industry zone.

⁴ Modified employment count, a count of paid employees and working proprietors

3.3 Alternative yields

3.3.1 FUZ area

As part of the review process, M.E provided AC with advice as to the appropriate employment yields to assume in the FUZ. The FUZ employment yields in each WSP zone are consistent with yields we have independently assessed.

3.3.2 Non-FUZ area

In addition to the FUZ employment yield, additional employment for residents in the FUZ will be supported in areas that are not in the FUZ. Employment capacity exists in various live-zoned locations around Warkworth, and these are likely to support a workforce where either none exists currently on live zoned land (in the case of vacant land), or a larger workforce that currently exists (in the case of zones where average employment density is lower than the averages discussed in section 3.3.1 from the IHP work). Some ongoing residential growth is expected in existing residential areas through infill, and that will also support additional employment based in residential dwellings.

The largest contributors to employment in the non-FUZ area are shown in Figure 3.1, and would be:

- The land adjacent to the Warkworth Showgrounds, which is live-zoned LIZ but currently almost completely vacant. This LIZ area might accommodate around 1,700 workers when fully developed.
- The Town Centre, where employment densities are lower than the average across the Urban North, and therefore indicate some potential to intensify and yield more employment, including on currently vacant land (+620 workers to reach 1,850 once fully developed).
- The existing Light Industry zone (LIZ), where employment densities are lower than the average across the Urban North, and therefore indicate some potential to intensify and yield more employment, including on currently vacant land (+630 workers to reach 1,540 once fully developed).
- Similarly an increase in density in the General Business zone (GBZ) (+300 workers to reach 370 once fully developed), and Mixed Use zone (MUZ) (+350 workers to reach 360 once fully developed).
- An increase in employment in the secondary school (or schools, if the Ministry of Education establishes an additional site). Given strong population growth, school staff numbers would also need to grow strongly, although the broad school zone means roll growth will be less in percentage terms than the strong dwelling growth in Warkworth town. Secondary school employment might be expected to roughly double, to just over 300 workers.
- In addition to the non-FUZ area, a small amount of employment would be expected in new primary schools in the FUZ. That employment is not accounted for elsewhere, and if

existing primary school employment increases pro rata to dwelling counts, might amount to a total of nearly 260 workers employed in Warkworth's primary schools.

- An increase in employment in existing residential areas, calculated as a pro rata increase in population projected in those areas.

In total then these areas would potentially provide for an additional 4,450 workers over current levels, taking total employment yield to just over 7,600.

Figure 3.1: M.E development scenario yields for non-FUZ area

Zone	Net developable area (ha)	Current workers per ha	Future workers per ha	Future workers	Additional workers over 2017
Not in FUZ					
LIZ occupied	34.6	26	37	1,280	370
LIZ vacant	7.0	-	37	259	259
LIZ Showgrounds	46.0	-	37	1,704	1,704
GBZ occupied	1.9	32	55	105	45
GBZ vacant	4.7	-	55	260	260
MUZ	7.1	4	51	363	353
Town centre occupied	9.3	131	131	1,535	307
Town centre vacant	2.4	131	131	310	310
High school	intensify			312	156
All other (mostly residential)	intensify			1,205	455
Total Not in FUZ				7,333	4,219
In and out of FUZ					
Primary school (x3)	5.0	-	57	287	226
Total In and Out of FUZ				287	226
Total				7,620	4,445

3.3.3 Total employment yield

Taken together, the FUZ and existing parts of Warkworth might support a total workforce of 4,990 (FUZ, Figure 2.4) + 7,600 (non-FUZ, Figure 3.1) = 12,600 workers (Figure 3.2). Given the projected dwelling yield of the FUZ (7,464, Figure 2.4) and non-FUZ (3,130⁵) together of some 10,590 dwellings, that would equate to 1.19 workers per dwelling across the town as a whole.

⁵ This is the number of existing dwellings plus an allowance for infill, as derived from Statistics NZ household projections for the area

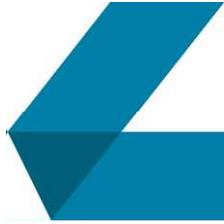


Figure 3.2: Warkworth total employment yield once fully developed

Area	Future workers	Dwellings	Workers per dwelling
FUZ	4,992	7,464	0.67
Non-FUZ	7,610	3,130	2.43
Total employees	12,601	10,593	1.19

That is slightly lower than the target identified in section 3.1 of 1.39 workers per dwelling, although generally consistent. To achieve a ratio of 1.39 workers per dwelling, the 10,593 dwellings would need 14,748 workers, indicating a shortfall against the 1.39 target of 2,146 workers (17%). That level of employment (1.19 workers per dwelling) is consistent with the Auckland Plan's desire for significant future employment growth (and considerably higher than the former Auckland Plan's goal of a 1:1 dwelling/job ratio), and would result in Warkworth continuing to play a very similar role as a sub-regional (northern Rodney) economic and employment hub.

