Laura Bowman

From: official information
Sent: Wednesday, 2 February 2022 10:18 am
To: [redacted]
Cc: official information
Subject: Final Response: LGOIMA 21396 - [redacted] - "terms of engagement" for NPS-UDC and UD
Attachments: Future Proof Residential and Non-Residential Capacity and Demand Proposal FINAL_Redacted.pdf; Market Economics Future Proof Residential and Non-Residential Capacity and Demand Proposal - April 2017_Redacted.pdf; PSP00001013 2021 - Housing Capacity Assessment Re-Base -Signed IFS_Redacted.pdf; PSP000010132021 - Housing Capacity Assessment Re-Base - Variation 001_Redacted.pdf

Kia Ora,

I refer to your **information request below**, Hamilton City Council is able to provide the following response.

Since 2016, Market Economics have undertaken several specific projects that are related to the NPS-UD and UDC requirements, specifically the Housing and Business Capacity Assessments (HBA) and additional modelling of the impact of the NPS-UD Policy 3 intensification requirements and medium density residential standards (MDRS). The scopes of work for these projects are attached.

This work is contracted through the Waikato Local Authority Shared Services (WLASS) Professional Services Panel of which Hamilton City Council and Future Proof have contractual agreements **through**.

WLASS is a company owned by twelve Councils including the Future Proof Councils of Hamilton City, Waikato and Waipa District and Waikato Region. The company was established in 2005 to promote shared services between local authorities across the Waikato region.

WLASS has entered into master agreements with a range of skilled consultants, including Market Economics. The panel was established in July 2019 and is in place for five years. This contract reduces time and cost associated with engaging consultants with pre-negotiated fees and a more efficient engagement process, including when working with Market Economics.

Neither Hamilton City Council or Future Proof have a general agreement for Market Economics to provide broad advice on the NPS-UD or NPS-UDC. Therefore, your request is being refused as per S 17(e) of LGOIMA – this does not exist.

You have the right to seek an investigation and review by the Ombudsman of this decision. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

Kind Regards,

Tatiyana | Official Information & Legal Support Advisor
Legal Services & Risk | People and Organisational Performance
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Hamilton City Council
Te kaunihera o Kirikiriroa

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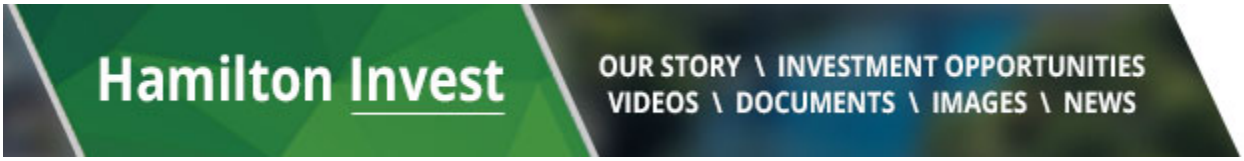

From: [redacted]
Sent: Monday, 13 December 2021 9:52 am
To: official information <officialinformation@hcc.govt.nz>
Subject: HCC / Future Proof/ Terms of engagement with Market Economics

Good morning, HCC / Future Proof have an arrangement with Market Economics to provide advise on economic and other matters.

HCC / Future Proof engaged Market Economic to provide specific advise in regards to the National Policy Standards UDC and UD.

This request is initially specific to the" terms of engagement" for NPS – UDC and UD.

Please provide a copy of these "terms of engagement" for the period 2016 to 2021 with all amendment (if any)

If the "terms of engagement" are wider that that under NPS – UDC and UD request, please provide that document and any amendments.

Kind Regards

[redacted]

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Future Proof Residential and Non-Residential Capacity and Demand: Update

Proposal

m.e spatial

Future Proof Residential and Non-Residential Capacity and Demand: Update

Date of this version: 23 August 2020

Report author(s): [redacted]

Disclaimer

Although every effort has been made to ensure accuracy and reliability of the information contained in this report, neither Market Economics Limited nor any of its employees shall be held liable for the information, opinions and forecasts expressed in this report.

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Contents

1 Background

The National Policy Statement on Urban Development (NPS-UD) 2020 contains new and updated requirements for councils to ensure that they are able to plan for short, medium and long-term growth in urban residential and business land markets as a core part of their statutory planning responsibilities. Subsequently, the councils are required to demonstrate that they have assessed short, medium and long-term growth in households and business activity and that they have made sufficient capacity available within their planning framework to meet their anticipated growth needs.

The NPS-UD replaces the 2016 National Policy Statement on Urban Development Capacity (NPS-UDC). It is newly gazetted and comes into force on August 20th, 2020. We note that there are changes in terms of definitions around requirements that Councils need to meet along with additional requirements (discussed below). However, the thrust of assessment processes are common between the NPS-UDC and the NPS-UD.

The Future Proof area has recently experienced elevated growth in residential development and business activity. As per the NPS-UD requirements under Policy 10 (a), the local authorities that share jurisdiction over an urban environment "work together when implementing this NPS; and (b) engage with providers of development infrastructure to achieve integrated land use and infrastructure planning; and (c) engage with the development sector to identify significant opportunities for urban development".

The Future Proof Councils, Hamilton City Council, Waikato District Council and Waipa District Council and Waikato Regional Council (referred to as Future Proof partners) engaged Market Economics (M.E) in 2017-2018 to undertake the detailed residential and non-residential demand and capacity assessments to meet their joint assessment requirements as a High Growth Urban Area (as defined in the NPS-UDC 2016) and to inform the update of the Future Proof Growth Strategy for the whole sub region. The Future Proof area includes the following settlements areas:

- **Waipa District**: Cambridge, Te Awamutu/Kihikihi, Pirongia, Karapiro, Rest of District.
- **Waikato District:** Tuakau, Pokeno, Te Kauwhata, Huntly, Ngaruawahia, Raglan, Taupiri, Horotiu, Gordonton, Matangi, Tamahere-Tauwhare, Whatawhata, Te Kowhai, Rest of District.
- **Hamilton City**

Specifically, the Future Proof council partners sought to understand for all the Future Proof areas listed above: (i) the nature of demand growth they are likely to face in the short, medium and long term; (ii) the implications this demand growth will have on land requirements for residential and non-residential activities; and (iii) implications for planning.

The Future Proof Councils have requested M.E to develop a proposal to update the original demand and capacity modelling to meet the requirements of the NPS-UD. The assessment is intended to build off existing modelling capability constructed by M.E for the NPS-UDC assessment. This proposal covers the updated assessment of the residential and non-residential demand growth and capacity projections and will form the basis of the HBA required under the NPS-UD.

2 Objectives

The main objective of this proposal is to provide an updated Housing and Business Development Capacity assessment ('**HBA**') to meet the parts (refer to section 2) of the NPS-UD (Policies 1, 2, 3, 7, 8) requirements for the Future Proof partners. M.E will use the existing modelling capacity developed for the earlier NPS-UDC assessment, together with updated data and information, to update the following core assessment areas:

(i) employment and value-added projections by sector[1] and Business Area/Statistical Area 2 (SA2)[2];
(ii) Gross Floor Area (GFA) by sector and Business Area/SA2[2] based on (i);
(iii) residential land and dwelling capacity by catchment[3];
(iv) non-residential land/floorspace capacity by catchment[3]; and
(v) residential demand for dwellings by catchment[3].

In addition, the proposal is to undertake further assessment to estimate the likely rates of take-up of development capacity, as required under the NPS-UD. Finally, this proposal is designed to cover off all additional reporting aspects as required under the NPS-UD that might differ from earlier work for the NPS-UDC.

3 Method

This section sets out our intended approach to update the assessment in each of the key areas. It does not contain a detailed description of the construction of the existing modelling capability or approach. These are instead available in the previous 2017/2018 NPS-UDC assessment proposal and technical specifications documents[4][5].

3.1 Establishing a Spatial Structure for Analysis

As a first stage, the spatial structure of the Waipa and Waikato district's and the Hamilton City greenfield areas will be revisited with the Future Proof Partners to (re)define the appropriate geographies of analysis.

Establishing the spatial structure within the districts is an important first step as it also establishes the appropriate areas for modelling capacity under each approach based on the predominant drivers of growth within each area. Broadly, the main urban areas within the districts will be identified and form

[1] Refer to Appendix 1
[2] Waikato District SA2s containing multiple land uses will be disaggregated into rural and urban SA2s.
[3] Catchments will be based on SA2s where the SA2s will be aggregated or disaggregated depending on geophysical, demographic and development characteristics.
[4] M.E Ltd, 2018 *Housing Development Capacity Assessment 2017: Technical Specifications Report Future Proof Area – Waikato District, Hamilton City and Waipa District,* 20 August 2018 - final.
[5] M.E Ltd, 2018 *Housing Development Capacity Assessment 2017: Technical Specifications Report – GIS Future Proof Area – Waikato District, Hamilton City and Waipa District,* 21 August 2018 – final.

the areas where feasibility modelling is applied with commercial developers accounting for a substantial share of the dwelling growth in these areas.

Other minor urban locations will also be identified, where growth predominantly occurs due to demand for a particular location (e.g. community ties) or the availability of space. Here, few dwellings are typically delivered by commercial developers for profit. However, it is still important to understand the ability of these minor urban locations to cater for future demand growth. Therefore, the analysis will assess the sufficiency of plan enabled capacity in these locations.

A further description of how the total dwelling market and associated development pathways (and consequent assessment approaches) in relation to the spatial structure is contained in Appendix 2.

