PROPERTY ECONOMICS

WARKWORTH RESIDENTIAL DEVELOPMENT FAST-TRACK ECONOMIC IMPACT ASSESSMENT

Client: Warkworth RV Limited

Project No: 52287

Date: November 2025

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SCHEDULE

Code	Date	Information / Comments	Project Leader
52287.23	November 2025	Report	s 9(2)(a)

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1. INTRODUCTION

Property Economics has been commissioned by Warkworth RV Limited to evaluate the economic impacts associated with the proposed Warkworth residential development, which comprises a new residential and retirement village development on Matakana Road just north of Warkworth (the **Project**).

Project Description

This Project involves the construction of around 348 dwellings across a range of lot sizes and a retirement village which consists of 198 villa residences, a care centre, club house and associated amenities, across a 54ha site. The Project also includes:

- Roading, pedestrian and cycling infrastructure;
- Three waters infrastructure associated with the residential development;
- Enabling works such as earthworks, and retaining walls;
- Water discharges, water take and stormwater discharges.

The Project is located on the urban edge of Warkworth and provides a natural extension to the existing Warkworth township. The design of the Project incorporating residential housing close to the township, a retirement village, and then large-lot residential as it transitions away from Warkworth appropriately reflects the interface between rural and residential land uses.

The retirement village provides much needed senior living in the north of Auckland, with a purpose built environment including care facilities, a clubhouse for recreational uses and communal gardens and open spaces.

The Project includes cycle and pedestrian connections which have been carefully designed to provide connectivity through the site, with the Warkworth town centre and also to provide part of the proposed Matakana Coast Trail cycleway. This cycleway is proposed by the Rodney Greenways Strategy and the Matakana Coast Trail Trust as a network of trails between Puhoi and Pakiri and then on to Mangawhai. The proposed trail network represents significant social

and environmental amenity for current and future generations and will form part of the region's trail network assets.

Considerations under the Fast-track Approvals Act

This Economic Impact Assessment (**EIA**) provides an economic assessment in terms of the Fast-Track Approvals Act (2024) (**the FTAA**) based around economic injection, employment, and scale of economic impacts / benefits for the regional economy.

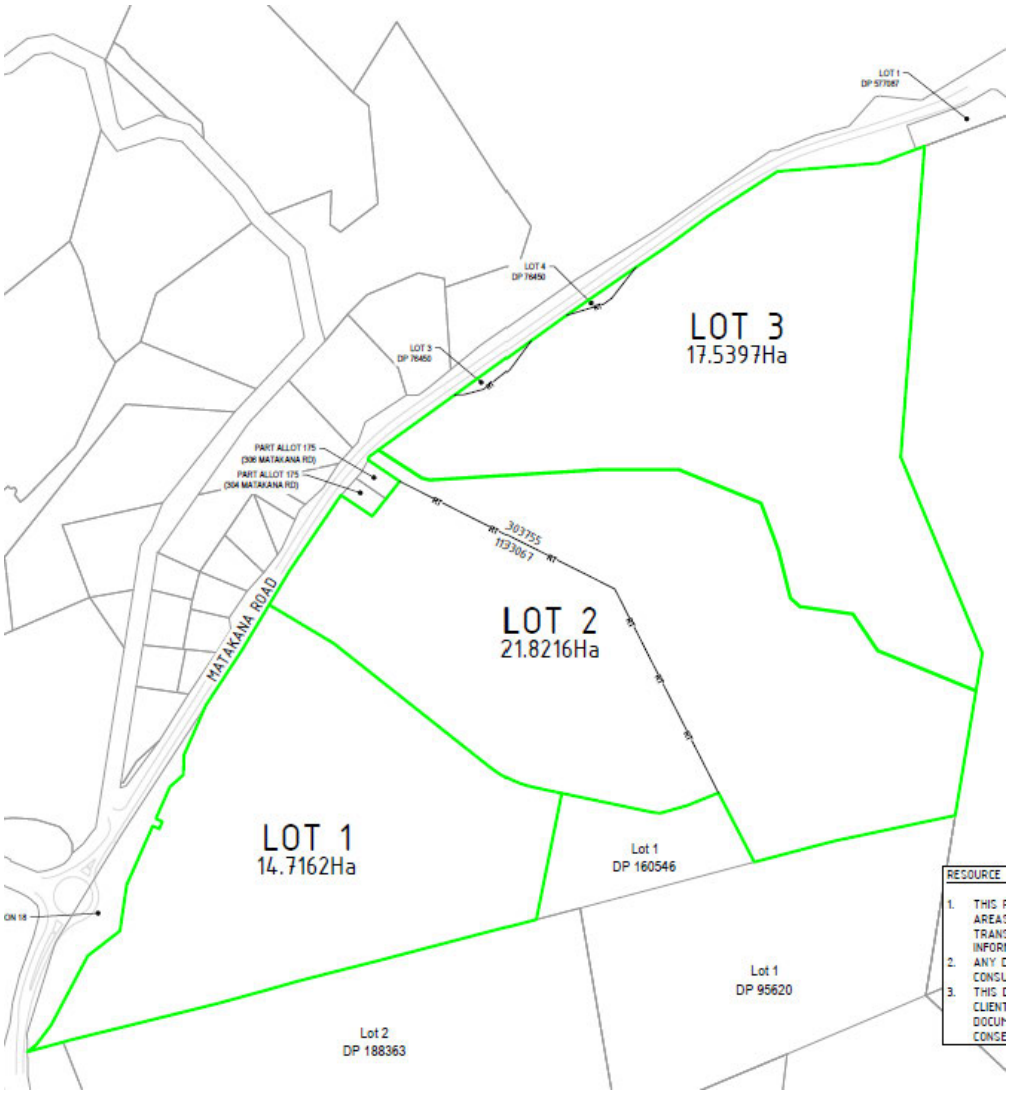
Provisions of the FTAA that are directly relevant to this assessment include Section 3 which states that "*the purpose of this Act is to facilitate the delivery of infrastructure and development projects with significant regional or national benefits*" and Section 22 of the FTAA which sets out the following criteria for assessing whether the project is an infrastructure or development project that would have significant regional or national benefits and therefore the referral application should be accepted:

