



# Review of Housing and Business Development Capacity Assessments of Future Proof Partners



Report to the Ministry for the Environment

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## Executive summary

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The Ministry for the Environment (MfE) appointed Principal Economics and Urban Economics to review the Future Proof Partners' (FPP) Housing and Business Development Capacity Assessment (HBA). The focus of our review is on the requirements of the National Policy Statement on Urban Development 2020 (NPS-UD 2020). We have provided some suggestions in addition to the requirements to assist with improving the accuracy of the HBA. The outcomes of this review will provide indication of the areas of improvement for the next round of HBA.

[Overall, the HBA provides a comprehensive assessment and meets the requirements of the NPS-UD 2020](#)

The HBA provides an appropriate structure, with useful information on demand by type, location and different household composition.

[The HBA's capacity assessment is consistent with the NPS-UD guidelines](#)

The approach used for the assessment of plan-enabled, infrastructure-ready, commercially feasible and 'Reasonably Expected to be Realised' (RER) capacity assessment is consistent with the guidelines of the NPS-UD 2020.

[The clarity of the HBA needs to be improved by providing further details on the assumptions of modelling](#)

There are a few suggestions for improving the HBA for the next round. This includes:

- Improving the clarity around the assumptions used for the projections, the justification for those assumptions and the potential impact of the assumptions on the findings from the HBA,
- Providing further information about the affordability analysis,
- Following the instructions provided by MfE and the Ministry of Housing and Urban Development (HUD) for discussions of price efficiency indicators,
- Providing discussions around aspects of Māori housing demand such as papakāinga housing, development trends on Māori land.

[While not directly required by NPS-UD 2020, further discussion of the influence of Auckland housing market will improve the robustness of the HBA](#)

While the NPS-UD 2020 does not provide a clear instruction for the impact of demand factors on prices, the impact of inter-regional migration on demand profiles is not clear. This is an important issue for this assessment given the high influence of the Auckland housing market on the FPP area's housing demand, particularly in the north.

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## 1. Introduction

The Ministry for the Environment (MfE) commissioned Principal Economics and Urban Economics to review the Housing and Business Development Capacity Assessments (HBAs) based on the guidelines of NPS-UD (2020). To do this, we follow the guidelines of the NPS-UD 2020 reviewing the methodology, assumptions and conclusions reported in the HBAs of Tier 1 and Tier 2 urban environments. For a list of Tier 1 and Tier 2 urban environments refer to Table 1.

**Table 1 Urban environments and local authorities**

<b>Tier 1 Urban Environment</b>	<b>Tier 1 Local Authorities</b>
Auckland	Auckland Council
Hamilton	Waikato Regional Council, Hamilton City Council, Waikato District Council, Waipā District Council
Tauranga	Bay of Plenty Regional Council, Tauranga City Council, Western Bay of Plenty District Council
Wellington	Wellington Regional Council, Wellington City Council, Porirua City Council, Hutt City Council, Upper Hutt City Council, Kāpiti Coast District Council
Christchurch	Canterbury Regional Council, Christchurch City Council, Selwyn District Council, Waimakariri District Council
<b>Tier 2 Urban Environment</b>	<b>Tier 2 Local Authorities</b>
Whangārei	Northland Regional Council, Whangarei District Council
Rotorua	Rotorua Bay of Plenty Regional Council, Rotorua District Council
New Plymouth	New Plymouth Taranaki Regional Council, New Plymouth District Council
Napier Hastings	Napier Hastings Hawke’s Bay Regional Council, Napier City Council, Hastings District Council
Palmerston North	Palmerston North Manawatū-Whanganui Regional Council, Palmerston North City Council
Nelson Tasman	Nelson City Council, Tasman District Council
Queenstown	Queenstown Lakes District Council (QLDC), Otago Regional Council
Dunedin	Dunedin City Council, Otago Regional Council

Source: MfE & HUD (2020)

The outcome of this review includes a short report for each council outlining how they performed against the evaluation criteria, examples of good practice HBAs, and recommendations for improvement that councils could use for the next round of HBA. To achieve this, our report:

- describes the different methodologies used by councils for their assessments and whether the approaches impact the conclusions reached by the councils;
- assesses the demand projections and their assumptions (in comparison with best practice) and the potential impacts of uncertain assumptions;

- provides an overview of the housing development capacity in each Tier 1 and 2 city and the actions each council has underway or proposes to meet the demand for housing;
- provides a review of the analysis of the impact of local planning decisions and how infrastructure provision affects the affordability and competitiveness of the local housing market, and how well the housing demands of Māori and different community groups are being met;
- prepares constructive feedback on the areas for improvement that can be shared with councils if changes are needed to their HBAs.