3.2 Residential Capacity Modelling

The proposed assessment will provide an updated estimate of the residential capacity across the FPP area. This includes both plan-enabled capacity, commercially feasible capacity and infrastructure served capacity. This will occur through a combination of updating and recalibrating the detailed models constructed for the 2017/2018 NPS-UDC assessment and triangulating the outputs with updated information on changes to the built environment since the earlier assessment. The key components are set out in the following sub-sections.

Plan-Enabled Capacity

M.E propose to re-run the GIS models developed to measure plan-enabled capacity under the original assessment. As part of this process, we will use any updated building footprint information supplied by the FPP partners. We will also make provision for any agreed updates to the geometric planning parameters at this stage[6].

As a second stage. M.E propose to use certificate of code of compliance (CCC) information supplied by the council's to further update capacity estimates. This will provide an important development process to capture changes in capacity where updated building footprint data is unavailable. Parcels where CCCs have been issued will be removed from capacity estimates. This process will only apply to existing urban areas or greenfield areas where the final lot parcel boundaries have been established.

Any updated information on greenfield capacity will also be incorporated into the updated plan-enabled capacity (PEC) estimates. M.E propose to collate updated greenfield information following the same approach as the earlier study with data[7] supplied by the FPPs.

It is important to note that the spatial boundaries of the existing urban and greenfield areas may change with these updates. This is due to a combination of urbanisation of greenfield areas, updates to greenfield

[6] We also propose to achieve consistency with the 2019 REEP modelling work, where appropriate, that M.E undertook for HCC.

[7] i.e. the integration of capacity and yield information from a range of sources including Council modelling, District Plan yields and zoning boundaries, structure plans, LINZ parcel data and any available developer information (e.g. subdivision plans).

area information, planning boundary changes and any subdivision or site amalgamation within the existing urban area. M.E propose to consult with the FPPs on the optimal spatial outputs during this stage.

Infrastructure Ready Capacity

M.E propose to work closely with the FPPs to understand the timing, capacity and extent of additional infrastructure to be built. For each key timeframe (short, medium and long term) infrastructure constrained capacity will be calculated based on these discussions.

Commercially Feasible Capacity

M.E propose to use the existing detailed commercial feasibility model developed during the 2017/2018 assessment as a starting point for this analysis. This model provides parcel level outputs on the year of feasibility of each dwelling option identified in the PEC model on each site. The model will be applied to the updated outputs from the PEC assessment.

M.E propose to use updated information on construction costs and (land and dwelling sales) prices to update and re-calibrate the model. The FPPs will be required to supply key information sources, including any rating database information updates and unit record sales information. M.E will source base information on updated construction costs.

As part of this section, M.E will revisit the cost structures of the model. We may update the structure to reflect any further analytical advancements in model construction we may have made since the 2017/2018 modelling. This includes PEC and commercial feasibility modelling we have undertaken for NPS-UDC assessments within other parts of New Zealand.

M.E propose to retain the base spatial economic structures that drive the models. These relate to the differentiation by area *type* within urban areas (mainly Hamilton City). We do not propose to undertake any substantial updates to this part of the model as we consider that the relativities between locations, within urban environments, are unlikely to have sufficiently changed beyond the ability to make any appropriate adjustments through the model calibration process.

M.E also do not propose to produce the previous detailed dwelling price output modelling included within the 2017/2018 NPS-UDC assessment. This is because we understand the (resource intensive) dwelling price output is no longer required under the NPS-UD.

Developer Intentions

Once 'Commercially Feasible' capacity has been estimated by type and location over time, it is important that developer intentions are factored into the supply side. We propose to work with FPP representatives to host a workshop (if appropriate) or a series of zoom/skype interactions with key developers within the FPP area. The aim will be twofold;

- To ground truth the outputs of the commercially feasible modelling described above. It is important to gain 'real world' perspectives on the essentially, desktop modelling approach. However, caution needs to be applied to the information provided by developers as there are often conflicting agenda's.

- To understand any key areas of future development timing that might be outside the information held by Council.

Once this information is integrated, M.E will finalise estimates of Residential Capacity for the Short, Medium and Long Term. These estimates will include the required "competitiveness margin" of 20%, for both short and medium term and 15% for the long term.

3.3 Impact of Planning on the Housing Market

Section 3.23 of the NPS-UD is a new requirement that did not form part of the NPS-UDC. The policy calls for the HBA to "*include analysis of how the relevant local authority's planning decisions and provisions of infrastructure affects the affordability and competitiveness of the local housing market".* This analysis must include an assessment of how well current and future housing demands by different groups within the community are met including different types and forms of housing. Groups that have been highlighted include:

- Maori
- Older people
- Renters,
- Low-income households,
- Visitors, and
- Student accommodation.

The degree to which each group is represented in each area and the role each group plays in the demand structures of that area determine the degree of focus required. For example, Seasonal workers within the FPP area are a minor component, yet within Queenstown, they are very significant. Maori are more likely to be an important consideration in the FPP area than in Queenstown.

In addition, the NPS-UD calls for the analysis to be informed by;

- Market Indicators: including affordability, demand and supply of housing, household incomes, prices and rents
- Price efficiency indicators: these are reported on the MHUD website. ME note that the data is reasonably dated, but we propose to use the data where applicable.

M.E propose to work closely with FPP officers to develop strategies to engage with the key groups once it is established the role each identified group plays in the market. M.E note that there is significant cross over between the identified groups which will shape engagement. At this stage, two approaches are proposed.

- Maori: FPP and each Council has Iwi engagement teams that have strong links into different Iwi and hapu within FPP. We will work with those teams to develop a workshop/survey to understand both the different demands for housing and also the development plans Iwi might have to meet some of those needs.
- Older People: A key provider of accommodation for the elderly are the rest home sector. We will directly engage with two to three of the larger providers (e.g. Ryman Healthcare,

Metropolitan Life, Sommerset) to understand the market they are catering for, and development plans.

The key output from this assessment will be a section in the HBA report outlining the approaches taken, and key results from the assessment. In addition, the real outcomes will be inputs into the final estimates of residential capacity.

3.4 Residential Demand Modelling

M.E propose to estimate the demand for residential dwellings across the FPP area. Our proposed approach will estimate the underlying demand for the number of dwellings of each type (detached vs. attached) in each location (Statistical Area (SA2)).

As a first step, we propose to obtain updated population/household projections by SA2 across the FPP area. We understand that Statistics New Zealand will provide updated household projections using a 2018 Census base in the first half of 2020. We also understand that the FPP has commissioned updated household projections by SA2, which are being supplied to the FPP's by March 2020. These projections will provide the total number of households in each SA2, but are unlikely to provide the structure (composition) of households. M.E propose to use these total household estimate then apply our estimates of the household type structure of the totals.

The assessment of demand by geographic location will be applied to the spatial structure established during the first stages of the analysis. This process will determine the shares of demand that are allocated to growth in the main and minor urban locations, as well as a share of demand that is allocated to growth in the rural area. This is important for the assessment of sufficiency where urban demand is compared to urban capacity by location.

As per the requirements in the NPS-UD, M.E will produce a range of projections of demand for housing in the short, medium and long term and we will identify the one that is most likely to occur (along with the rationale for the decision). This will require outlining assumptions that underpin each projection set and the rationale for the decision. We will explore uncertainties around the projections and from that describe the degree and nature of the effects of uncertainty.

The second stage of our approach is to convert the household projections to dwelling demand by type and location. We propose to use the dwelling demand model that we established for the 2017/2018 NPS-UDC assessment.

We propose to develop three demand scenarios for dwellings by location across the FPP area. These are a high, medium and low-series projections, which are ultimately informed by the high, medium and low-series household projections.

3.5 Residential Capacity Reasonably Expected to be Realised

Estimating the likely level of residential capacity reasonably expected to be realised is a new requirement under the NPS-UD. While the technical guidance has not yet been published, there are a number of examples contained within the NPS-UD that provide guidance. M.E will work with FPP to ensure that residential capacity reasonably expected to be realised is defined to include take up of all sectors of the

market. In particular, it is not yet clear whether residential capacity reasonably expected to be realised is defined as entirely a sub-set of the commercially feasible component of capacity or whether it is an estimate of the overall number of dwellings that are likely to be constructed – regardless of commercial feasibly calculations. This is an important distinction because commercial developers are a subset of the total market, with dwellings also likely to be constructed by other parts of the market. These include social housing providers, schemes such as Kiwibuild, as well as other development pathways that do not seek the same margin as set out in the technical requirements of the commercial feasibility modelling.

What is clear in the NPS-UD is that Councils are able to use any appropriate method as long as they outline and justify the methods, inputs, assumptions used to arrive at estimates of Take Up[8]. At this point, ME are aiming to use dwelling completion rates derived from CCC data in relation to historic population growth to understand the portion of capacity that translates into the portion that is reasonably expected to be realised in particular parts of the market.

M.E will fine-tune our proposed approach once the technical requirements become clear within the NPS-UD. It is likely that this will involve analysis of building consents in relation to past rates of household growth, together with time-series analysis of the past number of dwellings in relation to households in each area. We consider it is an important part of any assessment of take-up to include the total market and not only a subset of the dwellings delivered by private, profit-driven, commercial developers.

In terms of future take up we will combine this approach with information from other housing providers (Kainga Ora, Iwi, the retirement sector and other non-market providers of social housing) to provide a comprehensive picture of future take-up. We will also incorporate any information from commercial developers during this stage.