- Whether the proposal "*will increase the supply of housing, address housing needs, or contribute to a well-functioning urban environment (within the meaning of policy 1 of the National Policy Statement on Urban Development 2020*)" (Section 22(2)(a)(iii)); and
- Whether the proposal "*will deliver significant economic benefits*" (Section 22 (2)(a)(iv)).

In short, the FTAA supports development proposals to expedite the consent process where the proposed development results in significant regional or national benefits, the efficient operation of the consenting process and contributes to a well-functioning urban environment (as per Policy 1 of the National Policy Statement on Urban Development (**NPS-UD**)).

Figure 1 following provides an outline of the scheme plan of the proposed development.

FIGURE 1: PROPOSED SITE SCHEME PLAN



Source: Chesters

2. EXECUTIVE SUMMARY

The Project seeks to construct comprehensively designed residential development which includes a retirement village comprising approximately 198 villas, a care centre and club house, along with approximately 348 dwellings located to the north and south of the retirement village. The proposed development spans an area of circa 54ha on Matakana Road, in Warkworth.

The total economic impact on business activity within Auckland Region as a result of the proposed development is summarised in the following table.

Snapshot of Key Economic Benefits:

Estimated Quantitative Economic Impacts on Auckland Regional Economy:	
Total direct capital expenditure (excluding land)	**$631.4m**
Total NPV[1] at 8% over an 8-year development period	**$520.1m**
Total NPV at 2%[2] over an 8-year development period	**$689.1m**
FTE years[3] during the peak development year	**819 FTE years**
Total FTE years over the 8-year development period	**4,507 FTE years**
Total direct employment over the development period	**1,711 FTE years**
Total indirect and induced employment over development period	**2,796 FTE years**

In addition to these quantifiable regional contributions, the Project is likely to generate a wide range of (non-monetised) qualitative economic benefits for the wider regional market and communities, extending well beyond the Warkworth local market, including:

- Increased senior housing supply and residential land capacity
- Improved residential care facility supply
- Freeing up existing housing stock for younger families
- Increased and diversified choice of housing location and price point
- Increased economic activity and employment
- Will contribute to meeting demand for retirement village living

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[1] Net Present Value

[2] Sensitivity analysis applying 2% NPV as per Treasury guidelines for commercial development

[3] NB These are all jobs created through the direct construction phase including indirect and induced employment through all business sectors (not solely construction jobs) and relate to job years rather than one employee.

