Economic assessment of Plan Change 81

Tasman District Council

October 2026

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Executive summary

Tasman District Council (TDC) commissioned BERL to assess the economic activity and infrastructure investment associated with Plan Change 81 (PC81). The assessment describes the economic impact of the scale and timing of activity that could be supported by PC81.

The modelling considers a development scenario in which PC81 enables approximately 4,102 additional dwellings. This capacity could accommodate an estimated 9,486 additional residents by 2057 and support a wider range of housing and business opportunities. This study provides a basis for assessing the potential scale of development, recognising that the pace and extent of delivery will reflect market demand, feasibility, financing, infrastructure availability, and landowner decisions.

Infrastructure investment associated with PC81

The infrastructure investment is presented through four progressively more focused perspectives, each providing a different lens through which to assess the investment associated with growth. The broadest measure includes all identified district projects, while the most targeted measure focuses on projects linked to PC81 and allocates costs according to the shares attributed to growth and to PC81. These measures provide useful context on the overall infrastructure investment programme and the portion most closely associated with the plan change. The four measures are:

- All identified district infrastructure projects
- The growth-attributed share of all identified projects
- The full cost of projects identified as triggered by PC81
- The prorated growth and PC81 share of projects identified as linked to PC81.

Table 1 PC81 infrastructure costs (real terms, net present value, discounted)

Infrastructure cost measure	2037	2057
Total value of all identified projects, all costs ($m)	1,128	1,890
Total value of projects identified attributed to growth, all costs ($m)	301	418
Total value of projects identified as being triggered by PC81, all costs ($m)	472	501
Total value of projects identified as being triggered by PC81, costs prorated by share attributable to growth ($m)	110	125

Source: BERL

Economic impact of PC81

The assessment quantifies PC81's economic effect and impact through the support of Tasman's housing capacity and the generation of construction and household consumption activity as development occurs.

The results should be considered in light of assumptions about development uptake, household expenditure, construction costs, infrastructure timing, and project attribution. This evidence quantifies the scale of the economic impact of PC81 to assess its economic effects.

Under the modelled development scenario, over 2027–2057, construction and the spending of additional households are together estimated to support $2.9 billion in direct expenditure and $1.3 billion in direct gross domestic product (GDP, expressed as discounted present values.

Table 2 Total expenditure and GDP from activity enabled by PC81, 2027-2057

	Direct expenditure ($b)	Direct GDP ($b)
Consumption	1.6	1.0
Construction	1.3	0.3
Total	2.9	1.3

Source: BERL analysis

The quantified outputs comprise direct expenditure, direct GDP, and annual employment supported by residential construction and household consumption. Across the 2027–2057 assessment period, activity enabled by PC81 is estimated to generate $1.3 billion in cumulative direct GDP on a discounted present-value basis. Household consumption accounts for the largest share, contributing $1.0 billion, while residential construction contributes $0.3 billion.

The estimates are conservative and capture only those impacts that can be readily quantified. The analysis excludes economic activity associated with the 76 hectares of business land enabled by PC81, including the related commercial construction activity, while the infrastructure cost estimates include the investment required to service that land. In addition, the results are reported on a direct GDP basis only.

PC81 impact in the context of the Tasman economy

The total direct GDP household consumption and residential construction cumulative impacts out to 2057, relative to the current annual Tasman economy, are equivalent to approximately 26 percent and eight percent, respectively, of the economy. This equates to 35 percent for the PC81 in total.

Table 3 PC81 impact in the context of the Tasman economy

	Direct GDP ($b)	Percentage of Tasman economy
Consumption	1.0	26
Construction	0.3	8
Total	1.3	35

Source: BERL, totals may not add due to rounding

In 2057, PC81 is estimated to support 436 FTEs and $63 million in annual GDP, equivalent to approximately 1.8 percent of current Tasman employment and 1.7 percent of current GDP.

Table 4 GDP and FTE impact in 2057

	Current	Estimated impact from PC81 in 2057	Percentage of current
FTE	24,044	436	1.8
GDP ($m)	3,638	63	1.7

Source: BERL

The scale of infrastructure investment associated with PC81 varies depending on how costs are defined. Table 5 summarises the infrastructure investment impact on the Tasman economy. Depending on the measure, the infrastructure investment impact ranges from 2.2 percent to 0.1 percent of the Tasman economy (on annual average basis over a 30-year period).

Table 5 Infrastructure investment impact on the Tasman economy

Percentage of Tasman economy, annual average (percentage)	10-year	30-year
Total value of all identified projects, all costs	3.4	2.2
Total value of projects identified attributed to growth, all costs	0.9	0.5
Total value of projects identified as being triggered by PC81, all costs	1.4	0.5
Total value of projects identified as being triggered by PC81, costs prorated by share attributable to growth	0.3	0.1

Source: BERL, MRCagney

Infrastructure cost per dwelling provides a useful sense check on the scale of growth-related costs relative to the number of additional dwellings enabled through PC81. Over the full 30-year period, the cost is estimated at $34,300 infrastructure investment per dwelling. This estimated PC81 long-run average infrastructure cost of approximately $34,300 per dwelling sits within comparable development contributions for Nelson City Council.

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1 Introduction

1.1 Purpose

Tasman District Council requires an economic impact assessment (EIA) of Plan Change 81 (PC81) to assist in the analysis of the plan change under the Resource Management Act 1991. This analysis estimates the scale and timing of economic activity associated with the PC81 development scenario, and presents the infrastructure investment identified as supporting that growth.

Together, these two components provide both a strategic understanding of the wider economic benefits of intensification and a quantitative assessment of the specific costs and benefits associated with the proposed plan change.

This assessment is not a conventional welfare-based benefit-cost analysis because gross domestic product (GDP) generated by expenditure is not a measure of net social benefit. Rather, its purpose is to quantify the scale of the economic impact to enable an assessment of the economic effects of PC81.

1.2 Scope

BERL has undertaken an economic impact assessment (EIA) associated with the population growth enabled by PC81. The analysis assesses and quantifies the economic benefits of population growth along with the infrastructure costs required to service the anticipated growth.

The assessment identifies and quantifies the additional economic activity, population growth, and housing development enabled by Plan Change 81. It also quantifies the network infrastructure investment required to support that growth.

This provides a structured and proportionate basis to assist with the consideration of the efficiency and effectiveness of Plan Change 81, in support of Council's section 32 evaluation. This includes quantification of some costs, benefits, and employment impacts.

The broader economic case for agglomeration and compact urban growth is generally established in the international literature, which finds that urban growth can generate net benefits where it is supported by appropriate planning, infrastructure provision, and housing supply.

1.3 Approach to economic impact assessment (EIA)

The purpose of this report is to estimate the economic activity associated with the PC81 development scenario and to present the infrastructure costs identified as supporting that growth.

For the section 32 evaluation, the assessment considers the scale and timing of quantified economic activity associated with the PC81 development scenario, alongside the infrastructure investment identified as supporting that growth.

Construction expenditure, consumption expenditure, and associated GDP provide practical measures of the regional activity that could be supported as development proceeds.

The analysis does not establish whether the benefits of PC81 outweigh its costs in a welfare-economic sense. This is because expenditure and GDP are not measures of net social benefit and not all relevant costs, benefits, or counterfactual effects have been monetised. This report quantifies the scale of the economic impact to enable an assessment of the economic effects of PC81.

2 Literature review of urban growth and intensification

2.1 Purpose of the literature review

The purpose of this literature review is to place the economic assessment of PC81 within the wider evidence base related to urban growth and intensification.

The literature generally finds that growth can generate economic benefits where it is planned well, supported by sufficient development capacity, and enabled by timely infrastructure investment.

The literature review examines the evidence for whether the economic benefits of the growth enabled through PC81 are expected to outweigh the infrastructure costs required to support that growth.

Tasman District Council has undertaken the planning work, identified the additional housing and business land capacity enabled by PC81, and identified the infrastructure investment required to service that capacity.

2.2 International literature

International literature finds that urban growth through intensification generally produces net economic benefits (Ahlfeldt et al., 2018). The benefits arise from agglomeration economies, namely higher productivity from firm and worker clustering, improved labour market matching, knowledge spillovers, economies of scale in infrastructure provision, and greater consumer access to jobs and services (Quigley, 2008).