By way of indication, a ratio of 1.39 workers per dwelling would be achieved by changing 34ha of MHS land indicated in the WSP to Industry, decreasing dwelling yield by 970 and increasing job yield by 970, for 13,370 workers, 9,620 households and 1.39 workers per household.



4 Business zone location assessment

The WSP makes provision for three business areas to the west of the existing SH1, including the small expansion of the Morrison Drive area. Together with the existing business zoned land on the outskirts of Warkworth, two of those new Industry zones connect to form a spine of industrial land that will be located along a proposed ring road circuiting around the existing urban Warkworth (Figure 2.2).

There are significant advantages to clustering the Industry zones together, including:

- providing accessibility to the primary roading network for high use activities,
- good connectivity with the proposed Puhoi-Warkworth Road of National Significance (RoNS) to the west of the Future Urban zone and the existing state highway,
- economic benefits of business co-location, and
- avoiding reverse sensitivity issues by keeping residential and industrial activity relatively separate.

For these reasons, the WSP's Areas 30 and 31 are appropriate locations to accommodate Industry zones, and should be attractive to potential occupants. The proposed structure plan makes provision for 64.8ha gross area of industrial zoned land, which translates into 33.1ha of net developable area. As discussed in section 3.3, that area would yield indicatively around 1,230 jobs which would help to achieve some of the Auckland Plan goals of providing job self-sufficiency.

All of the proposed Industry zoned areas are located alongside waterways and streams, and effects on ecology and stream quality will need to be managed well to avoid runoff from the less permeable surfaces which are characteristic of business areas. Those issues have been identified and appropriate management responses recommended in the relevant specialists' reports.

4.1 Area 32

The location of Industry zone Area 32 makes sense in terms of enabling activities which are less sensitive to the Puhoi-Warkworth RoNS noise to locate directly adjacent to it, (as opposed to residential activity for example), and is a generally appropriate location for industrial land, being very flat. There is little flat land in the Structure Plan area, and identifying sufficient flat land for industrial activities as part of the structure planning process was difficult.

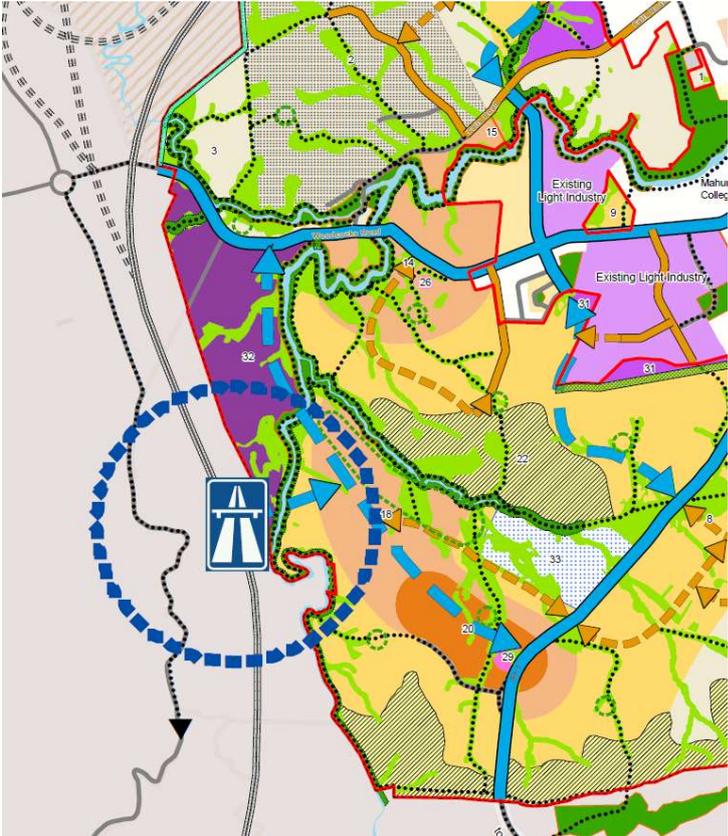
That flat topography is a positive enough factor that it surpasses potential accessibility issues. While a new southern interchange (i.e. south of Warkworth) to the new SH1 has been identified for the southern part of Area 32, it has not yet been confirmed. If it proceeds, Area 32 would benefit from very good access to places to the south. However, if it does not, that accessibility would be noticeably poorer. Area 32 is located in the far western part of the FUZ, approximately 3.5km from the future SH1 interchange and 1.5-2km from the existing SH1. That location means the area is less accessible to routes coming into and leaving Warkworth than are other industrial areas, although is still a reasonable trade-off for the ability to use some of the only flat land in Warkworth.