- Impetus for greater levels of local and regional growth
- Increased amenity

The Project provides clear economic benefits through the generation of significant direct expenditure and employment opportunities both during construction and permanent jobs related to the retirement village. The Project enables residential development to respond to growing demands and facilitate future growth in the Warkworth area, as well as catering for the region's aging population. In light of these economic benefits, Property Economics considers that advancing the proposed development would represent a significant benefit to the Auckland regional economy and senior community.

Our assessment supports the proposed development from an economic perspective in the context of the RMA and FTAA.

3. GENERAL INFORMATION

3.1. STATEMENT OF EXPERIENCE

s 9(2)(a) - I am an economic consultant and Director of Property Economics Limited, based in Auckland. My qualifications include Bachelor of Arts (History / Economics), Masters in Commerce, and Masters in Planning Practice from the University of Auckland.

I have 25 years' experience advising local and regional councils, central government agencies, and private developers throughout New Zealand in respect of a wide range of property issues, including economic impact assessments, commercial and residential market assessments, economic cost benefit analyses and forecasting market growth and land requirements across all property sectors.

I have extensive experience and frequently commissioned to provide Environment Court expert evidence. I have undertaken numerous Economic Impact Assessments for fast-track applications (under the Covid-19 Recovery Fast Track Consenting Act 2020 and the FTAA).

s 9(2)(a) – I am founder and Managing Director of Property Economics Limited with 30 years' experience undertaking strategic property market analyses for major commercial and government clients. My qualifications include Bachelor of Arts (Geography) and Bachelor of Planning from the University of Auckland.

My areas of specialisation include economic profiling of markets, property sector analysis, market demand / supply assessments, economic impact assessments, capacity modelling, development feasibility assessments, business land assessments, and cost-benefit analysis.

My comprehensive knowledge of property market drivers allows me to deliver research that ensure recommendations have 'real world' practicality and can be successfully implemented.

I have extensive experience and frequently commissioned to provide expert evidence in the Environment Court. I have also been involved in undertaking economic assessments for dozens of Fast Track applications.

3.2. CODE OF CONDUCT

Although this Application is not before the Environment Court, we have approached this EIA on the basis that it is prepared in the same way as it would be for expert evidence in Environment Court proceedings.

We therefore confirm that we have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 and confirm that we have complied with it in preparing this EIA. We confirm that the issues addressed in this EIA are within our area of expertise, except where we have indicated that we are relying on others' opinions. We have not

omitted material facts known to us that might alter or detract from the opinions expressed in this EIA.

1.1. INFORMATION & DATA SOURCES

Information has been obtained from a variety of reliable data sources and publications available to Property Economics, including:

- Input / Output Tables - Stats NZ
- Business Frame Data – Stats NZ
- Proposed Development Costings – Warkworth RV Limited
- Scheme Plan - Chesters

1.2. GLOSSARY OF TERMS

Below is a list of terms relevant to this economic impact assessment. Note that the definitions of some terms may differ from those provided in the relevant statutory definitions and are intended solely for the purposes of this economic analysis. This does not affect the economic analysis conducted in this report or our economic position.

TERM	DEFINITION
ANZSIC	Australia New Zealand Standard Industrial Classification 2006 - A standard method used to classify businesses and organisations based on their primary economic activity. It provides a framework for analysing and comparing economic data across industries in Australia and New Zealand. ANZSIC is widely used by government agencies, researchers, and businesses for statistical, policy, and planning purposes.
CAPEX	capital expenditure.
Development contributions	fees that developers pay to territorial authorities for the provision of infrastructure and upgrades required as a consequence of development, which may include water supply, sewerage connections, roads and community infrastructure.
Direct economic impacts	derived from the actual spending / expenses incurred through the construction of the anticipated development.
Economic benefits	refer to the positive outcomes that enhance the well-being of individuals, businesses, and communities, typically arising from an activity, development, or policy. These benefits may be expressed in financial or non-financial terms.