The OECD surveyed more than 300 academic papers that studied the effects of compact urban form, assessing whether higher urban density and more compact urban form generate net economic, social, and environmental benefits (Ahlfeldt et al., 2018). The OECD report examines three dimensions of compact urban form covering economic density (concentration of residents and jobs), mixed land use (proximity of housing, employment, retail, and services), and built-form density (intensity of development and building concentration) (Ahlfeldt et al., 2018).

The OECD finds that 69% of the papers reviewed find positive effects associated with compact urban form (Ahlfeldt et al., 2018). Over 70% of studies find positive effects of economic density (the number of people living or working in an area) (Ahlfeldt et al., 2018). A smaller majority of studies attribute positive effects to mixed land use (58%) and the density of the built environment (56%) (Ahlfeldt et al., 2018).

Table 6 Meta-analysis evidence of urban growth

Studies finding net economic benefits from	Result
Compact urban form	69%
Economic density	>70%
Mixed land use	58%
Built density	56%

Source: OECD

The major benefits of economic density arise from improved productivity and better access to jobs and services (Ahlfeldt et al., 2018). Further benefits are generated through the preservation of urban green space, greater energy efficiency, pollution reduction, and safer urban environments (Ahlfeldt et al., 2018).

The literature also identifies the costs from intensification that require careful planning. These costs include congestion, less access to open space, and negative impacts on biodiversity, traffic flow, health, and well-being (Ahlfeldt et al., 2018). Furthermore, the evidence on job accessibility and pollution reduction is mixed (Ahlfeldt et al., 2018). The key implication is the importance of aligning growth with well-designed infrastructure, open-space provision, and measures that support attractive and healthy urban environments.

Application of those findings to smaller urban areas

The findings from Ahlfeldt et al. (2018) are most directly applicable to large cities, where economic density, labour market depth, and access to services are greatest. For this report, the OECD evidence from Ahlfeldt et al. is best interpreted as supporting the strategic case for well-planned growth.

The underlying mechanisms are also relevant to smaller agglomerations such as Tasman District, however, albeit at a smaller scale. In smaller urban areas, additional density and more compact growth can still improve access to local employment, services, schools, retail, and community infrastructure. It can also support more efficient use of existing and planned networks.

The productivity and accessibility gains in Tasman would reflect the District's scale and its strong connections with Nelson. Tasman's smaller labour market and industry mix mean that some benefits may arise locally, while others are shared across the integrated Nelson and Tasman urban system.

PC81 can support local economic benefits by accommodating population and business growth in locations where infrastructure can service development, and where additional households and firms

strengthen local centres. The scale of those benefits depends on the extent to which enabled capacity is taken up, and infrastructure is delivered in a timely way.

2.3 New Zealand research and evidence

PwC (2020) - Cost-Benefit Analysis of the NPS-UD

Specific to New Zealand, a comprehensive economic assessment of urban intensification was an evaluation of the proposed National Policy Statement on Urban Development (NPS-UD) by PricewaterhouseCoopers (PWC). This assessment examined whether the benefits of urban growth and intensification exceed the costs (PwC, 2020).

The NPS-UD sets out to improve the functioning of urban land markets by increasing development capacity, enabling intensification, improving housing supply responsiveness, and reducing unnecessary planning constraints (PwC, 2020; Ministry for the Environment, 2020).

The PwC cost-benefit analysis for the National Policy Statement on Urban Development (NPS-UD) concluded that:

- Urban intensification improves access to employment and services
- More responsive land markets improve housing affordability
- Increased development capacity generates productivity benefits through agglomeration
- The overall package was expected to produce net economic benefits nationally (PwC, 2020).

Regulatory Impact Statement for NPS-UD and MDRS

A Regulatory Impact Statement (RIS) was prepared by the Ministry of Housing and Urban Development to support the NPS-UD and the Medium Density Residential Standards (MDRS), (MHUD, 2021).

The overarching argument was that higher density development can improve access to jobs, services, and amenities, enabling people and businesses to locate closer together. This can increase productivity through agglomeration effects and by strengthening labour market matching (MHUD, 2021).

While recognising that urban growth and intensification can create costs, including infrastructure investment requirements and potential local amenity impacts, the assessments concluded that these challenges can generally be managed through planning and infrastructure provision.

The RIS concluded that increasing development capacity through upzoning would improve the functioning of urban land markets, support additional housing supply, and generate wider urban benefits, including productivity gains associated with more efficient and denser urban development.

The RIS also noted that the NPS-UD cost-benefit analysis found net benefits from intensification across major urban centres (MHUD, 2021).

2.4 Discussion and objective of this report

The objective of this report is to estimate the economic activity associated with the PC81 development scenario and to present the infrastructure investment identified by Tasman District Council as required to service, enable, or respond to PC81-related growth.

The report does not attempt to quantify the costs and benefits within the total Nelson Tasman Urban Environment and analyses the Tasman District only. The comparison provides an indication of scale and timing. It does not establish whether PC81 produces net economic benefits in a welfare-economic sense, but it does quantify the scale of the economic impact to enable the assessment of the economic effects of PC81.

The studies reviewed in this section indicate that urban growth and intensification deliver their strongest outcomes when they are coordinated with supporting infrastructure and the timely management of capacity.

Key considerations include transport and Three Waters capacity, access to open space, local amenity, environmental outcomes, and health and well-being. Addressing these matters through coordinated investment and planning helps ensure that additional households and businesses are efficiently serviced, and that growth contributes positively to existing and future communities.

Well-sequenced infrastructure planning and investment can support these outcomes by providing sufficient network capacity, enabling efficient movement, facilitating well-serviced development, and helping communities benefit from growth as it occurs.

Finally, wider effects and costs from intensification are briefly discussed in Appendix H.

3 Economic impact assessment (EIA) methodology

3.1 Assessing the economic benefits of intensification

This analysis is a targeted economic assessment, focused on the economic impact that can be quantified for PC81, which comprises the direct economic effects associated with additional dwelling construction and increased household consumption, along with the infrastructure investment required to support growth.

The quantification of these effects provides an indication of the economic activity and the infrastructure investment associated with PC81. It is not a conventional welfare-based benefit-cost analysis because GDP generated by expenditure is not a measure of net social benefit.

3.2 Methodology

The assessment estimates economic activity associated with the PC81 development scenario, and separately estimates infrastructure investment associated with that scenario. The quantified outputs comprise direct expenditure, direct GDP, and annual employment supported by dwelling construction and household consumption. The key measure of economic impact for this analysis is direct GDP.

These outputs are presented for two assessment horizons, 2037 and 2057. Future monetary flows are converted to constant-price present values using a two percent real discount rate. The results are conditional on the development, uptake, and infrastructure attribution assumptions to PC81 described in this report. They should not be interpreted as estimates of net welfare benefit.

3.3 Key assumptions

The assessment is shaped by several key assumptions, summarised in Appendix C, which provide a transparent basis for interpreting the results and identifying how outcomes could vary. The key assumption for this assessment is the pace and extent of development. Faster uptake and stronger local retention of expenditure would increase the estimated activity, while slower uptake or higher infrastructure costs would moderate it. Other assumptions were made for estimating the household consumption and residential construction effects.

3.4 Summary of economic effects

Table 7 outlines the methodology used to quantify the economic effects associated with PC81 across residential construction and household consumption. For both categories, impacts are phased over time to reflect the timing of development uptake and economic activity.

Table 7 Economic effects of PC81 and approach to quantification

Effects	Approach
Construction	Estimate the value of additional dwelling construction enabled by PC81 by applying dwelling numbers, average floor areas, and construction cost assumptions by housing type. Construction expenditure is phased over time.
Consumption	Estimate the number of additional households accommodated under PC81 and apply average household expenditure profiles from the Household Economic Survey. Household spending is phased in as dwellings are occupied.