In this chapter, we detail the assessment criteria that we will use in undertaking our review of the HBAs.

In a separate report we provide:

- a summary of our findings from our review of HBAs;
- a range of exemplars for different parts of the analysis;
- overall suggestions for the Councils for improving the HBAs;
- options for how MfE and Te Tūāpapa Kura Kāinga - Ministry of Housing and Urban Development (HUD) could assist councils in the preparation of HBAs in the future.

## 1.1. Overview of methodology

For our methodology, we use the process criteria provided in MfE (2018) and adjust it for the changes from NPS-UDC (2017) to NPS-UD (2020). This includes an assessment of each outcome required by the NPS-UD and providing details and scores on consistency with NPS-UD requirements. In this section, we provide a short description of our methodology for this review. The next section provides a description of the requirements of NPS-UD (2020) and the methodologies used by the HBA to address the requirements.

For a systematic review of the HBAs, we listed the requirements of the NPS-UD in 7 tables. For a list of these tables see Appendix A. We determined if the assessment has reported on required criteria under the NPS-UD guidelines and test their uncertainty from inputs' robustness, assumptions and the underlying methodologies. For our reviews we evaluated if the HBAs satisfy the following criteria:

- Using rigorous estimate of aggregate demand for houses in the short, medium, and long term.
- Using market and price efficiency indicators.
- Investigating the impact of planning decisions on affordability and competitiveness.
- Investigating the Impact of infrastructure on affordability and competitiveness.

The review tables only provide a check box informing the review about the NPS-UD requirements that have been considered in the HBA. Further discussions of the inconsistencies with the NPS-UD and potential improvements for the next round of the analysis are provided in the body of the report – in Section 2.

For each requirement in the review tables, we use a score of low (1), medium (2) and high (3) to rank the methodologies, inputs and outputs based on the NPS-UD's guidelines and the best practice amongst HBAs. The ranks are defined as below:

1. A low score suggests that the HBA has not provided the expected details to satisfy the requirements of the NPS-UD or has only referred to it without using it to inform the assessment properly.
2. A medium score suggests that the HBA has used the required indicators/methods, but there is room for improvement, particularly on the certainty around the assumptions – for example, the assumptions may have not been described or justified properly.
3. A high score suggests that the HBA has used the required indicators and has used them properly to inform the assessment, leading to high certainty around the findings from the HBA.

A more extensive descriptive outcome of the review tables is presented in the HBA review in Section 2. The scores indicate the areas for improvement and the comments in the review tables provide details on the areas of improvement. While the scores are mostly based on the NPS-UD criteria, we acknowledge that the scores carry a level of subjectivity by the reviewer. Hence, we suggest using the comments describing the areas of improvement and not relying on the scores as an absolute indicator for the accuracy of the assessment.

## 1.2. A description of our methodology for review tables

For the housing demand assessments, we assess the robustness of the councils' demand projections, particularly regarding unique demand pressures that local councils may experience. For example, Queenstown Lakes District is expected to have higher demand for residential land per person relative to other areas given its volatile tourism population. If councils have not used Statistics New Zealand (Stats NZ) projections, we assess the rationale behind this choice and report its suitability for the purpose of the HBA.

In our review, we assess the HBAs' analysis of the *impacts of planning and infrastructure on affordability, competitiveness and housing demand by Māori and other groups*. For this, we cross check the inputs and outputs of the HBA analysis using our developed models based on Stats NZ and councils' data. We assess the different approaches/methodologies used by councils and determine how they impact the final conclusions determined by their analysis. We also try to test modelling assumptions and conduct sensitivity testing based on the respective methodologies utilised.

For our review of *the commercial feasibility assessment's methodology and calculations*, we assess if the HBAs take into account the 'reasonably expected to be realised' (RER) builds. Not all commercially feasible areas will be fully developed.

We assess *the communication of the assessment* based on clarity, narrative and usefulness to inform planning policy. We also review the *process* and if there has been an agreement between the relevant councils on the geographic area of focus for the assessment, if local expertise was sought and used, and if the methodology and assumptions were clear.

### 1.3. Meetings with the councils

The scope of this review is the HBA report. In the process of this review, we also contacted all councils and asked a range of high-level questions. This was to ensure that we include all the important information in our review. Some councils provided further supporting documents in response to our questions.

We also meet with councils and discuss the draft reviews. We use this opportunity to clarify the points highlighted in our reviews. Based on the information provided by councils in the meetings, we revised and finalised our review.

## 2. Review of HBA

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This section provides a description of the findings from our review of the Future Proof Partners' HBA. The detailed review tables are presented in Appendix A.