	In the context of urban development, economic benefits reflect the extent to which a proposal contributes to local and regional prosperity, market efficiency, and the effective alignment of supply with demand.
Economic costs	the value of what is given up when choosing one economic activity over another. Economic costs also include opportunity costs, which are the value of the next best alternative that is forgone.
Employment multipliers	the level of indirect and induced employment activity generated through the expenditure on and off site.
FTE years	these are all jobs created through the direct construction phase and ongoing operation of the development including indirect and induced employment through all business sectors (not solely construction jobs) and relate to job years rather than one employee.
Indirect economic impacts	the increased spending brought about by those firms / households and their employees / occupants, who supply the development.
Induced economic impacts	measured in terms of the additional income that will be spent in the area due to increased business activity.
GDP	gross domestic product.
Net Present Value (NPV)	the difference between the present value of a project's future cash inflows and outflows, discounted to reflect the time value of money. It indicates the project's economic benefit in today's terms. The NPV of future cash inflows and / or cash outflows which in this report has been calculated with reference to an 8% discount rate, consistent with the default rate for commercial proposals set by the Treasury.
Transaction costs	costs that arise as part of engaging in an economic trade. This can include compliance costs, planning costs, variation costs, etc.
Well-functioning urban environment	as defined in Policy 1 of the NPS-UD: Planning decisions contribute to well-functioning urban environments, which are urban environments that, as a minimum: (a) have or enable a variety of homes that: (i) meet the needs, in terms of type, price, and location, of different households; (ii) enable Māori to express their cultural traditions and norms; and. (b) have or enable a variety of sites that are suitable for different business sectors in terms of location and site size; and (c) have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport; and (d) support, and limit as much as possible adverse impacts on, the competitive operation of land and development markets; and (e) support reductions in greenhouse gas emissions; (f) and are resilient to the likely current and future effects of climate change.

4. ECONOMIC CONTEXT

In assessing the potential economic impacts, it is important to first establish the context in which they will be assessed. For the purposes of this assessment the three important parameters are:

1) The geospatial extent of the economic impact. While facilitation of additional residential development and spend is likely to have a national economic impact, the majority of impacts are likely to be retained within the Auckland Region. As identified, for the purposes of this assessment, the extent of economic impacts is focussed on the retention[4] of economic activity within this area.

2) The economic impacts are those resulting from the retirement village and residential development over the proposed8-year development period.

3) Regarding statutory considerations, the RMA provides context in terms of the utilisation of resources and the resulting impact on their price and provision. It calls for the "*efficient use and development of natural and physical resources*" (Part2 section 7 (b) RMA),

   This can be considered from the perspective of economic efficiency which can be defined as "*the effectiveness of resource allocation in the economy as a whole such that outputs of goods and services fully reflect consumer preferences for these goods and services as well as individual goods and services being produced at minimum cost through appropriate mixes of factor inputs*"[5]..

The proposed Project is likely to have economic impacts that are felt beyond the specific benefits within the region.

Additionally, as addressed in the various environmental assessment reports prepared in support of the application for referral of the Project into the FTAA, there are likely to be other, non-economic effects that may result in further economic impacts, such as land value changes (e.g. improved accessibility can increase associated property values). These other potential further economic impacts are excluded to avoid double counting of effects. For the most part, these other, non-economic effects, e.g., environmental effects, have not been addressed in this report.

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[4] *In this context retention relates to the level of direct spend that is attributable to the Region. This is based on a large number of factors e.g. the origin of machines, businesses that service this development.*

[5] *Pass, Christopher and Lowes, Bryan, 1993, Collins Dictionary of Economics (2nd edition), Harper Collins, Page 148*

5. TOTAL ECONOMIC ACTIVITY

5.1. PROJECT'S INJECTION INTO THE TOTAL AUCKLAND ECONOMIC ACTIVITY

Table 1 following outlines the resulting impacts on the Auckland regional economy as a result of the development.

TABLE 1: TOTAL GROSS AUCKLAND REGIONAL ECONOMIC INJECTION OF PROJECT (FAST TRACK)