Source: BERL analysis

Exclusion of business benefits

PC81 enables approximately 76 hectares of additional business land, creating capacity for future commercial and industrial development. The associated business activity benefits have been excluded from the headline economic impact estimates because some of this activity may reflect the relocation of existing firms, or expenditure already captured through additional household consumption. This would create a risk of double counting. The business benefit estimates are nevertheless outlined in Appendix G to provide a comprehensive account of the potential effects considered and the methodology applied. The costs of infrastructure to service the additional business land have been included in the total infrastructure costs identified in this report.

3.5 Interpreting the economic case for PC81

Residential construction expenditure and associated GDP are reported as measures of regional economic activity supported during development. They are not net economic benefits in a conventional welfare-based assessment, because the labour, capita, and materials used in construction have opportunity costs.

The 2057 assessment horizon provides the broadest representation of the long-term economic activity associated with PC81 over several decades, and relies on assumptions about long-term growth trajectories, uptake, infrastructure timing, and development outcomes.

The 2037 assessment horizon provides a near-term view, showing how early infrastructure investment supports development and creates capacity for benefits that continue to build beyond the first decade. The 2037 outcomes are weighted more heavily towards costs, reflecting the upfront timing of infrastructure investment, while the associated economic effects accrue over time.

4 PC81 urban growth scenario

The assessment focuses on the economic activity associated with the PC81 development scenario. The results are best interpreted as illustrating the scale of activity that could accompany PC81, while recognising that the extent of additional activity will depend on the alternative development pathway.

4.1 Projected urban growth from PC81

Tasman District Council estimates that PC81 could accommodate 9,486 additional residents over the 2027–2057 assessment period. The assessment period is based on Council's 2026 draft growth model, while town-level household sizes were used to convert dwelling development into population growth.

Population growth is expected to occur progressively, with 527 additional residents accommodated between 2027 and 2030, a further 2,499 between 2031 and 2037, and a further 6,460 between 2038 and 2057. On a cumulative basis, this represents approximately 3,026 additional residents by 2037 and 9,486 by 2057.

Table 8 Additional population accommodated through PC81

	Yearly increase in population	Additional population over period	Total residents
2027-2030	132	527	527
2031-2037	357	2,499	3,026
2038-2057	323	6,460	9,486

Source: Tasman district council

The construction scenario assumes that 4,102 dwellings are delivered progressively across the district by 2057. Of these, 1,825 are expected to be realised in Richmond, Brightwater, and Wakefield, with the balance located in the other PC81 areas.

The 4,102 dwellings are a development scenario used for the economic modelling, not an assumption that all theoretical plan-enabled capacity will necessarily be developed. Actual delivery will depend on market demand, feasibility, infrastructure availability, financing conditions, and landowner decisions.

Approximately 226 dwellings are assumed to be constructed between 2027 and 2030, followed by 1,076 dwellings between 2031 and 2037 and 2,800 dwellings between 2038 and 2057. This

results in cumulative development of approximately 1,302 dwellings by 2037, with all 4,102 dwellings delivered by 2057.

Table 9 Additional dwellings accommodated through PC81

	Dwellings built during period	Total dwellings
2027-2030	226	226
2031-2037	1,076	1,302
2038-2057	2,800	4,102
Total		**4,102**

Source: Tasman District Council

4.2 Intensification assumptions

The Nelson Tasman Future Development Strategy (FDS) provides the long-term spatial framework for accommodating residential and business growth across the combined Nelson and Tasman urban environment. It identifies preferred growth locations and informs infrastructure planning and district plan implementation over a 30 year period.

Table 10 provides breakdown of the residential capacity that could be realised from PC81 to enable a comparison against the FDS assumptions (discussed in Appendix B). This breakdown is based on a 15 percent and 20 percent uptake rate from intensification, specifically for the areas of Richmond, Brightwater, and Wakefield.

Table 10 30-year realised capacity estimates

Area	15 percent uptake rate	20 percent uptake rate
Richmond Town Centre	175	230
Richmond Intensive Development Precinct	200	270
Richmond Medium Density Zone	1,000	1,235
Richmond Sub-total	**1,375**	**1,735**
Brightwater Medium Density Zone	45	65
Wakefield Medium Density Zone	100	135
Total	**1,520**	**1,935**

Source: Cam Wallace – Barker & Associates Limited

The uptake rate refers to the proportion of the total additional dwelling capacity, enabled by PC81, that is assumed to be realised as built and occupied dwellings over the 30-year assessment period.

The denominator is the theoretical or plan-enabled residential capacity, while the numerator is the number of dwellings expected to be developed within that period. A 15 percent uptake rate means

that 15 percent of the enabled capacity is assumed to be realised by 2057, while a 20 percent uptake rate assumes that one-fifth of the enabled capacity is realised over the same period.

The realised number of dwellings for Richmond, Brightwater, and Wakefield for this economic assessment is 1,825, slightly under the 20 percent uptake rate and yield of the PC81 capacity.

By contrast, the 1,825 figure relates only to the subset of enabled capacity expected to be realised in Richmond, Brightwater, and Wakefield over the assessment period, and is slightly below the 20 percent uptake rate for those areas. The 4,102-dwelling capacity figure refers to the total additional dwelling capacity enabled by PC81 across the entire Tasman District Council area.

New Zealand evidence indicates that realised uptake following upzoning varies with local market conditions, development feasibility, infrastructure availability, landowner responses, and the characteristics and current uses of affected sites. The scenario approach used here responds to that variation by applying explicit uptake assumptions that can be reviewed as conditions evolve.

Notwithstanding these limitations, for the purposes of long-term scenario analysis, assumed uptake rates of 15 percent to 20 percent over a 30-year period recognise that only a proportion of theoretically enabled capacity is typically converted into development over time.

Realised uptake will emerge from the interaction of supply and demand. Enabled capacity is most likely to translate into development where projects are commercially feasible, infrastructure is available, and market demand supports the locations and dwelling types provided through PC81.

5 Infrastructure costs

5.1 Measures of infrastructure costs for PC81

Infrastructure investment related to PC81 is assessed through several progressively narrower measures. These range from all identified infrastructure projects across the district, to projects primarily driven by growth, to projects identified as being specifically triggered by PC81. The measures considered in this assessment are:

- All identified projects and all costs
- Cost of all the identified projects weighted by the share of the project due to growth
- PC81 identified projects and all costs
- Cost of PC81 linked projects weighted by the share of growth and the share of growth due to PC81

5.2 All identified projects and all costs

The first measure presents the value of all identified infrastructure projects across the district, including projects associated with growth, renewals, level-of-service improvements, operations and maintenance, and other drivers. It provides a broad view of the district-wide investment programme and a useful upper reference point when considering PC81. The more targeted measures that follow identify the portions more closely associated with growth and the plan change.

As shown in Table 11, all identified infrastructure projects have a total real value of approximately $1.24 billion over the first 10 years. Discounted to present value using a two percent discount rate, this equates to approximately $1.13 billion. Over the full 30-year horizon, the total real value of all identified infrastructure projects is approximately $2.36 billion. In present value terms, this equates to approximately $1.89 billion. For the purposes of the economic assessment, the discounted present value estimates provide the relevant cost measure for comparison with discounted benefits.

Table 11 Total value of all identified projects, all costs, real terms

Time frame	Value ($m)	Present value (discounted, $m)
2037	1,239	1,128
2057	2,365	1,890

Source: MRCagney

5.3 Cost of all the identified projects weighted by the share of the project due to growth

Table 12 refines the upper-bound estimate in Table 11 by applying each project's identified growth share to its total cost. It therefore excludes the portions attributed to renewals, level-of-service improvements, and operations and maintenance, while retaining growth-related investment across the District.

This adjustment reduces the estimated infrastructure cost from $1.239 billion to $330 million by 2037, and from $2.365 billion to $507 million by 2057. On a discounted present-value basis, the corresponding costs are $301 million and $418 million.

Table 12 Cost of all the identified projects weighted by the share of the project due to growth, real terms

Time frame	Value ($m)	Present value (discounted, $m)
2037	330	301
2057	507	418

Source: MRCagney

5.4 PC81 identified projects and all costs

The third measure considers all costs of infrastructure that TDC has identified as being specifically required to accommodate PC81. This includes the full cost of projects identified as being triggered by PC81, rather than only the share of costs attributable to growth.