3.6 Business Capacity Modelling

M.E propose to update the business land capacity assessment undertaken as part of the 2017/2018 NPS-UDC assessment. As a first step, we will build off the existing parcel-level model to provide an update of the remaining vacant land capacity area. This process will use the CCC data supplied by the FPPs, together with any updated building footprint data to remove any vacant land capacity taken up since the 2017/2018 assessment.

As a second stage, we also propose to estimate the level of employment capacity on the existing business estate. This includes estimating the likely potential to accommodate additional floorspace through increasing site coverages as well as the potential to accommodate further employees within existing buildings. These are important processes of intensification that typically occur within growing urban economies where a share of future employment growth typically occurs within already urbanised areas.

This analysis will reflect further assessment that M.E have since undertaken on Hamilton's industrial areas subsequent to the 2017/2018 NPS-UDC assessment. We propose to undertake this assessment only within Hamilton City in order to remain conservative in our final estimates of business land sufficiency. We consider that this process will produce a more accurate assessment of business sufficiency for Hamilton City that better reflects the trends observed in other growing urban economies. In Waipa and

[8] As outlined in the NPS-UD 3.26 (1) (a) and (b).

Waikato district's, we propose to continue the assumption that all future employment demand for space is met through the supply of vacant land.

We propose to undertake the analysis of Hamilton City's existing business estate at the city block level[9] or similar. We consider it is more appropriate to capture the changes in intensity at the average level across city blocks rather than at the individual parcel level. Our intended approach will involve the spatial integration of employment datasets, zoning information, building coverage areas, and floorspace data. This will enable average ratios of floor area ratios (floorspace/land area) and floorspace employment densities (floorspace/employees) to be calculated across city blocks.

The key output from this assessment will be estimates of business development capacity that is;

- plan enabled, and
- plan enabled and infrastructure ready, and
- plan enabled, infrastructure ready, and suitable for each business sector.

With respect to this last point, we propose to update the Multi-Criteria Analysis framework ('**MCA**'), applied for the 2017 NPS-UDC. The MCA allows each broad business land area to be compared and classified in terms of how it meets the requirements of each economic sector (at least for industrial, commercial and retail). The MCA classifies each area in terms of how well it encapsulates a range of characteristics. Each of the characteristics is then rated against each broad economic sector in terms of the importance of the characteristic. The resulting matrix allows each area to be classified in terms of how it meets the needs of each sector. M.E note that the MCA will include aspects of each area including site size and locational attributes such as proximity and other characteristics.

Capacity will be estimated by each of the activity classifications (industrial, commercial and retail) for the short, medium and long terms along with the required competitive margins (20%, 20% and 15% for each time frame).

3.7 Business Demand Modelling

M.E propose to estimate the demand for business land and built floor space (GFA) across the FPP area. Our proposed approach will estimate the underlying demand for land and GFA for Industrial, Commercial and Office in each broad location (Hamilton Business zone areas).

As a first step, we will either update our previous growth projections (used for the 2017 initial work for the NPS-UDC) or utilise the most recent updates to WISE (should they be available within the timeframe). M.E note that HCC are in the process of updating their macroeconomic growth models. These take the latest household projections provided by NIDEA and economic projections available from WISE at the District level and localise them. These growth projections will be calibrated against the most recent employment counts at local level by ANZSIC (drawn from Statistics New Zealand's Business Frame). The projections will draw from the same updated population and household projections relied upon for the residential demand assessment to ensure internal consistency.

[9] The definition of city blocks will be determined through their alignment with meshblock boundaries.

As with the residential demand projections, we propose to follow the same approach in providing a range of projections for the short, medium and long term, and then identify the one most likely to occur, along with the assumptions that underpin the projections and the choice of projection. Also, we will provide estimates of uncertainty around each of the projection sets and the effects of that uncertainty.

The second stage of our approach is to convert business demand projections (expressed as either Gross Output, Employment or Value Added) into land and GFA required to accommodate the growth. We will utilise the conversion rates (GFA sqm/ land sqm, land sqm/EC and GFA sqm/EC) applied in the 2017 work, but look to update those to reflect more closely what is happening on the ground. In addition, we will explore the degree to which intensification of activity in the existing stock of space can accommodate additional growth. This was done in a broad way for the 2017 NPS assessment but will be refined this time.

The output will be a table of future demand for land and built form in sqm for each broad activity type (Industrial, Commercial and Office) for the short, medium and long term that can then be compared with plan enabled capacity to assess sufficiency.

4 Data Requirements

M.E will require an updated set of data from the FPPs in alignment with the data supplied for the 2018/2018 NPS-UDC assessment. The key datasets include:

1. Updated Rating Database information. This information needs to be supplied at the property parcel level, ideally with an associated GIS shapefile. The key attributes include:
    i. Total floorspace and/or GFA.
    ii. Type of dwelling or building.
    iii. Zoning.
    iv. LINZ parcel ID.
    v. Land area of parcel.
    vi. Capital Value, Land Value and Improvement Value.
    vii. Number of dwellings.
    viii. Land use description.
2. Updated zoning files. This information needs to be supplied as a GIS shapefile. It is important to also have an associated specification of agreed zoning rule parameters to apply as agreed with each council.
3. Residential property sales data. This needs to be supplied at a property parcel level. Key attributes include:
    i. LINZ parcel ID.
    ii. Sales value.
    iii. Date of sale.
    iv. Dwelling description and age.

4. Any updated residential and non-residential building footprint data.
5. Any updated information on infrastructure provision (current and proposed future).
6. Any updated greenfield information including structure plans, developer plans and other planning information.
7. Building consent data. This needs to be supplied as a GIS shapefile. It needs to include the following parameters:
    i. LINZ parcel ID.
    ii. Floorspace.
    iii. Description of building.
8. Certificate of Code of Compliance (CCC) data. This needs to be supplied as a shapefile to identify the location of buildings at the property parcel level. It is needed for both residential dwellings and non-residential buildings. Floorspace, category, description and number of dwellings are required.

There may be other information required that can be provided by Future Proof partners, that will be identified once the technical specifications are finalised within the NPS-UD. We will work with the Future Proof partners at inception to define exactly what is required and when.

5 Budget and Timings

The table below provides a detailed breakdown of the fees, hours and elapsed time to undertake the work. Note that all fees are exclusive of GST and disbursements. Disbursements include travel, accommodation, and data purchases (if necessary).

STAGE	HOURS	FEES ($ Excl. GST)
Residential Capacity Modelling	112	[redacted]
Residential Demand Modelling	28	[redacted]
Residential Capacity Take-Up	9	[redacted]
Analysis of Planning Impact	35	[redacted]
Engagement with Developers/Groups	31	[redacted]
Business Capacity Modelling	56	[redacted]
Business Demand Modelling	27	[redacted]
TOTAL	**298**	[redacted]

The cost for the project is estimated to be [redacted] excluding GST and any direct disbursements. Any extra work, beyond the scope described in the proposal will be discussed with HCC and Future Proof partners before we undertake it.

Note that this is a reduced fee to take into account the overlap between this project and others carried out for Hamilton City (Update to Growth Model and the HCC/TDC Policy Provisions work). That has allowed up to 50% reduction in the cost and time involved in preparing the residential demand modelling and the business demand projections. We still need to carry out that work for Waipa and Waikato Districts and then align those projections with the Hamilton work.

Project disbursements and direct costs will be passed on to the Future Proof partners. Examples include data costs from CoreLogic and potentially MarketView as well as travel and accommodation. The exact requirements and cost implications will be discussed and clarified during the project inception process.

In terms of timing, we're able to get underway on some of the components of this work within the next 2 weeks. We also consider that the December 2020 timeline in the initial proposal is still achievable as this was developed with the NPS-UD being gazetted around June/July 2020.

We note that there are a number of inter-dependencies between this project and outputs from other projects and would like to maintain consistency across projects. We are also able to run a number of aspects of the workstreams in parallel. As such, here's a breakdown of the timing contingencies for each workstream:

- **Residential Capacity.** We are able to get the analysts started on the GIS work of this as soon as we receive the data from the FPP. If the data is received, then we can get this underway very quickly.
- **Residential Demand.** We can get started on this within the next two weeks. It is dependent upon having the ratings and sales data in useable format from the FPP partners. We note that we would like to align the demand preference scenarios with the Housing We'd Choose outputs.
- **Residential Take-Up.** We can also get started on this within the next two weeks contingent upon the data being supplied.
- **Business Capacity Modelling.** We can also get started on this within the next few weeks contingent upon the data being supplied.
- **Business Demand Modelling.** We can start this once the outputs of employment by sector future demand are produced from the growth model project.

Please note that a key factor impacting upon the timing in the first round was the availability of data.

The proposed work is dependent on Future Proof partner's cooperation on the supply of the stipulated date requirements above. As such, above time estimates are based at the date of writing this report (11/11/2019) and may be subjected to change.

6 Outputs/Deliverables

The key deliverable will be an updated Housing and Business Assessment to meet the FPP area requirements of the NPS-UD. This will be supplied in a report format and include one presentation to the FPPs. The key areas of the report will include:

- A dwelling capacity assessment.
- A dwelling demand assessment.
- A dwelling sufficiency assessment.
- A business capacity assessment.
- A business demand assessment.
- A business space sufficiency assessment.

M.E will also provide the FPPs with the capacity estimate outputs at a property parcel level in a GIS shapefile and Excel spreadsheet.

M.E will deliver these outputs to the Future Proof partners in two stages:

- Draft demand and capacity outputs – end of November 2020
- Final outputs, including capacity outputs and report – end of December 2020

Please note that the exact nature of final deliverables will be determined at inception and may be subject to change.