	2026	2027	2028	2029	2030	2031	2032	2033	Total
Direct Expenditure ($m)									
Land									
Demolition	$0.3								$0.3
Earthworks / Civil Works	$14.3	$32.5	$23.7	$3.0	$1.3	$1.0			$75.8
Consultants	$8.7	$10.7	$7.3	$6.5	$3.1	$1.9	$0.3		$38.5
Other	$1.1	$3.4	$6.7	$4.5	$3.4	$1.1	$2.2		$22.4
Levies		$1.2	$2.4	$2.4	$1.8	$1.8	$1.2	$1.2	$12.0
Total Development Costs (excl. land)	$24.4	$47.8	$40.1	$16.4	$9.6	$5.8	$3.7	$1.2	$148.9
Total Construction		$46.7	$70.0	$70.0	$93.4	$93.4	$70.0	$23.3	*$466.9*
Total Construction and Development Costs (excl. Land)	$24.4	$94.4	$110.1	$86.4	$102.9	$99.2	$73.8	$24.5	$615.8
Increased Local Spend*			$0.5	$1.4	$1.9	$3.1	$3.9	$4.8	$14.8
Total Direct Expenditure (excl. land)	**$24.4**	**$94.4**	**$110.6**	**$87.8**	**$104.8**	**$102.3**	**$77.7**	**$29.3**	**$631.4**
Level 2 Multiplier Impacts									
Total Auckland Output NPV (48 sector multipliers)**	**$23.7**	**$85.8**	**$94.5**	**$72.3**	**$82.4**	**$77.3**	**$61.0**	**$23.1**	**$520.1**
Employment (FTE Years)									
Development Employment	191	374	314	128	75	46	29	9	
Construction Employment		323	484	473	561	548	431	161	
Other Employment	14	47	21	26	78	76	69	29	
Total Employment (FTE years)	**205**	**743**	**819**	**627**	**714**	**670**	**529**	**200**	**4,507**

Source: Property Economics

** Increased Local Spend by residents, employees, construction workers and additional local business spend through the different stages of development.*
***The impacts on Auckland as a result of direct, indirect and induced activities.*

Two key values are represented in Table 1. The Project will generate a direct expenditure of approximately $631m which represents the total cost of the development (excluding land). The Project will result in approximately $520m of total value added for Auckland Region over the life of the development timeframe of 8 years.

The Project will also contribute around 819 jobs during the peak construction year within Auckland, with a total number of approximately FTE years at 4,507 over the development period.

Table 1 demonstrates how the direct expenditure and employment (FTE years) are broken down between different sectors. An explanation of how the outputs in Table 1 were calculated is provided in Appendix 2.

5.2. ASSUMPTIONS

The following assumptions have been applied in this impact analysis in order to assess the level of economic injection into the overall economy at this time. This has some (limited) impact on the distributional effects of the costs and benefits but can be quickly adjusted to accommodate more specific construction and on-going costs and injections.

1. For the purposes of this Economic Impact Assessment, it has been assumed that the construction costs will fall within the definition of the following categories (based on a standard 'special' commercial ratio): 'residential construction', 'non-residential construction', 'non-building construction', 'other construction services.'.

2. Financial or loan costs on capital primarily fall outside of the local catchment and impact the national economy.

3. The origin of labour has been assessed based on regional labour movements furnished by Stats NZ based on 2018 data. However, employment data has been updated as per the Stats NZ Business Frame data[6] to March 2024.

4. This report deals with the economic impact of proposed development on Auckland. These are specifically the direct impacts related to the construction of the proposed development.

5. The economic activity generated is based on the development's gross activity and does not consider this redirecting growth opportunities from elsewhere in the catchment.

6. For the purposes of this report an 8% discount rate has been applied, consistent with the default rate for commercial proposals set by the Treasury[7]..

7. Labour movements are based on average retention rates rather than specific company locations.

8. The proportion of materials and labour internalised in direct benefits to Auckland are based on standardised labour movements as well as employment and production composition within the region. The amount of each 'flow-on' dollar retained in Auckland are based on the movement of resources (including labour) between other districts and regions.

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[6] *Business Frame Data – provides Statistics NZ measure of employment in an area by ANZSIC sector.*

[7] *https://www.treasury.govt.nz/information-and-services/public-sector-leadership/guidance/reporting-financial/discount-rates*

This economic impact estimates the total additional gross economic output[8] into the Auckland regional economy that would be facilitated by the Project. The initial specifications and details have been provided by the applicant and represent the development's configuration and costings at this point in time. This EIA is not site specific but specific to the development and construction of the Project, i.e. the estimated economic impacts are not tied to the subject land, and the related development is not dependent on any particular location.

The assessment has not endeavoured to identify the extent to which particular parts of the Auckland Region will benefit economically. It assesses the likely economic impacts upon aggregate Auckland business activity given the composition of the development proposed.

The economic impacts likely to be experienced as a result of the Project are broken down by the development phase which includes the construction costs (CAPEX[9]) of the facilitated activities and the proportion of those costs that are retained within the Region.