As shown in Table 13, projects identified as being triggered by PC81 have a total real value of approximately $524 million over the first 10 years. Discounted to present value, using a two percent discount rate, this equates to approximately $472 million. Over the full 30-year horizon, the total real value increases to approximately $566 million, with a present value of approximately $501 million.

Table 13 Total value of projects identified as being triggered by PC81, all costs, real terms

Time frame	Value ($m)	Present value (discounted, $m)
2037	524	472
2057	566	501

Source: MRCagney

The projects identified as supporting PC81 frequently deliver broader value as well. Many include level-of-service components that benefit existing residents and businesses while also creating capacity for future growth.

5.5 Cost of PC81 linked projects weighted by the share of growth and the share of growth due to PC81

Table 14 provides the most targeted estimate of infrastructure costs associated with PC81. It includes only projects linked to the plan change (see Appendix G) and then prorates their costs to reflect the share attributable to growth and the share of that growth associated with PC81. This avoids attributing to PC81 the portions of these projects that relate to renewals, level-of-service improvements, operations and maintenance, or wider district growth.

On this basis, the estimated cost is $120 million by 2037 and $141 million by 2057, with discounted present values of $110 million and $125 million respectively. The relatively small increase after 2037 indicates that most PC81-related infrastructure investment is expected to occur in the first decade.

Table 14 Cost of PC81 linked projects weighted by the share of growth and the share of growth due to PC81, real terms

Time frame	Value ($m)	Present value (discounted, $m)
2037	120	110
2057	141	125

Source: MRCagney

5.6 Summary of infrastructure costs

The purpose of estimating infrastructure costs is to understand the scale and timing of the investment associated with PC81, its impact on the Tasman economy, and the cost of providing the infrastructure required to service the additional dwellings enabled by the plan change (which are assessed in Section 7).

The total cost for all infrastructure to 2057, directly and indirectly required by PC81, is estimated at $1.89 billion (present value estimate), with costs for projects assessed as linked to PC81 growth costing $125 million (present value estimate) in the same period.

In 2037 those figures are $1.128 billion and $110 million. Impact by 2037 is weighted more heavily towards costs, reflecting the upfront timing of infrastructure investment, while the benefits accrue progressively.

6 PC81 economic effects

This section summarises the direct economic benefits arising from the residential growth enabled by PC81. Drawing on the dwelling and population scenarios presented in Section 4 it estimates the construction activity generated as new dwellings are delivered, and the ongoing household consumption supported as additional residents settle in the Tasman District. Results are presented for the first decade to 2037, and across the full 2027–2057 assessment period.

6.1 Residential construction

The residential development enabled through PC81 is expected to generate construction activity over the 2027-2057 period as new housing is delivered across the district. To estimate this effect, projected dwelling development was translated into construction expenditure using assumptions regarding dwelling typologies, floor area requirements, and construction costs.

Total impact (2027-2057)

Across the full residential construction programme, approximately $1.3 billion of direct construction expenditure is generated. This activity is estimated to support approximately $0.3 billion in direct GDP for the wider economy over 2027-2057. These effects reflect the substantial labour, materials, professional services, transport, manufacturing, and business support inputs required to deliver 4,102 new dwellings across the district.

Table 15 Direct economic impact of the construction sector over the 2027-2057 period

	Direct ($b)
Expenditure	1.3
GDP	0.3

Source: BERL analysis

All construction expenditure was initially estimated in future-year dollars based on the projected timing of development and expected construction cost escalation. To ensure consistency with the wider cost-benefit analysis, future construction impacts were converted to present values using the New Zealand Treasury prescribed social discount rate of two percent. This process discounts future costs and benefits back to today's values. All construction expenditure and GDP impacts reported in this assessment are therefore presented on a net present value (NPV) basis.

First decade impact (2027-2037)

Given that housing development is expected to occur progressively over approximately three decades, a view of the benefit generated by 2037 provides a useful indication of the level of construction activity generated 10 years into the project.

Table 16 Impact of the construction enabled by PC81, 2037

	Direct ($m)
Expenditure	462
GDP	96

Source: BERL analysis

The construction programme is estimated to generate approximately $462 million in direct expenditure by 2037. This translates to an estimated direct GDP impact of $96 million.

6.2 Household consumption

The additional households enabled through PC81 generate an ongoing source of economic activity through their day-to-day expenditure on goods and services. As new residents occupy dwellings enabled under PC81, their spending supports local businesses, employment, and economic activity across a wide range of sectors.

The household consumption assessment uses the projected 9,486 additional residents associated with 4,102 dwellings. For consistency with the Household Economic Survey, the population is converted to 3,514 households using an assumed average household size of 2.7 people. This differs from the approximately 2.3 residents per dwelling implicit in the development scenario. The consumption results are therefore sensitive to the choice of household size assumption and should be interpreted as scenario estimates rather than forecasts.

Total impact (2027-2057)

Table 17 Direct economic impact of household consumption over the 2027-2057 period

	Direct ($b)
Expenditure	1.6
GDP	1.0

Source: BERL analysis

Across the full assessment period, household consumption supported by PC81 is estimated to generate approximately $1.6 billion in direct expenditure. Direct household consumption generates approximately $1.0 billion in GDP.

These impacts arise because household expenditure is dispersed across a diverse set of industries, many of which have relatively high labour requirements. Household consumption tends to support broad-based employment across retail, hospitality, health, professional services, education, transport, recreation, and other consumer-oriented industries.

The consumption benefits assume leakage of retail spending to outside the Tasman District, Nelson in particular, of 35 percent. This is based on a Urbacity report from 2014 which found leakage at 35 percent (Urbacity, 2014).

Consumption benefits are hence conservative, because they do not account for workers commuting into Tasman from neighbouring districts. The extent of their retail spending in Tasman is uncertain, however, there is an estimated net outflow of 7.5 percent of workers.

First decade impact (2027-2037)

By 2037, PC81 is estimated to have enabled approximately 1,302 additional dwellings. These expenditure impacts therefore reflect the level of household consumption associated with that cumulative household total.

Table 18 Impact of the consumption enabled by PC81, 2037

	Direct ($m)
Expenditure	185
GDP	111

Source: BERL analysis

By 2037, household consumption is estimated to generate approximately $185 million in direct expenditure. This expenditure supports approximately $111 million in direct GDP.

6.3 Summary

Under the modelled development scenario, over 2027-2057, construction and the spending of additional households are together estimated to support $2.9 billion in direct expenditure and $1.3 billion in direct gross domestic product (GDP), expressed at discounted present values.

Table 19 Total expenditure and GDP from activity enabled by PC81, 2027-2057

	Direct expenditure ($b)	Direct GDP ($b)
Consumption	1.6	1.0
Construction	1.3	0.3
Total	2.9	1.3

Source: BERL analysis

7 PC81 impact measures

This section summarises the economic impact and infrastructure investment related to PC81 in the context of the Tasman economy. It outlines the annual employment supported by construction and household consumption, compares the associated population and GDP effects with current district measures, and assesses the scale of infrastructure investment. It also compares the infrastructure costs on a per-dwelling basis against section and dwelling values and development contributions.

7.1 Employment effect

Consumption

Employment supported through household consumption represents ongoing jobs associated with the expenditure of additional residents on local goods and services. Table 20 shows that consumption will drive approximately 216 FTEs in the Tasman district by 2037. This then grows to 391 FTEs by 2057. These figures represent the FTEs in the respective years, and not the cumulative number of FTEs over the period.

Table 20 Consumption FTEs in the year 2037 and 2057

Consumption year	2037	2057
FTEs	216	391

Source: BERL analysis

Residential construction

Residential construction impacts are best interpreted as employment supported over the development period through the delivery of additional dwellings. Table 21 shows that the number of FTEs, generated by the construction associated with PC81, is 84 in 2037, before reducing to 45 in 2057. This reduced number of FTEs in 2057 results from the slowing down of the projected building by this time.