7 Conflicts of Interest

As far as we (M.E) are aware, the proposed work/outputs outlined in this proposal does not have any conflict of interest issues. However, it is important to note that M.E is currently committed to provide services to the Waikato Regional Council which are directly and indirectly related to the proposed work. Although highly unlikely, this may cause a potential conflict of interest issue between M.E. and Future Proof partners in the future. There could be a case of conflicts between Future Proof partners and the Waikato Regional Council but this is beyond our control.

The following table summarises M.Es standard approach to managing conflicts of interests should any arise.

Step/Action	
Register	We will prepare a formal register detailing any emerging (or potentially emerging) conflict of interest. The register will be 'open' and transparent and will be shared with the client. The register is appropriate for 'low' level conflicts.
Restrict	If the conflicts are more than 'low level', then we will put 'restrictions' in place. These restrictions could cover the involvement of team members in the overall project, parts of the project or processes associated with the projects. In essence, this mitigation is a separation of staff from the process. The conflict of interest is not likely to arise frequently. In addition, we may recruit a third (another) staff member from either Council or M.E to participate in the process to provide an additional layer of independence for the work.
Remove	If the conflict is likely to be ongoing and serious and where restrictions would not be appropriate, we will remove ourselves from the project. This will be done in close consultation with Council staff. The consultation would address the best exist strategy and how to treat costs and expenses. This step is not used very frequently and is seen as a last resort.

8 Relevant Experience and Team

Greg Akehurst: Director Market Economics – C.V. available if required

Susan Fairgray: Associate Director Market Economics - C.V. available if required

Euan Forsythe: Analyst Market Economics – C.V. available if required

Hannah Ashby: Analyst Market Economics – C.V. available if required

Appendix 1

1-Digit ANZSIC Industry Classification

Division code	Division description
A	Agriculture, Forestry and Fishing
B	Mining
C	Manufacturing
D	Electricity, Gas, Water and Waste Services
E	Construction
F	Wholesale Trade
G	Retail Trade
H	Accommodation and Food Services
I	Transport, Postal and Warehousing
J	Information Media and Telecommunications
K	Financial and Insurance Services
L	Rental, Hiring and Real Estate Services
M	Professional, Scientific and Technical Services
N	Administrative and Support Services
O	Public Administration and Safety
P	Education and Training
Q	Health Care and Social Assistance
R	Arts and Recreation Services
S	Other Services
T	All industries

Appendix 2

To be added.

Future-Proof Residential and Non-Residential Capacity and Demand

Proposal

m.e spatial

Future-Proof Residential and Non-Residential Capacity and Demand

Date of this version: 28 March 2017

Report author(s): [redacted]

Disclaimer

Although every effort has been made to ensure accuracy and reliability of the information contained in this report, neither Market Economics Limited nor any of its employees shall be held liable for the information, opinions and forecasts expressed in this report.

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Contents

1 Background

The National Policy Statement on Urban Development Capacity (NPS-UDC) 2016 introduces new requirements for councils to ensure that they are able to plan for short, medium and long term growth in urban residential and business land markets as a core part of their statutory planning responsibilities. Subsequently, the councils are required to demonstrate that they have assessed short, medium and long term growth in households and business activity and that they have made sufficient capacity available within their planning framework to meet their anticipated growth needs.

The Future-Proof area has recently experienced elevated growth in residential development and business activity. As per the NPS-UDC requirements under the PD1, the local authorities that share jurisdiction over a "High Growth Urban Area" are strongly encouraged to conduct a joint demand and capacity assessment on housing and business land development (covering the NPS-UDC requirements PB1-3). The Future-Proof Councils, Hamilton City Council, Waikato District Council and Waipa District Council and Waikato Regional Council; referred as Future-Proof partners) have requested Market Economics (M.E) to develop a proposal to construct residential and non-residential growth and capacity projections to assist the councils to meet their joint assessment requirements as a High Growth Urban Area (as defined in the NPS-UDC 2016) and to inform the update of the Future-Proof Growth Strategy for the whole sub region. The Future-Proof area (see map in Appendix 2) includes the following settlements areas:

- **Waipa District**: Cambridge, Te Awamutu/Kihihi, Rest of District.
- **Waikato District:** Tuakau, Pokeno, Te Kauwhata, Huntly, Ngaruawahia, Raglan, Taupiri, Horotiu, Gordonton, Matangi, Tamahere-Tauwhare, Whatawhata, Te Kowhai, Rest of District.
- **Hamilton City**

Specifically, the Future-Proof council partners are looking to understand for all the Future-Proof areas listed above and in Appendix 3: (i) the nature of demand growth they are likely to face in the short, medium and long term; (ii) the implications this demand growth will have on land requirements for residential and non-residential activities; and (iii) implications for planning.

This proposal covers the construction of the residential and non-residential demand growth and capacity projections/models. These are:

(i) employment and value added projections by sector[1] and CAU[2];
(ii) Gross Floor Area (GFA) by sector and CAU[2] based on (i);
(iii) residential land and dwelling capacity by catchment[3];
(iv) non-residential land/floorspace capacity by catchment[3]; and
(v) residential demand for dwellings by catchment[3].

Our proposal is to establish an approach that is replicable and flexible and is able to be updated (as per the NPS requirement PB1) easily as new data and options (scenarios) become available in the future.

[1] Refer to Appendix 1

[2] Waikato District CAUs containing multiple land uses will be disaggregated into rural and urban CAUs.

[3] Catchments will be based on CAUs where the CAUs will be aggregated or disaggregated depending on geophysical, demographic and development characteristics.

2 Objectives

The main objective of this proposal is to meet the parts (refer to section 3) of NPS-UDC PB1, PB2, PB3 and PD1 requirements for the Future-Proof partners. Specifically:

- Based on the Hamilton macroeconomic model, M.E will construct a multi-regional macroeconomic model covering the proposed Future-Proof area. The model will be consistent with the latest changes to input and output data into the WISE model;
- The multi-regional macroeconomic model will be compatible, to the greatest extent possible, with the Waikato Region Economic Futures Model (as owned by EW), the economic model used within the Waikato Integrated Scenarios Explorer (WISE) Decision Support System and the Hamilton macroeconomic model (as owned by HCC);
- Provide a CAU[4] level employment and value added projections model based on the econometric method used to calculate Waikato Region LTPs 2018-2028 CAU level employment and value added projections;
- Incorporate the CAU level employment and value added projections model outputs with the Gross Floor Area model constructed by M.E;
- GFA estimates will draw on the most recent information from both the Future-Proof area economy and Auckland;
- Provide estimates of the demand for dwellings by dwelling type, location and price point; and
- Convert the household projections supplied by the partners into estimates of residential and non-residential capacity that will take into account the economic viability of development and likely future price changes to provide an accurate estimate of capacity to meet short, medium and long term growth requirements.

3 National Policy Statement Requirements and Scope

In terms of the NPS, the work covered in this proposal, together with the work that the Future-Proof partners have opted to do, will cover the Evidence Base (less the monitoring component) section requirements of the NPS-UDC. The table below outlines NPS requirements and whether they are undertaken by M.E as a part of the proposed work in this proposal (coloured in red text), met by the work undertaken by the Future-Proof partners (coloured in blue text), and undertaken by both the Future-Proof partners and M.E (coloured in green text).

[4] Waikato District CAUs containing multiple land uses will be disaggregated into rural and urban CAUs.

Table 1: National Policy Statement Requirements and the Requirement Provider

PB1 – Local authorities shall, on at least a three-yearly basis, carry out a housing and business development capacity assessment that:	
a	Estimates the demand for dwellings, including the demand for different types of dwellings, locations and price points, and the supply of development capacity to meet that demand, in the short, medium and long-terms; and
b	Estimates the demand for the different types and locations of business land and floor area for businesses, and the supply of development capacity to meet that demand, in the short, medium and long-terms; and
c	Assess interactions between housing and business activities, and their impacts on each other.
PB2 – The assessment under PB1 shall use information about demand including:	
a	Demographic change using, as a starting point, the most recent Statistics New Zealand population projections;
b	Future changes in the business activities of the local economy and the impacts that this might have on demand for housing and business land; and
c	Market indicators monitored under PB6 and PB7. (Note that PB6 and PB7 are monitoring requirements and land use price differentials analysis that are not part of this proposal, but the outputs can be used in the work where available).
PB3 – The assessment under policy PB1 shall estimate the sufficiency of development capacity provided by the relevant local authority plans and proposed and operative regional policy statements, and Long Term Plans and Infrastructure Strategies prepared under the Local Government Act 2002, including:	
a	The cumulative effect of all zoning, objectives, policies, rules and overlays and existing designations in plans, and the effect this will have on opportunities for development being taken up;
b	The actual and likely availability of development infrastructure and other infrastructure in the short, medium and long term as set out under PA1;
c	The current feasibility of development capacity;
d	The rate of take up of development capacity, observed over the past 10 years and estimated for future; and
e	The market's response to planning decisions, obtained through monitoring under policies PB6 and PB7. (Note that PB6 and PB7 are monitoring requirements and land use price differentials analysis that are not part of this proposal, but the outputs can be used in the work where available)
PB4 – The assessment under policy PB1 shall estimate the additional development capacity needed if any of the factors in PB3 indicate that the supply of development capacity is not likely to meet demand in the short, medium or long term.	
PD1 – Local Authorities that share jurisdiction over an urban area are strongly encouraged to work together to implement this national policy statement, having particular regard to cooperating and agreeing upon:	
a	a) The preparation and content of a joint housing and business assessment for the purposes of policy PB1; and
b	b) The provision and location of sufficient, feasible development capacity required under the policies PA1, PC1 and PC2.