The direct economic impacts are derived from the actual spending / expenses incurred through the development and construction period of the proposed development.

Indirect economic impacts are the increased spending brought about by those firms / households and their employees / occupants, who supply the development.

Induced economic benefits are measured in terms of the additional income that will be spent in the area due to increased business activity.

[8] *For example, this has not taken into account the short-term loss of operational employment currently on site*

[9] *CAPEX – Capital Expenditure*

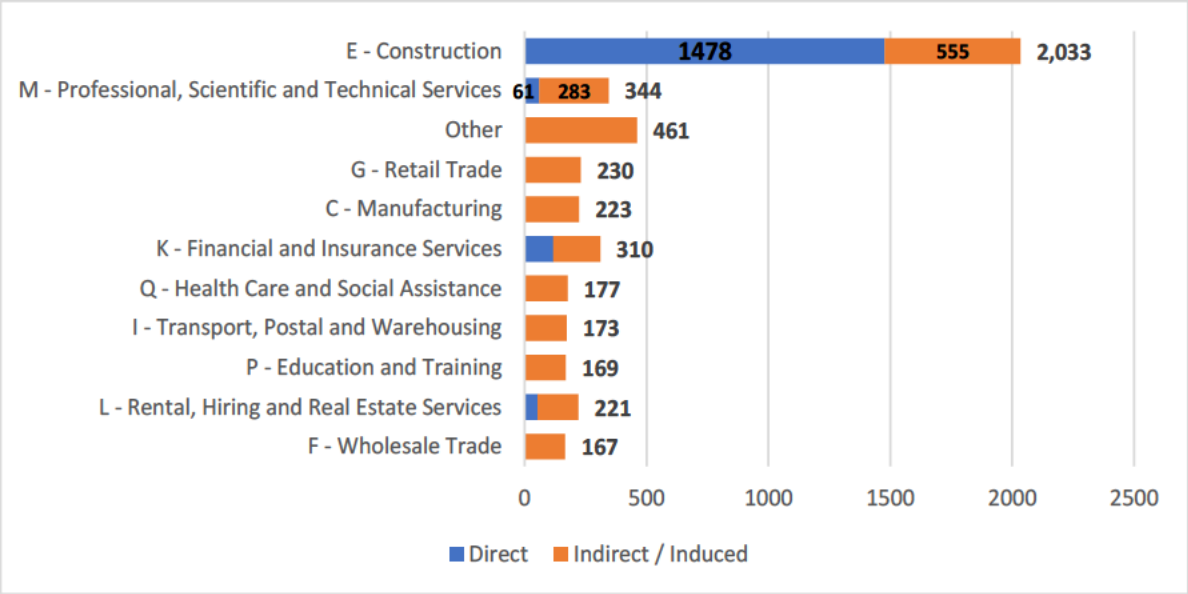
5.3. TOTAL AUCKLAND DIRECT AND INDIRECT EMPLOYMENT

Figure 2 below shows how Direct and Indirect (including induced) FTE employment from the Project is anticipated to be disaggregated across sectors over the identified period. It illustrates the significant direct impact on the Construction sector (as well as Construction Services), and the impact of the Project across a range of sectors through the generation of indirect employment.

The figure below illustrates direct employment generated by the Project will measure approximately 1,711 FTE years. The Project will also generate around 2,796 FTE years of indirect and induced activity.

This scale of employment generation is significant in the regional context. For comparison, the regional unemployment rate increased from 3.5% in 2022 to 4.2% in 2024, equating to around 4,670 additional people unemployed per annum over the last two years. Against this context, the Project will make a direct contribution to supporting regional employment levels.

FIGURE 2: AUCKLAND EMPLOYMENT GENERATION BY SECTOR (DIRECT, INDIRECT AND INDUCED)



Source: Property Economics

5.4. SENSITIVITY ANALYSIS

The Treasury's most recent review (February 2025) sets discount rates for commercial proposals at 8% (applied in the earlier analysis), with a mandatory sensitivity test at 2%[10]. In this section, sensitivity testing is undertaken using the 2% discount rate to quantify the scale of the Project's economic contribution to Auckland's regional economy under this scenario.