Table 21 Construction FTEs in the year 2037 and 2057

Construction year	2037	2057
FTEs	84	45

Source: BERL analysis

Total

The total number of FTEs in 2037 is 300. This number grows to a total of 436 FTEs in 2057, remembering that these are yearly totals and not cumulative totals. This growth in jobs can be

seen as a long-term increase in ongoing employment, with annual FTEs rising from 300 to 436 between 2037 and 2057.

Table 22 Total FTEs in the year 2037 and 2057

	2037	2057
Construction	84	45
Consumption	216	391
Total	300	436

Source: BERL analysis

Employment growth as a percentage of current FTE

Table 22 shows that by 2037, the projected 300 FTEs supported by PC81 represent approximately 1.2 percent of current Tasman FTEs. By 2057, this contribution is expected to increase to 1.8 percent of current FTEs, reflecting continued growth associated with the plan change.

Table 23 Percentage of current Tasman FTEs generated by PC81, 2037 and 2057

	Percentage of FTEs
2037	1.2
2057	1.8

Source: BERL analysis

7.2 PC81 impact on the Tasman economy

Table 24 shows that, across the 2027–2057 assessment period, activity enabled by PC81 is estimated to generate $1.3 billion in cumulative direct GDP, on a discounted present-value basis. Household consumption accounts for the largest share, contributing $1.0 billion, while residential construction contributes $0.3 billion.

Relative to the current annual Tasman economy, these cumulative impacts are equivalent to approximately 26 percent and eight percent respectively, or around 35 percent for PC81 in total.

Table 24 PC81 impact on the Tasman economy

	Direct GDP impact ($b, NPV)	Percentage of Tasman economy
Consumption	1.0	26
Construction	0.3	8
Total	1.3	35

Source: BERL, totals may not add due to rounding

The comparison provides an indication of scale, but should not be interpreted as an annual contribution because the GDP impacts accrue over 30 years.

GDP and FTE impact in 2037 and 2057

Table 25 shows that, in 2037, PC81 is estimated to enable 300 FTEs and $37 million in annual GDP. Relative to the current Tasman economy, these impacts are equivalent to approximately 1.2 percent of current employment and 1.0 percent of current GDP. These annual impact estimates are distinct from the cumulative GDP measures reported earlier in this section.

Table 25 GDP and FTE impact in 2037

	Current	Estimated impact from PC81 in 2037	Percentage of current
FTE	24,044	300	1.2
GDP ($m)	3,638	37	1.0

Source: BERL

Table 26 shows that, in 2057, PC81 is estimated to support 436 FTEs and $63 million in annual GDP. These impacts are equivalent to approximately 1.8 percent of current Tasman employment and 1.7 percent of current GDP.

Compared with 2037, the larger contribution reflects the ongoing increase in household consumption as more PC81-enabled dwellings are occupied. This more than offsets the reduction in construction activity. These are annual impacts in 2057 and are distinct from the cumulative discounted GDP measures reported earlier in the section.

Table 26 GDP and FTE impact in 2057

	Current	Estimated impact from PC81 in 2057	Percentage of current
FTE	24,044	436	1.8
GDP ($m)	3,638	63	1.7

Source: BERL

7.3 Infrastructure investment impact on the Tasman economy

Table 27 shows that the scale of infrastructure investment associated with PC81 varies materially depending on how costs are defined. On the broadest measure, all identified infrastructure projects amount to $1.24 billion over 10 years and $2.36 billion over 30 years, equivalent to 34 percent and 65 percent of current Tasman GDP respectively. Expressed as an annual average, this represents around 3.4 percent of current GDP over 10 years and 2.2 percent over 30 years.

Table 27 Infrastructure investment impact on the Tasman economy

Infrastructure measure	2037	2057
Total estimated infrastructure cost ($m, undiscounted)		
Total value of all identified projects, all costs	1,239	2,365
Total value of projects identified attributed to growth, all costs	330	507
Total value of projects identified as being triggered by PC81, all costs	525	566
Total value of projects identified as being triggered by PC81, costs prorated by share attributable to growth	120	141
Percentage of current Tasman economy (percentage)		
Total value of all identified projects, all costs	34	65
Total value of projects identified attributed to growth, all costs	9	14
Total value of projects identified as being triggered by PC81, all costs	14	16
Total value of projects identified as being triggered by PC81, costs prorated by share attributable to growth	3	4
Percentage of current Tasman economy, annual average over period (percentage)		
Total value of all identified projects, all costs	3.4	2.2
Total value of projects identified attributed to growth, all costs	0.9	0.5
Total value of projects identified as being triggered by PC81, all costs	1.4	0.5
Total value of projects identified as being triggered by PC81, costs prorated by share attributable to growth	0.3	0.1

Source: BERL, MRCagney

The narrower growth-related measure is substantially smaller, at $330 million over 10 years and $507 million over 30 years, equivalent to nine percent and 14 percent of current GDP. On an annualised basis, this equates to around 0.9 percent and 0.5 percent of current GDP respectively.

The most targeted prorated PC81-triggered measure is smaller again, at $120 million over 10 years and $141 million over 30 years, equivalent to three percent and four percent of current GDP. Annualised, this represents around 0.3 percent and 0.1 percent of current GDP.

7.4 Infrastructure cost per dwelling

Infrastructure cost per dwelling provides a useful sense check on the scale of growth-related costs relative to the number of additional dwellings enabled through PC81.

Table 28 provides an indicative estimate of infrastructure cost per dwelling associated with PC81. The estimated cost is approximately $92,200 per dwelling over the first 10 years, reflecting the substantial upfront infrastructure investment required to service early growth.

Over the full 30-year period, the cost reduces to approximately $34,300 per dwelling as infrastructure investment is spread across a larger number of enabled dwellings. This indicates that the cost profile is sensitive to timing, with upfront infrastructure requirements materially increasing the short-term cost per dwelling relative to the long-term average.

Table 28 Estimate infrastructure cost per dwelling

Measure	2037	2057
Total dwellings (number)	1,302	4,102
Total value of projects identified as being triggered by PC81, costs prorated by share attributable to growth ($)	120,034,751	140,618,781
Infrastructure cost per dwelling ($)	92,193	34,281

Source: BERL, MRCagney

This estimate is best viewed as an indicative average that provides a useful sense of scale. Actual charges and funding arrangements will reflect Council funding settings, development contributions, the timing of investment, and the specific infrastructure requirements of each growth area.

Table 29 benchmarks the indicative infrastructure cost per dwelling against assumed Tasman section values.

The estimated infrastructure cost represents around 9.8 percent of a low section value of $350,000, 7.6 percent of a central section value of $450,000, and 5.7 percent of a high section value of $600,000. This indicates that, on a long-run average basis, the infrastructure cost per dwelling is relatively modest when compared with prevailing land values.

This provides a useful sense check that the scale of PC81-related infrastructure investment is proportionate to the value of residential development enabled through the plan change.

Table 29 Infrastructure cost per dwelling as a share of section price

	Tasman section value (indicative)	Infrastructure cost per dwelling as a share of section price
Low	350,000	9.8
Central	450,000	7.6
High	600,000	5.7

Source: BERL

Table 30 benchmarks the indicative infrastructure cost per dwelling against recent dwelling value measures for Tasman District. The estimated infrastructure cost represents approximately 4.1 percent of the August 2026 median house value of $830,000, and 4.4 percent of the March 2026 mean average house value of $774,691.

This indicates that, on a long-run average basis, the infrastructure cost per additional dwelling is less than 10 percent relative to prevailing dwelling values. This provides a further sense check that the scale of PC81-related infrastructure investment is proportionate to the value of residential development enabled through the plan change.

Table 30 Infrastructure cost per dwelling as a share of dwelling cost

Tasman district dwelling costs	Value	Infrastructure cost per dwelling as a share of dwelling cost
Median house value (August 2026)	830,000	4.1
Mean average house value (March 2026)	774,691	4.4

Source: BERL, MRCagney, Opes Partners, Infometrics

Table 31 provides a benchmark range for development contributions in Nelson City Council. Compared with these benchmarks, the estimated PC81 long-run average infrastructure cost of approximately $34,300 per dwelling sits within comparable development contributions for Nelson City Council.