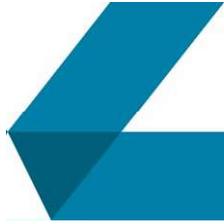


While the distance to the confirmed arterial interchanges is not large in an Auckland context, accessibility of the area is an important consideration, along with associated issues such as reverse sensitivity that may arise from cars or trucks accessing businesses located there, especially those generating a large volume of vehicle movements. Vehicles servicing Area 32 would likely need to pass through higher density housing areas and close to the Local centre or Neighbourhood centres, and potentially pass by schools (although their location has not yet been established), when accessing Area 32 from the south (via an indicated new arterial route parallel to the western edge of the RUB) or north-east (via Mansel Drive and its indicated extension to the north as a future arterial link towards the future SH1 interchange). Access via Falls Road is unlikely for heavy vehicles because it is narrow, winding and has a one lane bridge.

Future planning for Area 32 and its access routes should be cognisant of these constraints, especially if the southern interchange does not proceed. Council should give consideration to the potential effects that heavy vehicle movements along those arterial routes may have on neighbouring land uses, and could consider some limitations on the types of activities that might be permitted in Area 32, such as restricting high vehicle movement-generating activities. This matter would benefit from specialist traffic engineering input in the event that the proposed southern interchange does not proceed.

Figure 4.1: Area 30 location overview





4.2 Area 30

Area 30 would be an elongated Industry zone oriented north-south, parallel to the existing LIZ along Hudson Rd. That location is appropriate for an Industry zone because it would offer excellent accessibility to the new SH1 interchange near the Showgrounds, and would be predominantly flat to gently sloping.

4.3 Area 31

This area is comprised of two separate blocks totalling only 2.9ha adjacent to the existing Morrison Drive LIZ zone. The area is an appropriate location for industrial activity, given its Morrison Dr neighbours on one side.

5 Retail floorspace yields

5.1 Background

In the earlier M.E “Warkworth Business Land Assessment”, it was recommended that approximately 1.2-1.5 ha would need to be provided for core retail, hospitality and services floorspace in Neighbourhood centres, and suggested that three Neighbourhood centres could be provided within the Future Urban zone, with one in the north, one in the west, and one in the south.

The WSP indicates provision for three Neighbourhood centres occupying 0.3ha gross area each, which equates to a net developable area of 0.15ha. These would be complemented by a single Local centre in the southern part of Warkworth (1.0ha gross, 0.3ha net) to provide for Neighbourhood centre-type needs, but for a larger catchment than the three Neighbourhood centres. Together these four centres would provide for broadly the quantum of Neighbourhood centre space indicated by our earlier assessment.

The net developable land area indicated for each centre is 3,330m² for the Local centre (Area 29), and 1,650m² for each of the three Neighbourhood centres (Areas 26, 27 and 28). Those net areas would then yield a gross floor area (GFA), of 1,000-1,700m² for the Local centre, and 500-800m² for each of the three Neighbourhood centres, depending on the development intensity achieved⁶. Below we review those floorspace yields with reference to the indicated dwelling yields, in light of our earlier assessment.

5.2 Centre locations

This section discusses the suitability of the location of the WSP centres. The WSP identifies sites for one Local and three Neighbourhood centres:

- Area 29, Local centre: The location of this zone is logical because it is at the intersection of the existing SH1 and the proposed new western link road, and is central to the large southern residential catchment. The central location within the southern part of the FUZ is appropriate to service the needs of the residential catchments both east and west of the current SH1, which is likely to have its State Highway function revoked in the future. That change in road function will facilitate opportunities for easier access across what is now a busy through route, but which is likely to become less busy, and more attractive to non-vehicular modes. The Local centre will be surrounded by a higher density residential (THAB) zone, which is a good way to provide housing intensification near stores and hospitality options which will improve amenity and provide lifestyle options.
- Area 27, North of the River: this location is also located at the intersection of two higher order roads (the existing Matakana Rd and the proposed Matakana Link Rd), and is centrally located within the area north of the river and current SH1, and on Matakana Rd, providing good accessibility for the northern FUZ catchment.