The results indicate that, when applying the Treasury's mandatory 2% discount rate, the proposed development at the subject Warkworth site is estimated to generate an estimated $689.1m in total business activity across the Auckland Region over the full development timeframe.

TABLE 2: WARKWORTH RV DEVELOPMENT SENSITIVITY ANALYSIS (2% NPV)

Discount Rate	Total Auckland Region Output NPV ($m)								
	2026	2027	2028	2029	2030	2031	2032	2033	Total
2%	$25.2	$97.3	$114.2	$93.1	$113.0	$113.0	$95.0	$38.2	**$689.1**

Source: Property Economics

[10] *Source: https://www.treasury.govt.nz/information-and-services/public-sector-leadership/guidance/reporting-financial/discount-rates*

6. OTHER QUALITATIVE ECONOMIC COSTS AND BENEFITS

In addition to the previously quantified economic injection, the Project would create a variety of potential (non-monetised) economic benefits. The following analysis outlines the key economic benefits of the proposed development within the framework of the RMA, the NPS-UD, and the FTAA Section 22(2)(iii) and (iv).

Economic Benefits

- Increased senior housing supply and residential land capacity: The Project will supply the market with approximately 198 additional retirement village villas and approximately 348 standalone dwellings. This provides not only the ability for the area to improve its responsiveness to growing demands but will in itself facilitate further growth within the area as a result of the increase in overall competitiveness and market efficiency. In other words, the Project will not just respond to existing demand, it has the potential to catalyst additional economic activity by improving how the local housing market functions.

  Specifically, the Project will provide certainty to the market regarding both the market's ability to contribute to meeting future senior housing demand pressures and its provision through an efficient form of development on a site that is well sized and located.

- Increased aged care facilities: The Project's proposed care facility will directly contribute to accommodating this anticipated future need and help reduce pressure on the region's aged care facilities over the short to medium term.

- Increased and diversified choice of housing location: The proposed development will also provide residents additional choices in their living environment in respect of location and potentially impact the overall price point resulting from supply, within the local market and the wider region.

  It will provide for housing products within a functional living environment. The opportunity for an increase in the level of competitive residential land is likely to be coupled with an increase in the relative attractiveness of the area with wider markets.

- Increased economic activity and local employment: The proposed development would generate considerable economic stimulus through direct construction activity and supporting services. This includes employment opportunities in the building industry, engineering, landscaping, materials supply, and project management sectors. The construction-led growth would extend over several years, supporting regional employment levels and contributing to GDP through multiplier effects across the economy.

In addition, the proposed full-time care facility will create additional employment opportunities across various roles, including healthcare professionals, support staff, and facility management, etc., during both the development and ongoing operational phases. This will not only support local job creation but also enhance the overall functionality of the facility, improve the liveability of the senior living environment, and strengthen the long-term viability of the development.

- Enhanced access to existing and planned infrastructure networks: Due to the site's locational attributes, the proposed development and its future community will benefit from convenient connectivity to both the current and planned upgraded roading and public transport networks in the area. Compared with more remote greenfield locations, this accessibility will reduce travel costs and improve overall community and market efficiency.

- Impetus for greater levels of local growth: Growth from large-scale residential developments can often act as a catalyst that stimulates broader economic and urban development within an area. The proposed development has the potential to unlock further opportunities for additional housing, commercial activities, and complementary land uses.

  As the local population increases, so too does the demand for goods, services, and employment, providing significant impetus for both local and regional economic growth. Over time, this additional growth would contribute to the development of a more self-sustaining and vibrant urban community.

- Increased amenity: Large residential developers are able to provide high amenity, comprehensively planned environments with purpose built, and targeted amenity values such as parks and community facilities.

  This is particularly true for large retirement village operators as they can provide dedicated facilities for aged care and wellbeing for target demographics (aged population). These come purpose built with highly specialised improvements to appeal to their clientele and benefit that community.

We have not endeavoured to quantify in dollar terms potential benefits arising from the proposal or to undertake a full assessment of the economic costs, given that this is a referral application. A more detailed analysis will be undertaken at the substantive application stage following referral to the Panel.

Based on our experience and our reading of the application, however, we consider that the economic benefits of the proposal would comfortably outweigh any potential disbenefits.

Considering the (non-monetised) economic benefits analysis outlined above as a whole (including the quantitative economic injection into the regional economy and employment

benefits), Property Economics considers that advancing the proposed development would contribute significantly to the economic benefits for the regional economy and senior community.