4 Method

The construction of a macroeconomic model, CAU[5] level economic and GFA projections, estimates of capacity (residential and commercial) and residential demand will be carried out in a staged manner. It is important to recognise that the sequence of work outlined is presented as a guide. It is likely that work will proceed in parallel on several of the stages, and it may be the case that some aspects are completed ahead of others depending on data delivery and other issues.

Furthermore, the work will be iterative rather than purely linear with opportunities for council engagement/involvement in the modelling offered throughout.

Stage 1: Future-Proof Area Macroeconomic Model

1. Construct and Future-Proof area macroeconomic model

   First, a multi-regional macroeconomic model covering Hamilton city and the rest of the Future-Proof sub Region is constructed. The model will be based on the input-output framework and structurally similar to the WISE economic module and the existing HCC macroeconomic model. This ensures that the model is internally consistent and results can be benchmarked against the WISE and the HCC macroeconomic model. The final model will be provided in R programming language.

2. Calibrate the Future-Proof area macroeconomic model to be consistent with the latest WISE and HCC macroeconomics outputs

   In this stage, the Future-Proof area macroeconomic model will be calibrated against the WISE model outputs and, subsequently, the Hamilton macroeconomic model outputs. This step is required as the WISE economic outputs are affected by land use changes, based on the supply constraints of available land. As such, inputs into the macroeconomic model, mainly final demand components, will be updated to match the WISE output.

The Figure below outlines the process and data inputs used in Stage 1 and Stage 2.

[5] Waikato District CAUs containing multiple land uses will be disaggregated into rural and urban CAUs.

FutureProof area macroeconomic model and CAU level projections

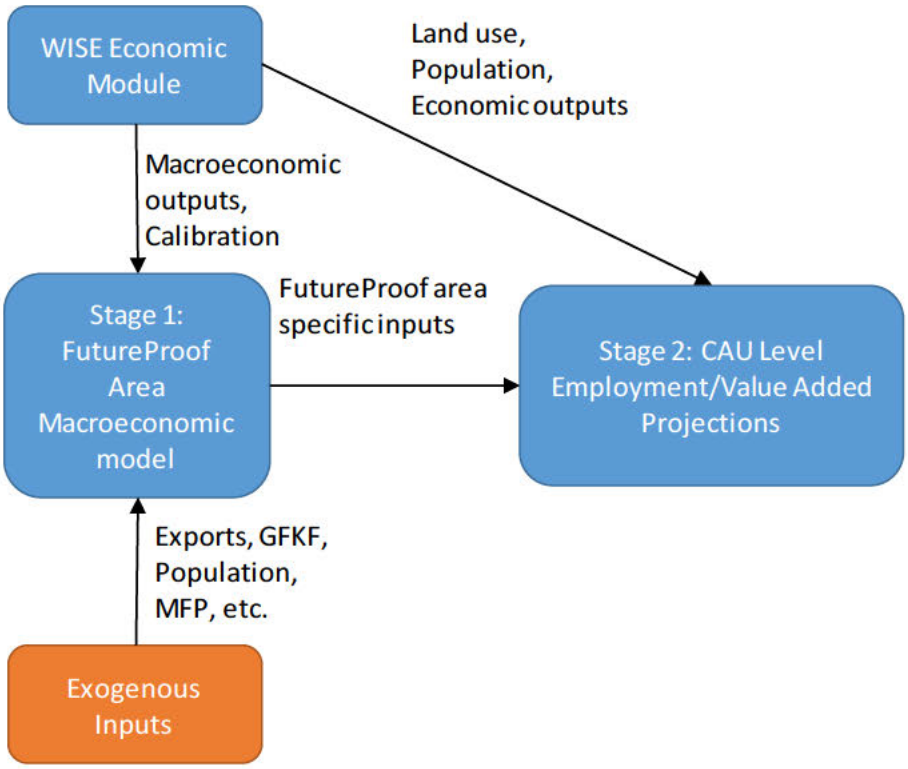


Figure 1: Future-Proof area macroeconomic model construction process

Stage 2: CAU Level Projections

There are two main tasks in this stage: (i) calculating CAU[6] level employment and value added projections; and (ii) constructing an employment and value added projections model.

First, as a part of the Waikato Regional Council's Long Term Plan (LTP) process, M.E provides the regional council and Future-Proof councils sectoral employment and value added projections by 1-Digit ANZSIC industries (refer to Appendix 1) for all CAUs within the Waikato Region.

Subsequently, M.E will create a sectoral employment and value added projections model for the CAUs[6] within the Future-Proof area boundaries. The model will be based on the econometric method used to calculate Waikato Region CAU level employment and value added projections. The model will calculate projections based on exogenous inputs of Future-Proof area (i.e. population, spatial land use and Future-Proof area macroeconomic model outputs), Waikato Region (excluding the Future-Proof area) and rest of New Zealand.

[6] Waikato District CAUs containing multiple land uses will be disaggregated into rural and urban CAUs.

As per the Future-Proof partner's requirements, the model can be used to calculate employment and value added projections following modification to any exogenous inputs (requirement for NPS PB1). The model allows the councils to assess future spatial employment patterns by inputting scenarios on future land use patterns. Subsequently, the model output will affect the future GFA and land area requirement projections in Stage 3. The final model will be provided in R programming language.

Stage 3: Translating Economic Projections into GFA

In this stage, M.E propose to translate the employment and value added projections from the Stage 2 into land area and floorspace (i.e. GFA) requirements for non-residential uses by location (i.e. CAU[7]) and broad economic type (e.g. commercial, industrial and retail). Particularly, the economic projections will be translated into built form. This is important to understand for planning purposes as it has a direct bearing on the various zoning policies councils will need to consider into the future – and to meet the requirements of the NPS.

The translation process involves assessing current employment to GFA ratios by economic sector in both Future-Proof area and Auckland and apply them to the aligned growth projections for the Future-Proof area. This will result in a first cut GFA projection, by location into the future. These will be tempered by increasing productivity over time to mimic businesses looking to minimise costs and maximise their returns. The output will be a set of GFA projections by CAU[7] by economic sector into the future. The GFA projections will sit in a projection model that is live and will adjust to changes in the projection sets (as per the requirement of PB1).

The key stages to this process are outlined in Figure 2 below. In summary they are:

1. Estimating the total floorspace required for each industry sector by location based on the application of ratios of floorspace per employee at the industry sector level to the employment forecasts.

2. Estimating the differentials in floorspace productivity (floorspace per employee) by location within the Future-Proof area and applying these differentials of floorspace to refine the above estimates of floorspace by location.

3. Estimating the likely development profiles of areas that are not currently urbanised based on development patterns in different locations within existing urban areas.

4. Triangulate the floorspace by location and industry sector with the total floorspace information (for all industry sectors, or broader groupings of industry sectors) from the Future-Proof partner's rating database.

5. Apply rates of floorspace productivity growth through time to future estimates of floorspace demand by location across the Future-Proof area.

[7] Waikato District CAUs containing multiple land uses will be disaggregated into rural and urban CAUs.

It is important to note that the appropriate linkages between the demand for GFA and the demand for land need to be established. Land and GFA have important linkages and together become more intensively developed through time, which has an impact on the alignment between capacity and demand.

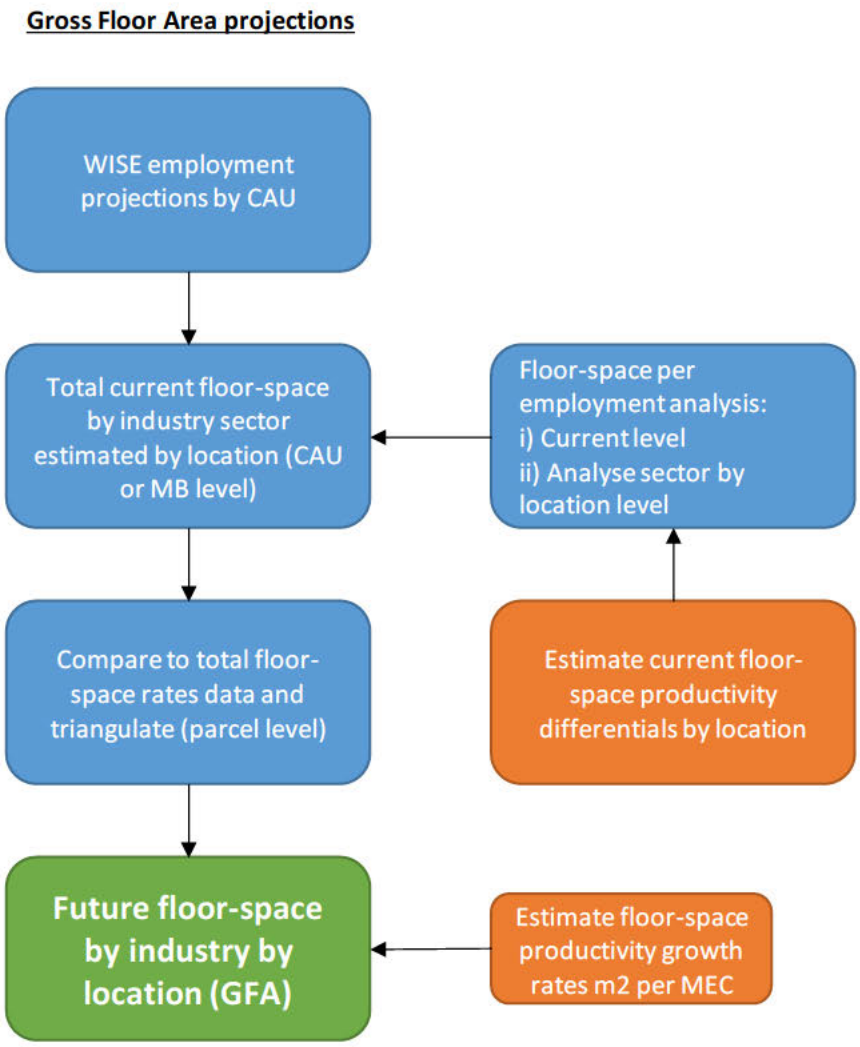


Figure 2: Construction process of future GFA

Land and floorspace demand components must interact with each other to ensure alignment between the demand calculated by location for floorspace and land. This is because the floorspace demand in each location will be directly correlated with the land required to accommodate it. The ratio between land and floorspace and how this differs within each industry sector across the expanded urban area (i.e. where some areas are developed more intensively due to land values and location demand than others) should follow the same patterns of space use intensity as calculated within the floorspace demand calculations (i.e. employees in locations where space is cheaper will generally have a greater floorspace per employee and vice versa).