For the assessment of the Hamilton HBA, we used the HBA document, and the supporting documents as follows:

- Future Proof sub-region Housing Study: Demand Preferences and Supply Matters (Market Economics, 2020).
- Wise 2018 Waikato Population Projections – with extensive documentation available [here](#).
- 2017 Housing and Business Development Capacity Assessment.
- 2017 Housing Development Capacity Assessment by Market Economics.

Our reference to the HBA in our review includes the HBA report and all the supporting documents available to us – as listed above.

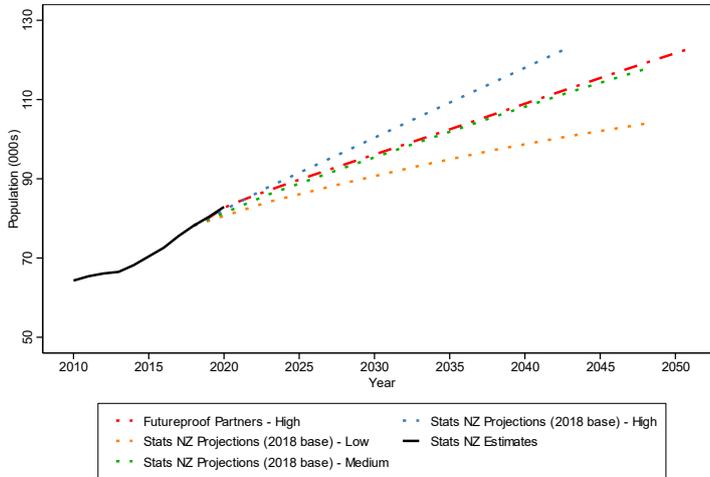
### 2.1. Overview of methodology

Overall, the HBA report provides an appropriate structure for the assessment. The analysis of demand is comprehensive and is based on a study of demand preferences and extensive modelling of population projections. The analysis of price efficiency is limited and its implications on findings from the assessment of the impact of planning on affordability are unclear.

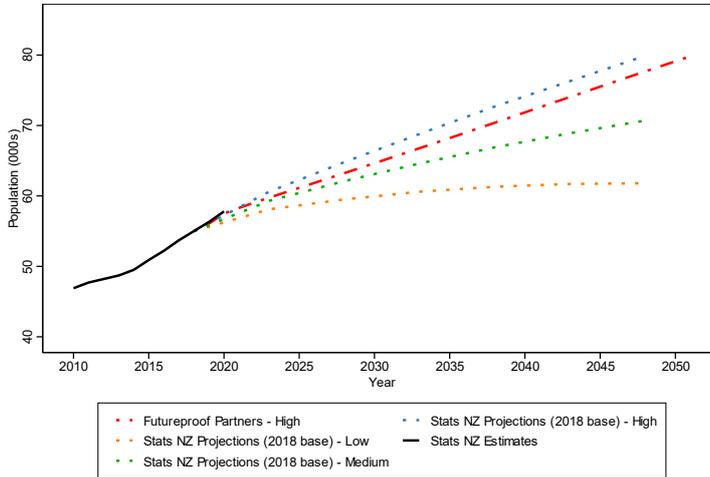
As illustrated in [Figure 1](#), the population projections seem consistent with the Stats NZ's population estimates.

**Figure 1 Population projections of FPP and Stats NZ**

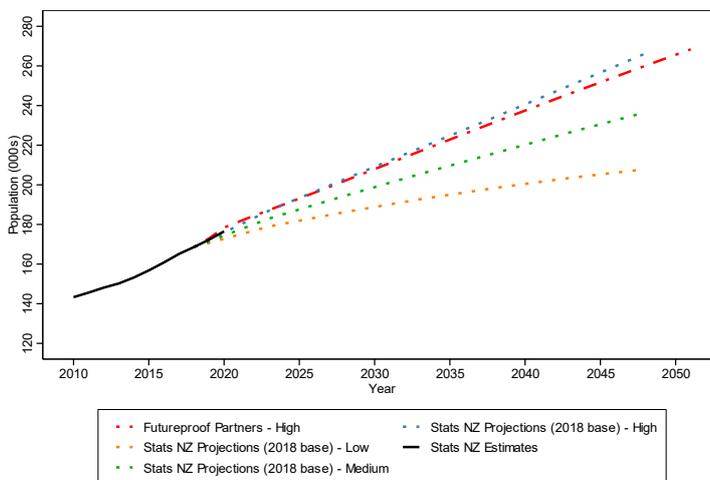
**Waikato District**



**Waipa District**



**Hamilton City**



Source: Stats NZ, Future Proof Partners' HBA 2021

The capacity assessment follows the instructions provided by MHUD and MfE around plan-enabled, infrastructure ready, commercial feasible and reasonably expected to be realised (RER). The most critical issue in the assessment of feasible capacity is that demand and supply are assessed separately assuming that price is exogenous to the impact of planning. This is contrary to the NPS-UD's discussions around the impact of CLM on prices. While we highlight this problem, we think that the issue is beyond the FPP HBA and requires MHUD and MfE to provide clearer instructions.<sup>1</sup>