Table 31 Nelson City Council Development Contributions (DC)

Type of development	Nelson DC per dwelling (2026/27, excluding GST)
Brownfield	$28,210
Greenfield	$44,562

Source: Nelson City Council

7.5 Summary

PC81 is projected to make a quantifiable contribution to the Tasman economy through increased residential development, population growth, household spending, and associated economic activity.

The assessment estimates the scale of both the economic effects associated with the additional population and housing enabled by PC81, including construction and household consumption activity, and the infrastructure investment required to support that growth.

These effects are not compared directly, as they represent different measures and should not be interpreted as equivalent costs and benefits. Rather, the analysis provides an estimate of the scale of the economic activity associated with PC81 alongside the scale of the infrastructure investment required to enable it.

The efficiency of this investment is considered separately through an assessment of infrastructure cost per additional dwelling, which provides a more appropriate basis for assessing the relative efficiency of accommodating growth under PC81.

On a cost-per-dwelling basis, the assessment indicates that the infrastructure required to support PC81 provides a relatively efficient and effective pathway to accommodate planned growth.

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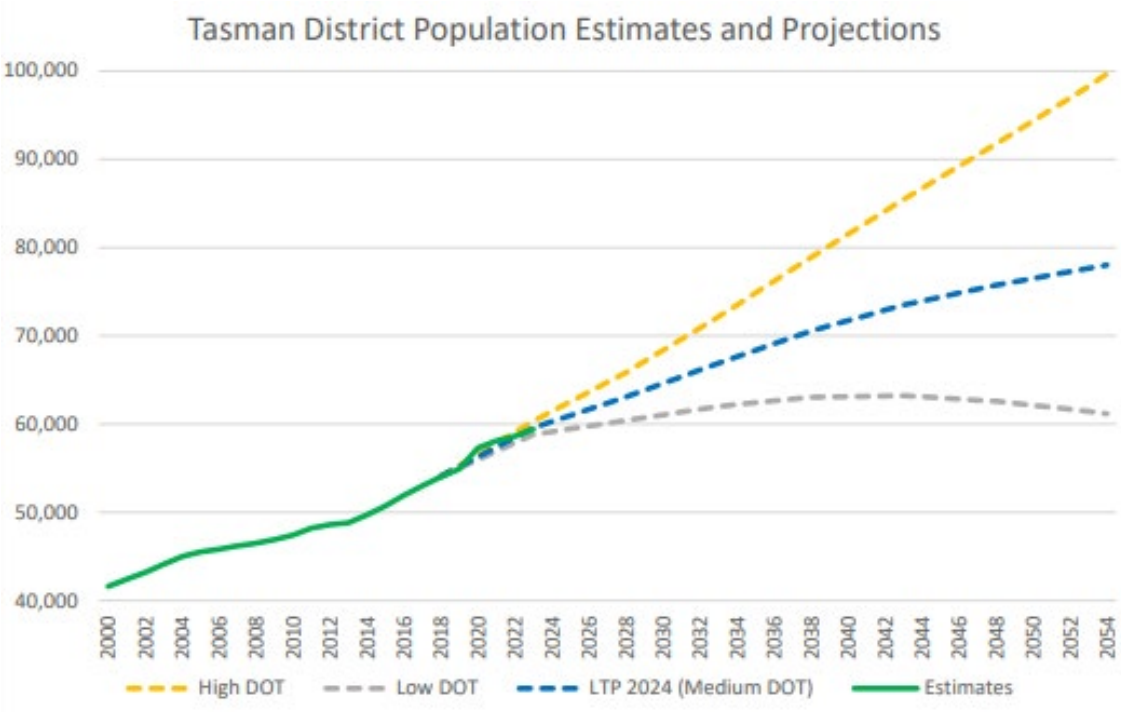
Appendix B Background for PC81

Tasman district growth context

Tasman District has experienced sustained population growth over the past two decades, driven primarily by net migration. While growth has slowed from the peaks experienced during the early 2020s, Tasman's population is projected to continue increasing over the long-term.

The Tasman District Council (TDC) Housing and Business Assessment (HBA) projects that the district's population will increase from approximately 60,500 residents in 2024 to 67,900 residents by 2034, and to around 78,800 residents by 2054. Most future growth is expected to occur within the district's urban settlements, particularly Richmond, Motueka, Brightwater, Wakefield, and Māpua.

Figure 1 Tasman population growth estimates, 2000-2054



Source: Tasman District Council research

PC81 provides part of the residential and business land capacity required to accommodate this planned population growth, by enabling additional development in locations identified through the district's growth planning evidence base.

Population growth has occurred alongside significant housing affordability pressures. The Nelson Tasman region functions as a single housing and labour market, yet housing supply has struggled

to keep pace with demand in some locations. The HBA found that Tasman has experienced strong house price growth, high housing costs relative to incomes, and increasing demand for a broader range of dwelling types, including smaller and attached housing.

Under the National Policy Statement on Urban Development (NPS-UD), Tasman and Nelson are classified as a combined Tier 2 urban environment. The NPS-UD requires both councils to ensure there is sufficient development capacity for housing and business land over the short-, medium- and long- term.

To meet these obligations, Tasman District Council has developed a substantial evidence base including population projections, housing demand analysis, business land demand forecasts, and infrastructure planning assessments. It has also developed the Nelson Tasman Future Development Strategy (FDS) as required by the NPS-UD. These provide the foundation for long-term urban growth planning across the district.

Future Development Strategy and urban growth planning

The Nelson Tasman Future Development Strategy (FDS) provides a 30 year spatial framework for accommodating growth.

The FDS identifies where future residential and business growth should occur and establishes a pattern of development intended to balance housing demand, infrastructure efficiency, environmental constraints, and community outcomes. The strategy provides capacity for substantial residential and business growth across the region and informs both infrastructure planning and district plan implementation.

PC81 represents the primary mechanism through which a significant proportion of the FDS is implemented within the Tasman Resource Management Plan (TRMP). PC81 translates the strategic growth framework established through the FDS into zoning provisions and development capacity on the ground.

Purpose and intended outcomes of PC81

PC81 is an update to the Tasman Resource Management Plan. It is designed to provide additional housing and business capacity while giving effect to the NPS-UD. PC81 enables the Future Development Strategy and draws from the findings of the Housing and Business Assessment.

The plan change introduces a range of zoning amendments, alongside new planning provisions intended to improve the ability of the District to accommodate forecast growth.

At a strategic level, PC81 seeks to:

- implement residential and business land capacity identified through the Future Development Strategy
- increase the diversity of available housing, particularly smaller and medium-density dwellings
- provide development capacity to meet projected housing and business demand
- better align growth with infrastructure investment and servicing capacity
- reinforce the role and function of urban centres
- support the long-term growth and resilience of areas such as Māpua.

To achieve these objectives, PC81 proposes both urban intensification and greenfield expansion. The plan introduces a new Medium Density Residential Zone, expands residential and business zoning in appropriate growth locations, strengthens the planning framework for commercial centres, and improves opportunities for papakāinga and Māori land development.

The scale of growth enabled through PC81 is substantial. TDC's Section 32 evaluation estimates that the plan change enables approximately 4,102 additional dwellings and around 76 hectares of business land across the district. This additional capacity is intended to address identified housing and business land shortages, and provide the capacity required to accommodate future population growth.

Table 32 Housing rezoning and expected housing enabled

Area	Net site area (ha)	Number dwellings
Brightwater	31	73
Māpua	72	1,120
Motueka	9	184
Motueka Valley	256	610
Moutere	13	130
Richmond	56	1,405
St Arnaud	10	20
Tākaka	96	209
Tapawera	0	4
Wakefield	18	347
Total	**560**	**4,102**

Source: Tasman District Council

Appendix C Key assumptions

Development realisation

The assessment assumes that a proportion of the residential and business development capacity enabled through PC81 is ultimately realised over time.

While the plan change provides the regulatory capacity for growth, actual development outcomes will depend on factors including market demand, financing conditions, developer behaviour, construction costs, infrastructure delivery, and broader economic conditions.

Consequently, the modelling should be interpreted as estimating the economic impacts that may be supported if the enabled development capacity is utilised, but not a prediction that all capacity will be developed.