⁶ Assuming site coverage of somewhere between 30% and 50%

- Area 28, a Neighbourhood centre, near Hudson Rd. This centre and the one at Area 26 would together provide for the convenience retail needs of the rest of the Warkworth FUZ, with the former located in the north of the residual area, and the closest centre for the large, but generally lower density, residential areas between Hudson Road and the RUB. The Area 28 centre is well located at the entrance to the Single House residential zone west of the Hudson Rd industrial area.
- Area 26, a Neighbourhood centre, near Woodcocks Rd. This centre would provide for the convenience retail needs of the southern part of the area jointly serviced with the Neighbourhood centre at Area 28. The location on or near Woodcocks Road is sensible to provide efficient access for consumers moving from central Warkworth towards the west, given Woodcocks Road will be a main transport link for those movements.

It is appropriate to have the centres in locations where there are higher concentrations of residential housing and in central locations where the centres will be able to draw from the wider surrounding catchments and encourage active transport modes to access goods.

Overall, the locations of the Neighbourhood centres and Local centre are appropriately distributed to provide for the needs of the future FUZ population, taking into account the density of that population in different areas, the roading and transport network and the location of Warkworth's existing centres:

5.3 Centre size

To estimate the required gross floor area (GFA) floorspace required by households living in the FUZ for Local and Neighbourhood centre activity, we have used Market Economics' recently updated Spatial Economy Model. This model provides a mechanism to understand spatially how people use the region for residential and business activity. The model's core is a framework that codes all meshblocks according to their primary Unitary Plan zone type (centres, business areas, special purpose zones, future urban zones, rural zones and residential zones). The framework allows spatial information to be attached to understand how many people, households, businesses, and employees there are in each location, to compare that activity with other locations within the region, and to look at change over time.

The key outputs of the model are:

- Population and households (and therefore density) by location.
- Number of businesses and employment (and therefore density) by industry by location.
- Detailed information about business counts, sales, GFA and employees by retail store type by location.

For this assessment we have examined the average Local and Neighbourhood centre GFA per household on a regional basis and applied those estimates to the residential yields that we have been provided for the proposed structure plan area. That helps to provide some context about average centre parameters in the region.

There are approximately 420 Neighbourhood centres in the Auckland Region with some 138,000m² GFA in core retail and hospitality activities, which represents an average Neighbourhood centre size of 330m². Of

those 420 centres, only 8% are larger than 1,000m², so the two proposed Neighbourhood centres of around 400-800m² GFA would be of a size consistent with most other Auckland Neighbourhood centres. which are typically a small block of less than 10 shops, and sometimes as small as one or two stores only.

There are 72 Local centres across Auckland, with an average size of just under 3,000m². The likely GFA yield for the Local centre at Area 8 would be 1,020-1,700m², which would make it nearer the smaller than the larger end of the scale of Local centre sizes, but consistent with many other Auckland Local centres. The indicated size equates to 24-36% of other Local centres being smaller than the Area 29 Local centre.

Having assessed that the proposed Local centre and three Neighbourhood centres are consistent with other centres of that zone type as to size, the assessment below assesses whether they are an appropriate size based on the catchment they will serve, and the projected dwelling yield of the catchment. The average centre parameters identified above equates to an average floorspace supported by each household in the region of 0.3m² per household for Neighbourhood centres, and 0.45m² per household for Local centres. For the purposes of this assessment we have assumed that 0.3m² per household is the Low scenario and 0.45m² per household is a High scenario to ensure that an appropriate amount of space is provided to provide for these Neighbourhood/Local needs.

Based on those relationships, the 7,464 households that the WSP anticipates in the FUZ by 2037 (Figure 5.1), and households in the existing part of urban Warkworth would support between 2,500-3,790m² of GFA in the four centres in total (Figure 5.2). There will also be some component of Neighbourhood and Local centre-directed spend from the FUZ catchments that will naturally flow to centres outside the FUZ, especially for households living close to the boundary of current urban Warkworth, and some in-flow from non-local residents accessing the centres as they pass by.

Figure 5.1: Expected households by broad centre catchment, 2022-2037

Centre	Location	2022	2032	2037
Local Centre				
Area 29	Warkworth South	850	4,820	4,910
Neighbourhood Centres				
Area 27	North of River	1,110	1,110	2,260
Area 28	Near Hudson Rd	860	900	920
Area 26	Near Woodcocks Rd	250	610	610

Figure 5.2: Centre floorspace demand by FUZ location (GFA m²)

Centre	Location	Low			High		
		2022	2032	2037	2022	2032	2037
Local Centre							
Area 29	Warkworth South	250	1,440	1,460	380	2,170	2,210
Neighbourhood Centres							
Area 27	North of River	330	330	670	500	500	1,020
Area 28	Near Hudson Rd	260	270	270	390	410	410
Area 26	Near Woodcocks Rd	70	180	180	110	270	270



The Local centre at Area 29 will provide for the Neighbourhood and Local retail needs of a broad part of the large residential area identified in the southern part of Warkworth, and will need to be the largest new centre created at 1,500-2,200m². The three Neighbourhood centres indicated in the WSP will need to be smaller, at approximately 700-1,000m² each for the northern centre (Area 27), 300-400m² for the centre at Area 28, and 200-300m² for the centre at Area 26 (near Woodcocks Rd), based on the number of households that will reside in their catchment (Figure 5.3).