## 2.2. Uncertain assumptions

The list of assumptions was not clear in the HBA. From the provided supporting documents, and based on our knowledge of the Market Economics' demand model from other HBAs that they have assisted with, there will be further clarifications required on the following assumptions:

- the household income distribution of each age group will remain the same,
- the assumption around the future dwelling type,
- the assumptions around the recovery path for COVID-19 impacts on migration,
- the assumptions of the affordability analysis and how they may affect the findings from the calculations.

The population projections have accounted for the impact of COVID-19. This has not been mentioned in the HBA report. The HBA should provide further discussions around the impacts and the source of the assumptions used for the projections.

## 2.3. Impact of planning decisions on affordability and competitiveness

The HBA provides a discussion around the impact of planning and infrastructure. This is covered most comprehensively in discussions with developers. In the development survey, respondents identify infrastructure as necessary for enabled development to occur. Furthermore, that infrastructure provision needed to align with growth in demand by location.

The impact of planning on affordability outcomes and competitive land market have not been discussed clearly enough. The HBA does not provide any guidance on the costs imposed on developments from potentially stringent planning regulation. The focus of the affordability analysis should be to estimate the affordability impact of the changes in housing supply, as measured from the housing supply assessment.

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<sup>1</sup> There are some references to the implications of planning regulations and the current market conditions on feasible capacity in section 10.4 of the guidance on HBAs by MfE & MHUD (2020). There is no clear instructions provided.

## 2.4. Impact of infrastructure on affordability and competitiveness

The HBA provided a reasonable assessment of the impact infrastructure on affordability. We do not have any information about the details of the transport modelling and its underlying assumptions. It will be important to clarify these and discuss the potential implications of any assumptions for the findings.

## 2.5. Pros and Cons of HBA

The HBA addresses the requirements of NPS-UD 2020. The HBA's presentation of the indicators of demand is extensive and useful.

The consistency between the demand model and the population projections is not clear. While NPS-UD 2020 does not provide a clear instruction for the impact of demand factors on prices, the impact of inter-regional migration on demand profiles is not clear. This is an important issue for this assessment given the high influence of the Auckland housing market on the FPP area's housing demand.<sup>2</sup> There has been references to the role of Auckland's market in the HBA, but there has been no analysis/scenario modelling presented.

## 2.6. Summary

The HBA report provides an appropriate structure for the assessment. The analysis has been comprehensive. There are a few suggestions for improving the HBA for the next round. This includes:

- Improving the clarity around the assumptions used for the projections, the justification for those assumptions and the potential impact of the assumptions on the findings from the HBA,
- Providing further information about the methodology of the affordability analysis,
- Evaluating the impact of the Auckland's housing market on the FPP area, particularly in the north,
- Following the instructions provided by MfE and HUD for discussions of price efficiency indicators,
- Providing discussions around aspects of Māori housing demand such as papakāinga housing, development trends on Māori land.

The conclusions of sufficiency of capacity (and the affordability impacts of planning) are sensitive to the assumptions discussed above. For example, assuming a responsive housing market in Auckland, implies a lower rate of domestic migration to the FPP area, which will lead to a significant decrease in the demand for housing at (likely) high price bands.<sup>3</sup>

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2 There are price scenarios considered in the analysis of capacity (housing supply), but that does not address the impacts on the demand side.

3 Our assumption about the price band of the Auckland migrants' demand is consistent with the HBA's references to the Auckland's demand for upper mid-value bands (particularly in Pōkeno).

Review tables provide further details about the points raised in this review.

## References

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Market Economics, 2020. Future Proof sub-region Housing Study: Demand Preferences and Supply Matters.

MfE & HUD. 2020. National Policy Statement on Urban Development 2020. Ministry for the Environment. Retrieved from: <https://environment.govt.nz/assets/Publications/Files/AA-Gazetted-NPSUD-17.07.2020-pdf.pdf>.

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MfE & HUD. 2017. National Policy Statement on Urban Development Capacity: Guide on Evidence and Monitoring. Retrieved from: <https://environment.govt.nz/assets/Publications/Files/FINAL-NPS-UDC-Evidence-and-Monitoring-guide.pdf>.