To translate economic projections at the CAU[8] level into land area we will assess current land use productivities in the Future-Proof area and Auckland and use existing figures as a guide to future land requirements. It is important to note that future land use may differ from current land use within each economic sector. Therefore we will apply land use productivity growth rates based on recent trends to future growth to provide more realistic land use requirements by type and by location. This may be especially important for commercial land uses, such as retail, where existing productivity differences are likely to be large between centre and fringe. Therefore growth will lead to both an expansion of area, and an increase in existing productivity. The output from this step will be used as an input into the Stage 5. The key stages to this process are outlined in Figure 3 below.

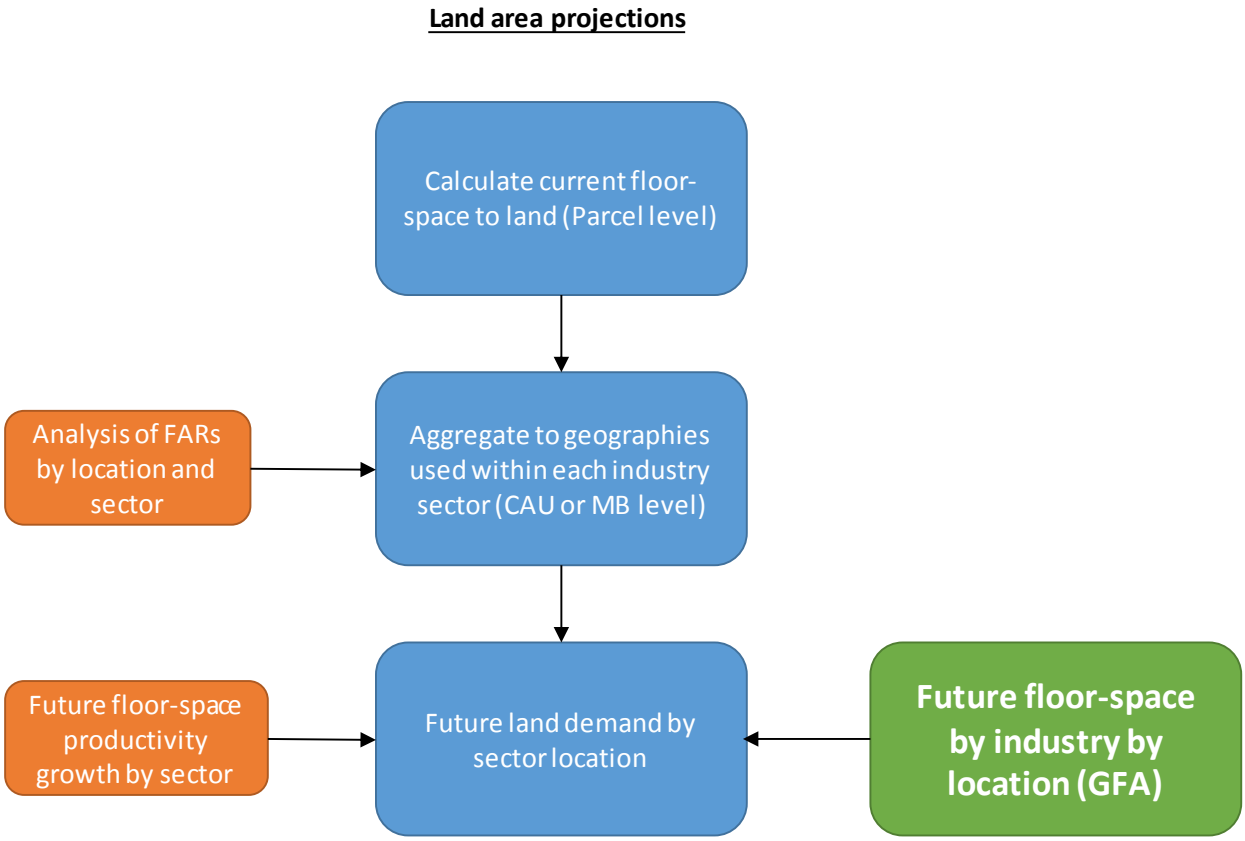


Figure 3: Construction process of future land area

Stage 4: Assessing Residential Land Capacity by Location

Identify the capacity available to accommodate future residential growth in the Future-Proof area by location: We propose to identify the capacity for Future-Proof area to accommodate

[8] Waikato District CAUs containing multiple land uses will be disaggregated into rural and urban CAUs.

future residential growth through infill and greenfield development by location[9]. To do this, we will identify residential property parcels which are likely to have the potential for future infill development. This process will take into account the zoning regulations of each area, the configuration of existing dwellings on the parcel and whether it is serviced by infrastructure. This will then be assessed in terms of its development feasibility by applying similar processes to those developed for the Auckland Unitary Plan hearings.

The following points identify the key stages within this process:

1. Create a database of all residential property parcels within the Future-Proof area's existing urban areas and assign key attributes of zoning, existing dwellings and floorspace, and infrastructure serviceability through GIS spatial integration techniques.
2. Use zoning rules within each area to identify which parcels are of sufficient size to allow multiple dwellings, and identify the potential number of further dwellings that could be located on each parcel (taking into account the number of existing dwellings as specified within the rating database).
3. Develop likely development profiles for areas of future urban growth based on the development profiles within existing urban areas by location.
4. Using infrastructure serviceability information provided by the Future-Proof partners at the CAU level, identify which parcels are anticipated to be served by infrastructure into the future.
5. Using this subset of parcels, examine the placement of existing buildings on each parcels to indicate the potential for future dwellings to be accommodated. This process takes into account whether a driveway access is possible to maintain access to the front and rear of each parcel using a geometric technique applied to the vertices of the existing dwellings and boundaries of the property parcel.
6. A visual inspection of aerial photographs to ascertain the potential to accommodate a further dwelling onsite will be conducted on this further refined subset of parcels. This approach takes into account whether sufficient space exists (given the placement of the existing dwelling(s) to accommodate a further dwelling on site.
7. A development feasibility model approach as developed for the Auckland Unitary Plan hearings will be applied to estimate the share of infill dwellings that are likely to be delivered.
8. This process will provide an estimate of the capacity for infill development by location across the Future-Proof area in relation to both total capacity as provided for under the plan, and an estimate of the capacity likely to be economically developable.

Assessing the greenfield capacity is more direct as it is simply the area of zoned residential greenfields land translated into future lots by applying the zoning rules and infrastructure serviceability information from the Future-Proof partner's Asset Management Plan. These models will provide information on the availability of land to accommodate housing as and when demand requires it. The model will output economically viable residential capacity by area by time period (short, medium and long term).

[9] Location (i.e. catchment) will be based on CAUs where the CAUs will be aggregated or disaggregated depending on geophysical, demographic and development characteristics.

Stage 5: Assessing Non-Residential Land Capacity by Location

Assess future non-residential capacity by location: We propose to work with the Future-Proof partners and their rating data bases to assess the capacity for commercial and industrial development across the city. Future-Proof partner GIS teams should be able to provide information on parcels that are vacant by zone or those that have a significant portion of vacant space (in particular the parcels that have only a small amount of development). This information, which can also be determined by an improvement to total capital value ratio, quickly identifies properties with development potential when matched against the current zoning regulations. Capacity in centres will be further categorised into ground floor versus above ground to ensure that retail capacity is adequately provided for. Volumetric analysis of the plans zone rules will provide capacity information for commercial office space.

We propose to translate this data into estimates of capacity by location[10] by land use category (industrial, commercial, retail etc. – depending on the zoning types). Note that to do this we will also utilise employment density and industry productivity information to ensure that space is translated into capacity in line with the way that space is actually used. We recommend that a council analyst visually checks the industrial and commercial areas within the Future-Proof area to ensure that the zoning actually reflects existing activity – or if not, why that may be. When combined with desktop analysis of aerial photos and /or Google Earth it provides a rich, detailed dataset of the Future-Proof area's economic activity. Finally, if required, we will assess the interplay between commercial and residential within centres as they have the potential to compete for the same space (apartments and office).

Assessing the capacity within areas that will be urbanised in the future requires an assessment of the likely development profiles within existing urban areas across different locations. This will help to identify the likely development density and industry mix by location.