Figure 5.3: WSP Centre floorspace yields (GFA m²)

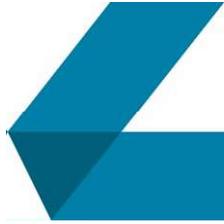
Centre	Location	Area (m ²)	Net develop. area (m ²)	Yield m ²		Demand (m ²)
				Low intensity	High intensity	
Local Centre						
Area 29	Warkworth South	10,387	3,332	1,330	2,000	2,210
Neighbourhood Centres						
Area 27	North of River	3,000	1,650	490	820	1,020
Area 28	Near Hudson Rd	3,000	1,650	490	820	410
Area 26	Near Woodcocks Rd	3,000	1,648	490	820	270
Total		19,386	8,279	2,800	4,460	3,910

The zonings proposed in the WSP would yield floorspace broadly in line with the amount that is assessed to be required, above. The possible exception to these is the two Neighbourhood centres at Areas 26 and 28. Those two centres could yield at least 500-800m², based on zoned area of 0.3ha, and indicative net developable area of 1,650m², although demand of slightly less than that is assessed. The demand assessment indicates around 400m² of GFA would be sustainable in the Area 28 centre, and nearly 300m² in the Area 26 centre. However, both of those centres would be expected to also support demand from nearby industrial areas, and pick up some pass by custom from the roads they are located on. In the context that the difference between potential yield and demand indicated is only around 200m² (say, two shops) the zoned areas set down in the WSP are appropriate.

The areas proposed for each have been cognisant of the need to ensure that the new centres fit into the existing centres hierarchy without causing adverse effects on the existing centres network, and are appropriately sized to limit any such adverse effects. The zoned areas proposed are appropriate to achieve this, and to play the local and neighbourhood roles envisaged.

5.4 General Business and Mixed Use zones

The WSP makes no provision for either General Business or Mixed Use zones in the FUZ. Indications in the Warkworth Business Land Assessment report were that very little, if any such provision would be required, and so the lack of any such zoning in the WSP is not inappropriate.



6 Other zoning provisions

There is only a relatively small provision of THAB zone in the FUZ, with the only THAB zone around the Local centre in Area 29. That limited THAB provision is consistent with the rationale guiding the use of THAB zones in the Auckland planning context. THAB is not typically located around Neighbourhood centres, because the relatively small retail/commercial mass possible in those centres will do little to provide a real anchor for high density residential activity. Instead the WSP applies MHU around all centres as a (slightly less dense) way of achieving higher density residential around the Neighbourhood centres.



7 Conclusion

The WSP provides a logical, sensible urban form for the FUZ, that would yield sufficient employment to maintain employment at a level broadly equivalent to current levels of 1.39 workers per household.

The industrial zones indicated are well located adjacent to existing Light Industry zones and major roads, providing good access for businesses that will locate in those zones. The Heavy Industry Area 32, in the far west of the FUZ, is the only one of the three proposed Industry zones that is not adjacent to an existing Light Industry zone, although proposed new arterial routes are indicated in the WSP to adequately service it, and it would back onto the Puhoi-Warkworth RoNS, removing any potential reverse sensitivity concerns in that direction. To the east and north, Area 32 would be separated from residential areas by an esplanade strip and Protection Areas, which should provide adequate buffer to minimise reverse sensitivity concerns in those directions. Close proximity to a potential future interchange to the Puhoi-Warkworth RoNS will make the Heavy Industry area attractive from an accessibility point of view, and will limit the need for vehicles servicing properties in Area 32 to pass through other parts of Warkworth.

The three Neighbourhood centres and one Local centre are all appropriately located, and appropriately sized, considering the size of the population they will serve, and the existing retail provision elsewhere in Warkworth. Those centres are all broadly consistent with the size of other similarly zoned centres elsewhere in Auckland, and so the zonings applied are also appropriate.

The location, size and accessibility of the Industry zones and Neighbourhood centres indicates they are likely to be attractive to the future market, and would play roles consistent with Unitary Plan objectives and policies for each zone.