This approach would positively contribute to increasing the supply of housing and addressing housing needs and [the facilitation of a well-functioning urban environment] within the Auckland Region, giving effect to the NPS-UD Policies and meet the purpose of the FTAA.

APPENDIX 1. EXPLANATIONS OF EIA MODELLING PROCESS

The EIA assesses the potential economic activity generated within the Auckland Region specifically attributable to the Project through spending on the general civil works and residential development. This includes construction costs, which have been valued for the overall development.

The impact of this injection on the initial business cycle has been calculated. This 'construction multiplier' was based on the national input-output tables produced by Stats NZ (based on 48 sectors), which were then assessed at a district level based on Auckland economic activity, composition and productivities.

This estimates the 'leakage' from the regional economy (within specified sectors), and therefore the overall regional production (within a given business cycle) for each $1 injected.

This was performed for the general and commercial construction sectors. These multipliers are based on 'net' flows by broad sector type and are therefore approximations.

Total output impacts to the Auckland catchment for the proposed developments include:

- Direct Construction Cost x 'Construction Multiplier' +
- Direct Development Cost x 'Development Multiplier' +
- Direct Increased Commercial Spending x 'Commercial Multiplier' +
- Indirect Business Spend x 'Commercial Multiplier' +
- Induced Retail Spending x 'Retail Multiplier'

Each identified multiplier relates simply to the economic sector from which the activity is generated.

This capital expenditure then is assessed through the process indicated at the beginning of this section which includes calculating the amount of direct spend that is retained within the Auckland Region.

Then utilising the appropriate economic multipliers for each of the affected sectors the economic model produces both indirect outputs and induced outputs. Given that the development will take place over a proposed period of 8 years, development beyond the first year is discounted to provide a Net Present Value (NPV).

APPENDIX 2. EXPLANATIONS OF EIA MODELLING OUTCOMES

By way of explanation of the items listed in Table 1:

- The reference to "*Levies*" is referring to external land and building costs such as Council costs.
- The reference to "*Development Costs*" includes costs associated with the development of the land, earthworks, etc. Note these costs are separated out from Construction costs due to the high level of capital (machinery) to labour ratio.
- The reference to "*Construction Costs* "includes built form costs (i.e., cost of the physical built structure (the buildings).
- The Direct Expenditure line includes all expenditure on the Project, both in Auckland and externally to the region.

The "*Level 2 Multiplier Effects*" section identifies the proportion of the direct expenditure that is experienced in the Auckland region only. This incorporates consideration of the economic multipliers described in the following section.

This EIA evaluates the total economic effects of the specific project on the Auckland regional economy. Multipliers, a key component of EIA, quantify how initial changes in spending lead to larger, ripple effects throughout the Auckland economy[11]. These effects include direct, indirect, and induced impacts, reflecting changes in output, employment, income, and other economic variables.

Aggregating Impacts:

The following steps form the basis for the value and employment multipliers to quantify the number of FTE years generated by the project.

Step 1: Allocate total project expenditure by ANZSIC category.

Step 2: Apportion the extent of each expenditure category that is likely to be retain within the Region. This is based on business and employment composition, business size, capital

[11] *Multipliers are coefficients that translate direct changes in economic activity into the total economic impact. For example, a job multiplier shows how many jobs are created in total (directly, indirectly, and induced) for each new job created directly. Similarly, an output multiplier indicates how much total output increases for each dollar increase in output in a specific industry. Relevant key multiplier types include Output Multiplier: Measures the total change in economic output resulting from a change in demand for a specific industry; and Employment Multiplier: Measures the total change in employment resulting from a change in employment in a specific industry.*

formation, inflows of GDP (technically GRP), etc. This is direct regional spend and hence smaller than the total generated.

Step 3: Utilising Stats NZ Input / Output tables generate regionally specific Level 1 multipliers (i.e. where each $1 spent goes through the first cycle). These multipliers are specific for each of the 48 sectors and are proportionally combined to produce the development multiplier: earth works, fees, etc (due to these having a materially different labour to capital breakdown) and the construction multiplier- built form.

Step 4: Utilise a similar process to assess the Level 2 multipliers for indirect and induced activities.

Step 5: These three (direct, indirect and induced impacts) are then aggregated and discounted to get the NPV seen in Table 1.