Construction assumptions

The construction assessment applies representative dwelling sizes and construction costs for apartments, townhouses, detached dwellings, and lifestyle/rural homes. These assumptions are intended to reflect typical development outcomes enabled under PC81.

Actual construction costs and dwelling sizes will vary depending on location, design specifications, site conditions, market conditions, material costs, and development typologies. Consequently, estimated construction expenditure is indicative rather than a precise forecast of future development costs.

In addition, the assessment assumes that the distribution of housing typologies across growth areas is consistent with the expected development outcomes associated with the relevant zoning provisions and growth forecasts supplied by Tasman District Council.

Household expenditure assumptions

The household consumption assessment assumes that future households exhibit expenditure patterns broadly consistent with those observed in the current Statistics New Zealand's Household Economic Survey (HES).

While consumer preferences and spending behaviour are likely to evolve over time, future residents are assumed to allocate expenditure across goods and services in a similar manner to current households. This assumption is standard practice in economic impact modelling and provides a practical basis for estimating long-term consumption impacts.

Inflation and discounting assumptions

To ensure comparability across impacts occurring at different points in time, all future expenditure, GDP, and employment impacts are discounted to present values using the New Zealand Treasury social discount rate of two percent. All reported cumulative results are therefore presented on a net present value basis.

Interpretation of results

The results provide estimates of the economic activity supported through new dwelling construction and additional household expenditure. They form one important part of the broader assessment of PC81's contribution to social welfare, community well-being, and long-term district outcomes.

The economic impacts represent potential outcomes under the assumptions outlined above and should be considered alongside the broader planning, environmental, infrastructure, and community considerations associated with the plan change.

Appendix D Construction effect methodology

Tasman District Council's growth forecasting identified capacity for approximately 4,102 additional dwellings enabled by PC81 over the development horizon. These dwellings were located across the various areas enabled through PC81 and classified into four broad housing typologies based on the zoning and likely form of development in each location:

- Apartments
- Townhouses
- Detached suburban dwellings
- Lifestyle/rural dwellings.

Each dwelling type was assigned an indicative average floor area reflecting typical development outcomes. Apartments were assumed to average 90 square metres, townhouses 104 square metres, detached suburban dwellings 176 square metres, and lifestyle or rural dwellings 200 square metres.

Construction costs were then estimated using representative building costs per square metre for each dwelling type, taken from Statistics New Zealand's consented floor area divided by value. Costs were approximately $3,096 per square metre for apartments, $3,710 per square metre for townhouses, $3,220 for detached suburban lifestyle and rural dwellings. Combining dwelling numbers, floor areas, and construction costs provided an estimate of the base construction value associated with delivering the projected housing stock.

The timing of development was informed by TDC's population and dwelling forecasts, which allocate growth across three broad periods:

- 2027-2030
- 2031-2037
- 2038-2057.

Each dwelling typology was distributed across these periods according to the expected pattern of development in each growth area. This enabled annual dwelling construction estimates to be developed and linked to an annual expenditure profile.

Annual construction expenditure was therefore calculated as:

$$CE_y = [(A_y \times FA_A \times C_A) + (T_y \times FA_T \times C_T) + (D_y \times FA_D \times C_D) + (R_y \times FA_R \times C_R)]$$

Where:

- CE_y= construction expenditure in year *y*
- A_y= apartments constructed in year *y*
- T_y= townhouses constructed in year *y*
- D_y= detached suburban dwellings constructed in year *y*
- R_y= lifestyle/rural dwellings constructed in year *y*
- FA= average floor area for each dwelling type
- C= construction cost per square metre for each dwelling type

In other words, annual construction expenditure was estimated by multiplying the number of dwellings constructed each year by the representative floor area and construction cost associated with each housing typology. The expenditure estimates for apartments, townhouses, detached dwellings, and lifestyle/rural dwellings were then combined to produce a total annual construction value. This process generated a year-by-year estimate of construction expenditure associated with the delivery of the additional housing enabled through PC81.

Appendix E Consumption effect methodology

The starting point for the analysis was the projected number of households associated with the additional population accommodated under PC81. TDC population forecasts and average household size assumptions were used to estimate the number of households expected within each development period:

- 2027-2030
- 2031-2037
- 2038-2057.

Household expenditure estimates were initially based on *Rest of South Island* Household Economic Survey data and subsequently re-apportioned using national expenditure shares to provide a more detailed expenditure profile. To align expenditure estimates with these national Household Economic Survey benchmarks, household counts were normalised to the national average household size of 2.7 persons. This adjusted the estimated number of households from 4,102 (based on TDC's assumed average household size of 2.3 persons) to 3,514, ensuring expenditure estimates were applied consistently.

TDC's annual growth projections were then used to develop a year-by-year household growth profile. Rather than assuming all households were established immediately, the model reflects the staged delivery of housing over time. Household growth commences at relatively low levels in the initial year, reflecting construction and occupancy timing, before increasing as additional dwellings are completed and occupied. Each year's expenditure therefore reflects the cumulative number of households established at that point in time.

Household expenditure was estimated using Statistics New Zealand's HES data for South Island households. Household expenditure categories were first converted into annual expenditure values and then mapped to detailed industry consumption categories. As the standard South Island HES expenditure groupings do not align directly with input-output industry classifications, expenditure was proportionally allocated across detailed consumption sectors based on the national HES findings.

This process distributed household spending across a broad range of industries, including:

- Retail trade

- Accommodation and food services
- Health care and social assistance
- Education and training
- Transport services
- Financial and insurance services
- Recreation and cultural services
- Utilities and communications
- Personal and household services.

The annual household expenditure associated with the new population was then estimated as:

$$HE_t = (H_t \times E_h)$$

Where:

- HE_t= household expenditure in year t
- H_t= cumulative households established in year t
- E_h= average annual household expenditure per household derived from the HES.

Consistent with the construction assessment and wider cost-benefit framework, all future expenditure streams were subsequently discounted to present values using the Treasury social discount rate of two percent.

As a result, the expenditure, GDP, and employment estimates presented in Table 16 represent the net present value household consumption generated over the assessment period.

Appendix F Business effect methodology (excluded from the assessment)

Commercial and industrial development and impact

Greenfield commercial development is estimated by identifying the area of commercial land and floorspace enabled by PC81. This land and floorspace are translated into industry-level economic activity using assumptions on employment density, occupancy rates, and output per worker. These assumptions reflect the likely composition of future commercial activity within the areas affected by the plan change.

Methodology

The projected land areas were converted from hectares into square metres and then translated into employment capacity using employee density assumptions from the Sense Partners business land assessment prepared for Tasman District Council. These assumptions estimate the amount of zoned land required to support a worker in different business activities and account for the relationship between zoned land and developed floorspace. The analysis applied the following assumptions:

- Commercial activities: 35 m² per worker
- Retail activities: 80 m² per worker
- Industrial activities: 200 m² per worker

These ratios reflect the land area required to support future employment.

Potential employment supported by the additional land capacity was estimated by dividing the available land area by the relevant employee density assumption:

$$W_t = \frac{M_t^C}{35} + \frac{M_t^R}{80} + \frac{M_t^I}{200}$$

Where:

- W_t= workers supported in year t
- M_t^C, M_t^R, and M_t^I represent commercial, retail, and industrial land area respectively.

The resulting employment estimates were allocated annually according to the expected timing of business land uptake and development. Similar to the residential modelling, employment effects

were assumed to accumulate over time, meaning each year reflects the total number of workers supported by all business land developed and occupied up to that point.

To estimate economic activity generated by these workers, average GDP-per-worker values were obtained for the broad retail, commercial, and industrial sectors within Tasman District. These broad sectors were then disaggregated into detailed industries using the observed employment composition of the Tasman economy. This enabled the employment generated through each broad land-use category to be allocated across the industries most likely to occupy the additional business land.

Industry-specific GDP estimates were calculated using:

$$GDP_t = (W_t^C \times GDP^C) + (W_t^R \times GDP^R) + (W_t^I \times GDP^I)$$

Where:

- W_t^C, W_t^R, and W_t^I represent the workers supported in commercial, retail, and industrial activities respectively;
- GDP^C, GDP^R, and GDP^I represent average GDP per worker for each activity type;
- t is the number of years from the base year.