New Zealand Government. (2020). National Policy Statement on Urban Development 2020. Retrieved from: <https://environment.govt.nz/assets/Publications/Files/AA-Gazetted-NPSUD-17.07.2020-pdf.pdf>

Stats NZ. (2020). *Housing in Aotearoa, 2020*. <https://www.stats.govt.nz/reports/housing-in-aotearoa-2020>.

## Appendix A Review tables

Table 2 Demand analysis

The assessment's estimate of aggregate demand for homes in the short, medium and long term is consistent with the criteria of the NPS-UD 2020

Indicator	Score	Comments
Have all contributions to total housing demand relevant to the urban market been considered.	High	<p>Overall, the HBA provides a comprehensive assessment of demand in short, medium and long terms. The clarity could be improved by providing a description of how different pieces of information were used to inform the demand analysis. The WISE's NIDEA projections were used as an input to the Market Economics' demand model. This suggests that the population projections (and the demand model's dwelling demand) are fixed and do not change in response to price. While this assumption may be reasonable, the HBA needs to clarify this and discuss its implication for the analysis.</p> <p>More importantly, the HBA does not provide any assessment/scenario modelling of the impact of Auckland's housing market on demand projections. The 2017 HBA, however, had provided some further discussions around the impact of Auckland housing market and its influence on prices particularly in the north. The lack of discussion of the impact of Auckland may be because of the lack of linkage between the demand model and the WISE's projections. This needs to be clarified and discussed further.</p> <p>The HBA refers to potential impact of Auckland demand on mid upper value band houses, particularly Pōkeno. It will be useful to understand what part of the demand in different FPP areas will be more significantly affected from Auckland's housing market's spill-over effects.</p> <p>We still think that the HBA provides a comprehensive assessment, and the suggested improvements can increase the robustness of the findings. The HBA satisfies the requirements of NPS-UD 2020.</p>
A range of demand projections are used and provide assumptions and justification of why they have identified this as the most likely projection.	Medium	<p>The assessment of different demand projections has been provided. There has been analyses on the comparisons between different scenarios, available <a href="#">here</a>, but the HBA does not refer to this. The HBA only briefly says that they prefer the high growth scenario. It is not clear why the high growth scenario has been chosen as the preferred scenario.</p>
The short-term impact of COVID-19 has been considered	Medium	<p>While this is not a requirement of the NPS-UD 2020, many HBAs refer to the impact of COVID-19 on their projections. The WISE's supporting documents says that "COVID-19 has reduced international migration flows (both immigration and emigration), and this is picked up in the models through a projected reduction in those flows. Effectively, it has accelerated a reduction in net international migration towards the long-term trend". The source of this assumption is not clear. Further information on the recovery path could improve our understanding of the impact on projections.</p> <p>We have seen some references to the impact of COVID-19 on respondents' preferences on proximity to a GP in Market Economics' study of demand preferences using a survey (Market Economics, 2020).</p>

		There is no reference to the impact of COVID-19 in the HBA. Given the importance of the impacts on the short-term projections, some clarification on the impacts in projections and the justifications of the assumptions used for the WISE's projections will be beneficial.
Does the assessment use rigorous methods to explore the range of demands for <b>types, locations and price points</b> to the extent relevant in the urban market.	High	<p>The HBA attempted to provide a comprehensive assessment. The HBA reports the relationship between dwelling tenure, dwelling type and household type in 2020. These figures are based on Census 2018 ratios and adjusted to match household estimates in 2020. Household type, ethnicity, and tenure for 2020 have also been reported.</p> <p>Locations of housing demand have been provided. It is useful to provide further details on the methodology used for these projections.</p> <p>Demand for housing by household type, dwelling type and tenure are reported as part of this HBA for council's preferred projection. Demand for housing by income bracket, dwelling type and tenure have also been reported. Similarly, dwelling type, tenure, and household ethnicity.</p>
Does the assessment produce an estimated number of dwellings required in the short, medium and long term for the area (broken down by associated districts if relevant)?	High	The HBA, provides detailed tables showing the estimated number of dwellings required, over the short, medium and long term by associated districts and dwelling value bands.
Does the analysis use appropriate measures of affordability and housing demand?	Medium	<p>The HBA, compares the proportion of households that can afford housing at different prices points over time based on their level of income. The prices points are based on the RER capacity determined as part of the HBA assessment.</p> <p>The HBA could benefit from further explanation of how affordability has been calculated for different income groups. We have seen this in other HBAs that Market Economics has completed (for example for Queenstown) and we think that information is useful for the FPP's HBA.</p>
Does the analysis use price efficiency indicators – inc. price discontinuities and cost to market price ratio	Medium	<p>The HBA, assesses the rural urban differential and compares Hamilton with other high growth urban economies. The HBA also assess the land share of total dwelling value.</p> <p>The HBA, however, argues that these price signals do not provide useful information. This is inconsistent with the guidelines provided for HBA. We suggest Councils follow the provided guidelines for the purpose of the HBA. We also suggest MHUD and MfE provide further information about the price efficiency indicators.</p>