When combined with the anticipated growth data, this assessment provides a sound basis for decisions on zoning additional land, development contributions and asset management. Importantly, the process outlined ensures Future-Proof partners are well placed to meet their requirements under the NPS-UDC, 2016.

Stage 6: Assessing Residential Demand for Dwellings by Location

Identify the demand for dwellings by location in the Future-Proof area and by dwelling type and price point: We propose to generate estimates of demand for residential dwellings by type of

[10] Location (i.e. catchment) will be based on CAUs where the CAUs will be aggregated or disaggregated depending on geophysical, demographic and development characteristics.

dwelling, price and location[11] across the Future-Proof area. This will meet the requirement under the NPS-UDC Policy PB1a.

We will convert household projections provided by Future-Proof partners into different dwelling types. The household projections supplied by Future-Proof partners will be provided at the CAU level and will be disaggregated by household composition.

M.E will conduct an analysis of the relationship between household type and dwelling typology using detailed spatial data on dwellings by type, floorspace, rating valuation and sales price information. This data will be supplied by Future-Proof partners tagged to a property parcel level GIS shapefile. Future-Proof partners will conduct prior work to 'clean' the data and attach it to the property parcel file. Where required, data may need to be purchased by Future-Proof partners from CoreLogic if insufficient data is unavailable within Future-Proof partner's database.

M.E. will also undertake analysis on the price points of dwellings demanded in each location. Income profiles will be applied to the household forecasts on a locational basis and used to estimate the ability to pay for housing costs in the future, generating demand for dwellings by different price point.

Gradual changes in dwelling stock and price points demanded will be generated through the changes in the household type structure through time, together with gradual changes in propensity for demand for different types of dwellings. This will be modelled looking at revealed preferences based on census data and also compared against the extremes of the Auckland market. This will provide insights as to where the Future-Proof area market may head.

The final output will be a demand for different types of dwellings by price point in each location across the Future-Proof area based upon the population household projections provided by Hamilton City Council, Waipa District Council and Waikato District Council.

5 Data Requirements

We will require a range of data including, but not limited to;

1. For each property parcel:
    a. Total floorspace.
    b. Type of dwelling.
    c. Zoning.
    d. Land area of parcel.
    e. Number of dwellings.
    f. Land use as listed in the ratings database.
    g. Land value + improvements value.

2. For each meshblock:
    a. Property sales by dwelling type and size (preferably in floorspace).

[11] Location (i.e. catchment) will be based on CAUs where the CAUs will be aggregated or disaggregated depending on geophysical, demographic and development characteristics.

b. Date of sales.
c. Any information on the purchasers (e.g. first home buyer, family, investor – not sure if this data is collected or not).

3. GIS shapefiles (with the above information linked into them):
    a. The building footprint within each parcel.
    b. The parcel boundaries.
    c. Zoning files (I think we already have this from an earlier job with HCC, but we would need permission to use it again, and also to make sure it's the most up to date one).

4. Infrastructure - A tag for each CAU as to when it will be fully serviced by infrastructure.

5. Outputs from the HCC Growth Models and WISE.

6. Land use information – what happens where.

7. CAU level population projections.

There is likely to be a range of information required that can be provided by Future-Proof partners. We will work with the Future-Proof partners at inception to define exactly what is required and when.

6 Budget and Timings

The table below provides a detailed breakdown of the fees, hours and elapsed time to undertake the work. Note that all fees are exclusive of GST and disbursements. Disbursements include travel, accommodation, and data purchases (if necessary). An initial inception meeting will be held at the start of the project covering team introductions, project scope refinements and timing and the M.E modelling frameworks. The cost for the project is estimated to be [redacted] excluding GST and any direct disbursements. Any extra work, beyond the scope described in the proposal will be discussed with HCC and Future-Proof partners before we undertake it. Contingency costs associated with the extra work is capped at 20 per cent of the estimated cost (twenty percent equals to [redacted]).

Project disbursements and direct costs will be passed on to the Future-Proof partners. Examples include data costs from CoreLogic and potentially MarketView as well as travel and accommodation. The exact requirements and cost implications will be discussed and clarified during the project inception process.

Table 2: Estimated Fees and Timeframes

Stage		Description	Hours	Fees ($ Excl. GST)	Estimated Start Date
1	FutureProof area macroeconomic model	1. Construct a macroeconomic model	24	$ [redacted]	Apr-17
		2. Calibrate the macroeconomic model to be consistent with the latest WISE outputs	8	$ [redacted]	
2	CAU level projections model	Construct employment and value added projections model for the CAUs within the FutureProof area.	18	$ [redacted]	Apr-17
3	Translate CAU projections into GFA for DC Model	Translate WISE output by economic sector into GFA (sqm) by location and to land requirements (ha).	16	$ [redacted]	Apr-17
4	Residential Capacity by Catchment	Assess existing capacity within the FutureProof area using existing zoning rules and rating data to highlight how much capacity exists and is likely to be developed in the short, medium and long term. Provide assessment in NPS - Urban Development terms. Align with requirements under the NPS.	72	$ [redacted]	May-17
5	Non-Residential Capacity by Catchment	Assess non-residential capacity using zoning rules, land to capital value ratios to highlight potential for redevelopment, and area of greenfield land by location. Short, medium and long term capacity established. Carry out all the requirements as outlined under PB1 in NPS on Urban Development.	62	$ [redacted]	May-17
6	Residential Demand by location	Assess residential demand for dwellings by location	89	$ [redacted]	Jun-17
Total			**289**	$ [redacted]	
	Direct Disbursements	Likely to be a requirements for CoreLogic data - land value, land use. To be charged as required.		TBC	
	Contingency	Contingency costs associated with the extra work beyond the scope of the proposal is capped at 20 per cent of the estimated total cost.		TBC (capped at [redacted])	

The proposed work is dependent on Future-Proof partner's cooperation on the supply of the stipulated date requirements above. As such, above time estimates are based at the date of writing this report (28/03/2017) and may be subjected to change.

7 Outputs/Deliverables

The key deliverable will be;

- The Future-Proof area macroeconomic model.
- Employment and value added projections model consistent with the CAU level (or sub-CAU level for some areas in Waikato District) projections. The model can calculate a CAU level employment and value added projections following modification to exogenous inputs, such as land use and population (requirement for NPS, PB1).
- Projections of land use (ha) and GFA (sqm) by sector over time (requirement for stage 3).

- Demand growth and feasible capacity projections to meet the requirements of growth for both residential and non-residential summarised into short run, medium and long run, as required under the NPS, PB1, for both the required WISE population projections scenarios (low and medium).
- The demand for dwellings by location (based on CAU level. Maybe aggregated or disaggregated based on CAU characteristics) in the Future-Proof area (as per Appendix 3) and by dwelling type and price point, as required under the NPS, PB1 , for both the required WISE population projections scenarios (low and medium).
- A detailed report that documents the approaches and methodologies used, assumptions and issues identified. The report will summarise the initial findings and provide users the ability to interpret model output and to understand the effects of future change.

M.E will deliver these outputs to the FutureProof partners in two stages:

- Draft demand and capacity outputs – end of June 2017
- Final outputs, including models and report – end of July 2017

Please note that the exact nature of final deliverables will be determined at inception and may be subject to change.

8 Conflicts of Interest

As far as we (M.E) are aware, the proposed work/outputs outlined in this proposal does not have any conflict of interest issues. However, it is important to note that M.E is currently committed to provide services to the Waikato Regional Council which are directly and indirectly related to the proposed work. Although highly unlikely, this may cause a potential conflict of interest issue between M.E. and Future-Proof partners in the future. There could be a case of conflicts between Future-Proof partners and the Waikato Regional Council but this is beyond our control.

The following table summarises M.Es standard approach to managing conflicts of interests should any arise.

Step/Action	
Register	We will prepare a formal register detailing any emerging (or potentially emerging) conflict of interest. The register will be 'open' and transparent and will be shared with the client. The register is appropriate for 'low' level conflicts.
Restrict	If the conflicts are more than 'low level', then we will put 'restrictions' in place. These restrictions could cover the involvement of team members in the overall project, parts of the project or processes associated with the projects. In essence, this mitigation is a separation of staff from the process. The conflict of interest is not likely to arise frequently. In addition, we may recruit a third (another) staff member from either Council or M.E to participate in the process to provide an additional layer of independence for the work.
Remove	If the conflict is likely to be ongoing and serious and where restrictions would not be appropriate, we will remove ourselves from the project. This will be done in close consultation with Council staff. The consultation would address the best exist strategy and how to treat costs and expenses. This step is not used very frequently and is seen as a last resort.