Source: Principal Economics

Table 3 Capacity analysis

The assessment produces a rigorous estimate of the realisable development capacity for housing provided by current plans and development infrastructure

Indicator	Score	Comments
Does the assessment reasonably quantify all housing development capacity enabled by relevant proposed and	High	Yes, the HBA provides a detail description of the operative and proposed district plans and strategy documents used to determine capacity for each council area.

operative RPSs, regional plans and district plans?		
Is the assessment clear about what enabled capacity is also supported by development infrastructure?	High	<p>The HBA notes that infrastructure capacity has been provided by councils and is included as part of the assessment capacity modelling.</p> <p>In the case of Hamilton City, the HBA notes that infrastructure capacity is unable to be measured given its complexity, with new larger developers required to test and identify any issues around infrastructure capacity. Given these issues, Hamilton City plans to use this HBA to inform their Infrastructure Master Plan.</p>
Accounted for impact of three waters and land transport infrastructure to service the development capacity	High	The HBA, uses infrastructure timing information for greenfield areas provided by councils to assess infrastructure serviced capacity.
Accounted for <i>additional</i> infrastructure to service the development capacity relevant to the local area	Low	<p>The HBA is unclear on the types of infrastructure assessed beyond development infrastructure.</p> <p>It would be useful to have some discussion on council's thoughts the ability for additional infrastructure to service development capacity as per Section 3.5(1) of the NPS-UD. Examples of additional infrastructure include educational facilities, telecommunications, power, and gas.</p>
Has a robust assessment of development feasibility been undertaken?	High	The HBA has undertaken a detailed assessment of feasible capacity. A GIS based model has been used to determine development costs of individual parcels accounting for enabled capacity and different development options (i.e. standalone and attached dwellings) with a 20% profit margin required as a test for feasibility.
Does the assessment determine sufficient capacity by type and location?	Medium	<p>The HBA, provides a comprehensive analysis of sufficiency by type in terms of existing estate, existing urban area, greenfield, and additional future potential by location.</p> <p>While dwelling type has been reported as part of the demand analysis, sufficiency by housing type have not been reported.</p>
Does the assessment provide information about how much of the provided capacity is realisable?	High	Estimating realisable capacity for greenfield land has been undertaken by applying average lot sizes. Realizable capacity in urban areas has been estimated by assuming fewer storeys in vertical development than enabled in plans. Realisable capacity around the spatial edge of urban areas has been estimated by using historical data relating to similar developments.
Is there a clear conclusion on whether realisable capacity for housing is sufficient?	High	The HBA provides detailed tables outlining sufficiency by area, over short, medium and long terms. This is further disaggregated where this capacity will be released from existing estates, existing urban area, greenfield and additional future developments.
Does the assessment analyse the contributing factors to any shortfall in sufficiency?	High	<p>The HBA identifies capacity shortfalls across all urban areas in Waikato in the short term. This is attributed to a lack of infrastructure in place for greenfield areas. This is expected to be mitigated in the medium and long term the proposed district plan and Waikato 2070 Plans, set out a significant expansion of infrastructure-served greenfield land which is expected to lead to a surplus of reasonably expected to be realised capacity.</p> <p>The HBA identifies a shortfall in the Hamilton City urban area in the long term. This is attributed to zoned capacity being commercially unfeasible under their current prices scenario.</p> <p>Under their growth scenario which assumes an increase in construction costs and faster increase in housing prices, a</p>

		surplus in RER capacity is expected in the Hamilton City urban area over the long term.
Does the assessment provide housing bottom lines ensuring demand projections support competitive markets? (HHI)	Low	The HBA, provides a comprehensive analysis of sufficiency by area and housing price bands for different scenarios but has not provided housing bottom lines as per NPS-UD requirements.
Has a 20% and 15% take-up margin been utilised to support competitiveness?	High	The HBA is clear in its application of competitiveness margins throughout its analysis.