9 Relevant Experience and Team

Greg Akehurst: Director Market Economics – C.V. available if required

Dr Garry McDonald: Director Market Economics – C.V. available if required

Susan Fairgray: Consultant Market Economics - C.V. available if required

John Kim: Consultant Market Economics - C.V. available if required

Fraser Church: Analyst Market Economics - C.V. available if required

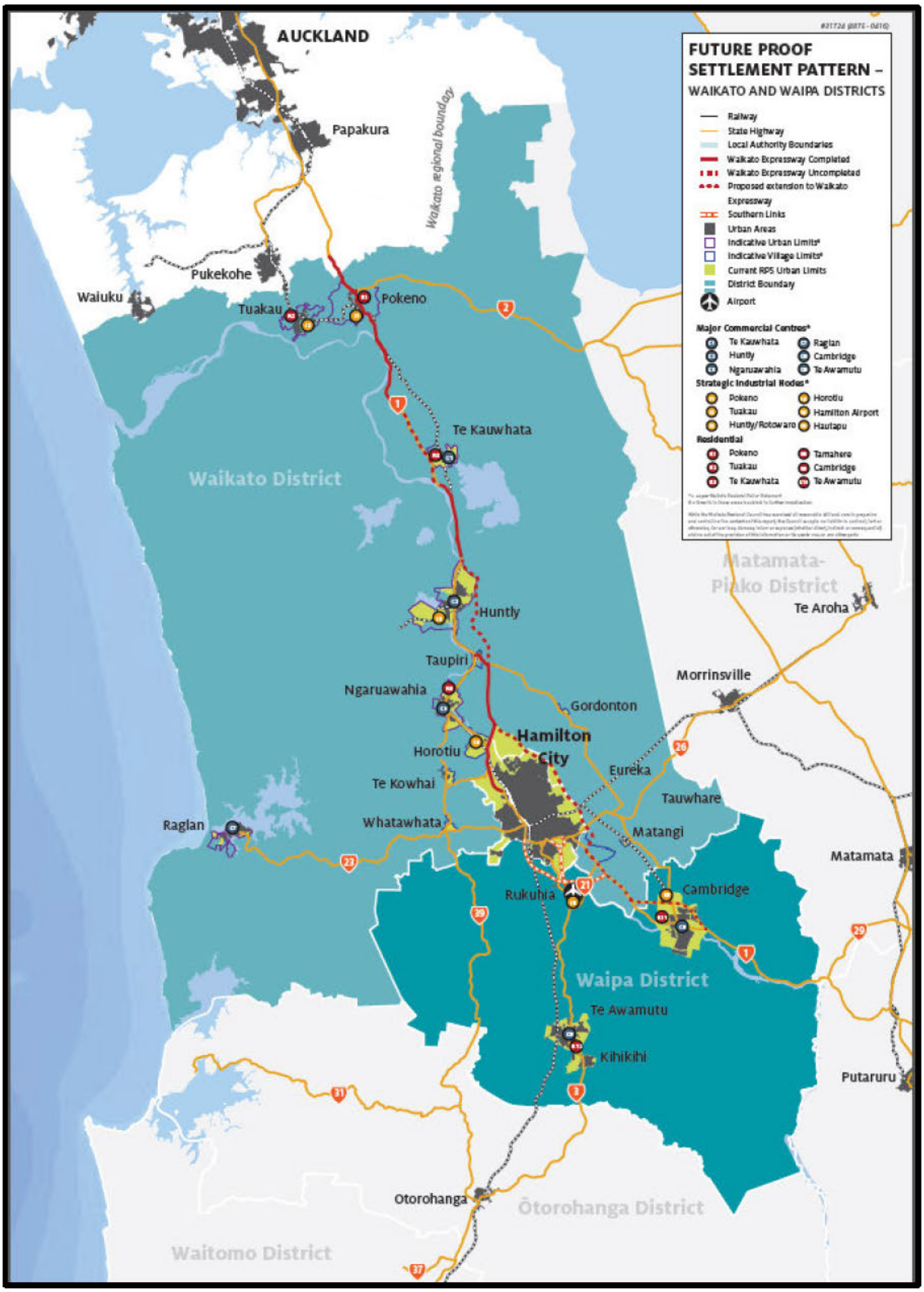
Appendix 1

1-Digit ANZSIC Industry Classification

Division code	Division description
A	Agriculture, Forestry and Fishing
B	Mining
C	Manufacturing
D	Electricity, Gas, Water and Waste Services
E	Construction
F	Wholesale Trade
G	Retail Trade
H	Accommodation and Food Services
I	Transport, Postal and Warehousing
J	Information Media and Telecommunications
K	Financial and Insurance Services
L	Rental, Hiring and Real Estate Services
M	Professional, Scientific and Technical Services
N	Administrative and Support Services
O	Public Administration and Safety
P	Education and Training
Q	Health Care and Social Assistance
R	Arts and Recreation Services
S	Other Services
T	All industries

Appendix 2

Map of Future Proof Settlement Pattern



Appendix 3

Future Proof Settlement Population Tables

Area	Population 2016	Household Growth Decades 1-3	Dwelling Capacity Decades 1-3
Waikato:			
Tuakau	4639		
Pokeno	2132		
Te Kauwhata	1769		
Huntly	7491		
Ngaruawahia	5424		
Raglan	3115		
Urban Total	**24570**		
Taupiri	472		
Horotiu	850		
Gordonton	1211		
Matangi	2326		
Tamahere-Tauwhare	6150		
Whatawhata	2786		
Te Kowhai	1623		
Rest of District	**10601**		
District Total	**24893**		
Waipa:			
Cambridge	17172		
Te Awamutu-Kihiki	13800		
Rest of District	20061		
District Total	51033		
Hamilton			
Greenfield			
Infill			
Hamilton Total	155,992		

Hamilton City Council
Te kaunihera o Kirikiriroa

Waikato Local Authority SHARED SERVICES

FORM OF INSTRUCTION FOR SERVICE

Instruction for Service: Reference / Purchase Order Number: PSP00001013/2021

This document should only be considered an Instruction for Service (IFS) once it has been signed and accepted by both the Client and Consultant's duly authorised signatory and sent back to the consulting company in PDF format.

The agreement is entered into under the Framework Agreement (the "Agreement") dated 1 August 2019 between **Hamilton City Council** and **Market Economics Limited**, and incorporates the terms and conditions set out in Schedule 2 of the Agreement.

IFS Description/Name: Housing Capacity Assessment Re-Base	
Group: Growth	Unit: City Planning
Site Location: Council Building, 260 Anglesea Street	
Client Rep: [redacted]	Consultant Rep: [redacted]
WLASS PSP Discipline: Discipline 5 - Planning	WLASS PSP Skill: Economic effects assessment / advice

A. Project Outcomes

A rebase of Hamilton City Council's 2021 Housing Development Capacity Assessment to reflect the additional capacity provided through our proposed intensification provisions as part of our NPS-UD plan change requirements, as well as to test other consequential changes in some General Residential areas.

B. Services to be provided

Phase 1 – Testing of plan enabled capacity scenarios including consequential changes to the General Residential Zone.

- An assessment of plan enabled capacity for several scenarios. This assessment will be based on basic height and density calculations to estimate the maximum capacity that could occur in each area. Summary data will be provided in excel format, including key assumptions.

Phase 2 – Assessment of final land use scenario.

- An assessment of plan enabled and commercially feasible capacity for a final land use scenario. This analysis will include more detail regarding the lot sizes, typologies and height limits for each area. It will also exclude areas subject to qualifying matters. This information will be provided to Market Economics Limited.
- The assessment will include a short technical report discussing the impact of the proposed scenario on plan enabled and commercial feasible capacity, including a discussion of likely take up of higher densities including apartments, and the impact on affordability, compared to the current status quo in the 2021 Housing Development Capacity Assessment.

C. Commencement and Completion Dates

Commencement	10 September 2021
Completion	23 December 2021

D. Deliverables

Phase 1:

- Excel file with summary data of findings

Phase 2:

- Technical report
- Output files in GIS format for mapping
- Excel files with summary data of findings

E. Key Performance Indicators (update and include others as required)

Performance with respect to client satisfaction.

F. Fee

Invoices related to this IFS must note the contract identifier and Purchase Order.

The value of this IFS is capped to [redacted] excl GST. Any increase to this fee value must be agreed by both parties in writing prior to any services related to the fee increase being undertaken.

Component	Hours	Cost (excl. GST)
Data Cleaning and GIS set-up	8	[redacted]
GIS Modelling	24	[redacted]
Plan Enabled Spreadsheet Modelling	24	[redacted]
Feasibility Modelling	56	[redacted]
Affordability section	8	[redacted]
Report writing	30	[redacted]
Total	**150**	[redacted]

G. Work Package Insurance Levels

Professional Indemnity Liability will be limited to 5 times the fee up to a cap of $2M.

H. Additional Contract Documents

Not applicable.

I. Other Consultants

Not applicable.

J. Client Provided Information

- Spatial extent of intensification areas (parcel level) for phase 1 and phase 2
- Height limits and minimum lot sizes for each intensification area
- Indication of anticipated dwelling typologies for each intensification area
- Areas that contain qualifying matters will be removed, or scaled back to reflect the qualifying matter
- Indications of infrastructure constraints / limits for each area.

ACCEPTED and **SIGNED** on behalf of *Enter PSP Member* by: Market Economics

[redacted]

Signature Date: 10/09/21

[redacted]

Print Full Name & Title:

☑ There is no conflict that requires declaration

ACCEPTED and **SIGNED** on behalf of *Enter PSP Member* by:

Signature [redacted] Date: 16/10/21

Print Full Name & Title: [redacted]

☑ There is no conflict that requires declaration

12/11/21 **VARIATION NO.** **VO#** 001

PSP00001013/2021 Housing Capacity Assessment Re-Base

CONSULTANT: Market Economics Limited **ISSUED: 12/11/21**

Variation Order Type: Scope & Purpose

Details:
Amended scope to model the impacts of the new MDRS standards introduced by the Resource Management (Enabling Housing supply and Other Matters) Amendment Bill. This work requires additional detail to assess the impacts of a very different type of housing supply on the amount of plan enabled and commercially feasible capacity across Hamilton involving substantial updates to Market Economics' models.
Previous Cost Value : [redacted] Variation Amount Value: [redacted] Amended Cost Value: [redacted]

Work to be completed by 31/01/22 as described.

Issued by: [redacted]

Delegated Authority Signature [redacted] 23/11/21

[redacted]