Source: Principal Economics

### Plan enabled, infrastructure ready, commercially feasible and RER capacity assessment

Indicator	Score	Comments
<b>Plan Enabled Capacity</b>		
Does the assessment reasonably quantify all housing development capacity enabled by relevant proposed and operative RPSs, regional plans and district plans?	High	The assessment quantifies plan enabled capacity that is enabled by the district plan.
Does the assessment make use of a suitable yield assessment method?	High	Bespoke GIS modelling is used to assess the yield at the parcel level. This is found in section 4.1.2, p. 44, HBA.
Is the assessment clear about the district plan zones included to calculate the plan enabled capacity?	High	The district plan zones have been identified clearly and in accordance with the NPS-UD. This is found in figure 2.1, p. 4, HBA.
Does the HBA quantify the plan enabled capacity in infill and greenfield areas?	High	The assessment quantifies plan enabled capacity in both infill and greenfield areas. This is found in "Residential Capacity" section p.50-78 of the HBA.
Does the HBA clearly state the plan enabled capacity by type, size and price?	Low	The assessment provides a breakdown of capacity disaggregated by type for Hamilton City in the short-term. This is found in table 4-10, p. 66, HBA. The assessment does not provide disaggregation by dwelling type, size and price for the rest of the FPP area across different time-periods.
<b>Infrastructure Ready</b>		
Is the assessment clear about what enabled capacity is also supported by development infrastructure?	Medium	The assessment does highlight the infrastructure needs in infill and greenfields areas. However, the assessment does not provide detailed information about the strategies or the projects undertaken in specific areas to meet the sufficient capacity.
Does the assessment identify the infrastructure ready capacity by dwelling type, size, location and price?	Low	The assessment does quantify capacity by location but no information is provided for capacity disaggregated by dwelling type, size, and price.
Does the assessment identify the infrastructure ready capacity in short, medium and long term?	High	The assessment provides a breakdown of infrastructure ready capacity in the short, medium and long term. It is noted in section 4.1.8 p.50-91, HBA.
Is the assessment clear about what enabled capacity is also supported by development infrastructure in infill and greenfield areas?	High	The assessment provides a clear distinction between infill and greenfield infrastructure enabled capacity (section 4.1.8, p.50-91, HBA).
<b>Feasible Capacity</b>		
Does the assessment provide information about the methodology and assumptions?	High	A detailed overview of the model and data is provided. This is found in Section 4.1.4, p.46, HBA. A random sample of model outputs would ideally be provided. This would ideally include address, costs and revenues. Local property developers, quantity surveyors and valuers may be requested to comment on the model outputs.

Has summary of input data been included in the HBA report?	Medium	The assessment provides a summary of land values and sales prices used in the modelling process but does not disclose the construction cost (Appendix 8, p.178, HBA).
Is input data from reliable sources and verified to reflect the current market conditions.	Medium	The modelling incorporates the data from reliable sources. The data used is from 2020. Hence, a bit outdated and as such doesn't reflect the current market conditions.
Does the assessment quantify capacity for short, medium and long term?	High	The assessment provides a breakdown of feasible capacity in the short, medium and long run. It is noted in section 4.1.8 p.50-91, HBA.
Does the assessment identify the feasible capacity by infill and greenfield areas?	High	The assessment provides the breakdown of feasible capacity for both infill and greenfield areas (section 4.1.8 p.50-91, HBA).
Does the assessment identify the feasible capacity by dwelling type, size, location and price?	Low	The assessment provides feasible capacity disaggregated by dwelling price and location, but fails to provide capacity by dwelling type and size. Capacity by locations and price assessed is noted in section 5, tables 5-1 to 5-30 p. 98-136, HBA.
<b>Reasonably Expected to be Realised</b>		
Does the assessment provide information about the methodology and assumptions?	High	The assessment undertakes a suitable methodology to assess the reasonably expected to be realised capacity in both infill and greenfield areas. Detailed methodology can be found in section 4.1.5 on pages 47-48, HBA.
Does the assessment provide information about how much of the provided capacity is realisable in infill and greenfield areas?	High	The assessment provides reasonably expected to be realised capacity for greenfield and infill locations (section 5, tables 5-1 to 5-30 p. 98-136, HBA).
Does the assessment determine capacity by type, size, price and location?	Medium	The assessment does not provide reasonably expected to be realised capacity disaggregated by dwelling type or size. Capacity by dwelling price is assessed (section 5, tables 5-1 to 5-30 p. 98-136, HBA).
Is there a clear conclusion on whether realisable capacity for housing is sufficient?	High	The assessment provides clear conclusion about the sufficiency of realisable capacity. Detailed information on the sufficiency of capacity can be found in section 5, HBA.
Does the assessment analyse the contributing factors to any shortfall in sufficiency?	High	The assessment does provide factors contributing to shortfall in capacity. Detailed information on the sufficiency of capacity can be found in section 5, HBA.

Source: Urban Economics

Table 4 Māori and other community groups

The assessment considers the demands of Māori and other community groups

Indicator	Score	Comments
Does the assessment consider the demands of Māori?	Medium	<p>The HBA housing demand projections includes disaggregation by ethnicity group including Māori.</p> <p>The HBA cites but does not describe aspects of Māori housing demand such as papakāinga housing, development trends on Māori land or identify the impediments on living on or developing Māori land.</p> <p>The HBA needs to ensure that their analysis of demand accounts for:</p> <ul style="list-style-type: none"> <li>(i) the demand of Māori, in terms of type, price, and location, of different households; and</li> <li>(ii) Māori traditions and norms.</li> </ul> <p>We do not see how the current assessment of demand accounts for the features of Māori demand.</p>

Does the assessment consider the demands of households of different income groups?	High	The HBA, assesses demand for housing type and home ownership for different ethnicity groups comparing current and long-term demand.
Does the assessment consider the demands of households of different household compositions?	High	The HBA, assesses demand for different household composition and income bands comparing current and long-term demand.

Source: Principal Economics

Table 5 Price efficiency indicators

The assessment explicitly uses market and price efficiency indicators

Indicator	Score	Comments
Does the assessment include consideration of price efficiency indicators as a package and an analysis of what these suggest about the sufficiency of supply and location of development capacity?	Medium	The assessment describes all the price efficiency indicators, but the HBA argues that many of the price signals do not provide useful information. This is contrary to the guidelines provided for HBA. For example, the HBA suggest that the differential in land prices on either side of the rural-urban boundary provided in the MHUD Dashboard does not provide useful information on the role of planning constraints.

Source: Principal Economics

Table 6 Planning, affordability and competitiveness

Impact of planning and infrastructure on affordability and competitiveness

Indicator	Score	Comments
Does the HBA provide an assessment of the impact of infrastructure on affordability and competitiveness	High	The HBA provides a discussion around the impact of planning and infrastructure. This is covered most comprehensively in discussions with developers. In the development survey, respondents identify infrastructure as necessary for enabled development to occur. Furthermore, that infrastructure provision needed to align with growth in demand by location.
Does the HBA use a robust affordability assessment framework to assess the impact of planning and infrastructure?	High	The HBA uses inputs from the urban capacity modelling and household incomes to determine the impacts of affordability from planning constraints. This is undertaken by assessing the proportion of dwellings that households at each income levels can afford over the HBA planning period.  The HBA concludes that adverse planning effects may have some impact on affordability within the local market, alongside other large impacts from non-planning factors.

Source: Principal Economics

Table 7 Communication

Indicator	Score	Comments
Clarity	Medium	<p>The HBA could improve by clarifying the assumptions, and justifications. We had to look at many sources for collecting the relevant information. For example, the assumptions around population projections are clarified on the WISE’s supporting documents – available <a href="#">here</a>. A few assumptions that need to be clarified and justified are as follows:</p> <ul style="list-style-type: none"> <li>the household income distribution of each age group will remain the same,</li> <li>the assumption around the future dwelling type,</li> <li>the assumptions around the recovery path for COVID-19 impacts on migration,</li> <li>the assumptions of the affordability analysis and how they may affect the findings from the calculations.</li> </ul>
Narrative	High	The HBA provided a good narrative for this assessment.
Usefulness to decision-makers	High	The information provided by HBA are useful for decision-makers.

Source: Principal Economics

Table 8 Process

Indicator	Score	Comments
Agreement between the relevant councils on the geographic area of focus for the assessment	High	The HBA assesses the Hamilton, Waikato and Waipa territorial authority areas. The definition of the areas are clarified.
Has local expertise sought and used? Have councils engaged with the development sector, providers of infrastructure, and others with important information?	High	The HBA, includes a survey of developers with focusing on questions relating to barriers to development. Views expressed in the survey align with the reporting in the HBA.
Transparency	High	The HBA provides a transparent methodology, within the potential IP limits.
Does the HBA assess the impact of different regulator and non-regulator options for urban development and their contribution to well-functioning urban environments?	Medium	<p>The HBA assesses most of the impacts of regulator and non-regulator options well. The aspects of a well-functioning urban environment for local authorities to consider under the UPS-UD have been assessed.</p> <p>Where the assessment falls short is in the assessment of Māori housing demand. The assessment comprehensively covers projected housing demand by ethnic groups including Māori. However, we find that it has not described aspects of Māori housing demand such as demand for pāpakainga, development trends on Māori land or barriers to using traditional housing options.</p>

Source: Principal Economics