The resulting GDP estimates were converted into industry output using industry-specific value-added-to-output ratios from the Tasman input-output table. This produced a series of annual output shocks, and then applied across the detailed industry sectors expected to occupy the additional business land.

Future impacts were subsequently discounted back to present values using the New Zealand Treasury social discount rate of two percent. Across the assessment period, business activity associated with the additional land capacity is estimated to generate approximately $2.1 billion in direct expenditure on a net present value basis.

All results reported in Table 32 are therefore presented on a net present value basis.

Assumptions

The business land assessment relies on current industry benchmarks regarding employment density. Assumptions regarding floor space and land requirements per worker were derived from the Sense Partners business land assessment prepared for Tasman District Council. The analysis assumes these relationships remain broadly stable over time. Future changes in technology, remote

working arrangements, automation, productivity, or business practices may alter the amount of land required to support employment in different sectors.

The assessment also assumes that future business growth follows a similar industry composition to the current Tasman economy. Employment generated by new commercial, retail, and industrial land was allocated across detailed industries based on the existing employment structure of those sectors within the district.

To manage double counting, the assessment excluded from the business impact calculation any businesses, such as 'residential construction' and 'supermarket and grocery stores', already accounted for within the construction and consumption calculations. This results in a total reduction of over 50 percent, leading to a more conservative estimate of total impacts.

Quantification

In addition to providing capacity for residential growth, PC81 enables additional commercial, retail, and industrial land intended to accommodate future business activity and employment growth. The business impact assessment estimates the economic activity supported by the additional employment capacity facilitated through this additional business land.

The assessment began with Tasman District Council's business land demand projections, which identified a requirement for approximately 9.85 hectares of additional business land between 2027 and 2037, and a further 13.24 hectares between 2038 and 2057. These land requirements represent the level of additional business capacity required to support projected economic and employment growth within the district.

Total impact (2027-2057)

Across the assessment period, business activity associated with the additional land capacity is estimated to generate approximately $2.1 billion in direct expenditure on a net present value basis.

Table 33 Total economic impact of business growth over the 2027-2057 period

	Direct
Expenditure ($b)	2.1
GDP ($b)	0.8

Source: BERL analysis

Direct business activity contributes approximately $0.8 billion in GDP between 2027-2057.

These impacts reflect the ongoing operation of businesses occupying the additional commercial, retail, and industrial land. The resulting economic benefits therefore continue throughout the assessment period as businesses expand, employ staff, and generate economic output.

First decade impact (2027-2037)

By the final year of the modelling period, the majority of the additional business land is assumed to be developed and occupied. Consequently, the final year impacts represent the total economic contribution associated with PC81's business land provision if fully developed.

Table 34 Impact of the business growth enabled by PC81, 2037

	Direct
Expenditure ($m)	341
GDP ($m)	127

Source: BERL analysis

By the end of 2037, the additional business activity is estimated to have generated approximately $341 million in direct expenditure over the period.

Direct GDP generated by businesses occupying the additional land is estimated at approximately $127 million total GDP contribution over the period.

Appendix G Infrastructure investment methodology

A list of planned infrastructure projects was provided by TDC. The list included hundreds of projects and did not quantify the likelihood of a project proceeding. This list provided a host of information for each identified project, which included:

- The share of the project attributed to
    - Growth
    - Level of service improvements
    - Renewals
    - Operations and Maintenance
- The main driver that triggers the project (usually, but not always, whichever of growth, level of service, renewals, operations and maintenance is the largest share in the previous metric)
- Whether the project has a linkage to PC81
- The total LTP cost/budget of 30 years
    - Broken down by year

The infrastructure programme will continue to evolve over the next thirty years as growth patterns, priorities, and information develop. The current project list provides Council's best available view of district infrastructure needs and is a sound basis for assessing the likely scale and timing of investment. Costs are indicative at this stage and can be progressively refined as projects move through design and delivery.

The dataset enables the overall programme to be separated into the portions associated with renewals, service improvements, wider growth, and PC81. The generalised method to calculate the cost of infrastructure due to PC81 is the following:

$$\sum_{\forall n \in N, y \in Y} \frac{C_{n,y} * s_n * P_n}{(1+d)^y}$$

Where:

N is the set of identified infrastructure projects by TDC and n is a specific project;

Y is the thirty year analysis period and y is a specific year;

$C_{n,y}$ is the cost of project n in year y;

s_n is the share of project n attributable to growth (defined by TDC);

P_n is a dichotomous variable that takes the value of 1 if a project is linked to PC81 and 0 otherwise;

d is the discount rate of 2% recommended by Treasury to account for the time value of money

This report includes four distinct measures of infrastructure costs which can be defined based on simplifications of the equation above, summarised in Table 35.

Table 35 Infrastructure cost analysis measures

Measure	Calculation
1) Total value of all identified projects, all costs	$\sum_{\forall n \in N, y \in Y} \frac{C_{n,y}}{(1+d)^y}$
2) Total value of projects identified attributed to growth, all costs	$\sum_{\forall n \in N, y \in Y} \frac{C_{n,y} * s_n}{(1+d)^y}$
3) Total value of projects identified as being triggered by PC81, all costs	$\sum_{\forall n \in N, y \in Y} \frac{C_{n,y} * P_n}{(1+d)^y}$
4) Total value of projects identified as being triggered by PC81, costs prorated by share attributable to growth	$\sum_{\forall n \in N, y \in Y} \frac{C_{n,y} * s_n * P_n}{(1+d)^y}$

Source: MRCagney

The measures are as follows:

- Measure 1 is the total present value of all projects identified by TDC.
- Measure 2 is the best estimate of the present value of infrastructure to accommodate all growth in the district.
- Measure 3 is the present value of all projects that are linked to PC81. Note that "linked" does not mean that the entire project will service areas affected by PC81. Rather, it relates to whether the project will service, even if only minimally, areas affected by PC81.
- Finally, Measure 4 is the present value of the growth component, of the projects identified, that is linked to PC81.

Appendix H Wider effects from intensification

Introduction

Section 32(2) of the RMA states that: *An assessment under subsection (1)(b)(ii) must—*

a. *identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—*

    i. *economic growth that are anticipated to be provided or reduced; and*

    ii. *employment that are anticipated to be provided or reduced; and*

b. *if practicable, quantify the benefits and costs referred to in paragraph (a)*

The preceding analysis quantifies important economic effects, particularly construction activity, household consumption, employment and identified infrastructure investment. The wider section 32 evaluation can build on this evidence by considering the environmental, social, and cultural effects that are most appropriately assessed qualitatively or through other supporting information. Relevant considerations include:

- Opportunity costs
- Costs on surrounding landowners
- Housing affordability
- Cultural costs
- Infrastructure costs
- Other costs of growth

This report focuses on monetising the infrastructure costs based on information from TDC's infrastructure planning team, as well as describing how the other noted costs may be impacted by PC81. In addition to the monetised costs of infrastructure, there are likely to be other economic impacts due to PC81.

Opportunity costs

Opportunity costs are more salient where PC81 enables brownfield intensification rather than greenfield expansion. For example, increasing development potential from around 15 dwellings per hectare to 25 or 50 dwellings per hectare may accommodate additional residents and generate

substantial economic benefits. However, this growth may also involve displacing an existing use, redeveloping land that already has productive or residential value, or replacing lower-density housing with higher-density housing. In those cases, the value of the existing use represents a real opportunity cost and should be considered when assessing the net benefit of the change.

For the purpose of this analysis, this issue is best addressed at the aggregate level. The benefits counted should relate to the net additional population, households, and business activity accommodated within the region as a result of PC81, rather than the gross increase in development capacity on individual sites.

Costs on landowners

When the zoning of land changes, the value of the land is affected because it changes its potential uses. For PC81, the majority of zoning changes allow for less restrictive use of land.

The future zoning is more permissive than the current zoning and therefore will appreciate the value of the land, because it allows the land to be used more productively for housing, on the assumption that there is unmet demand for housing in this location. In total, there are approximately 970 ha of land that are being "upzoned". This land would be expected to be more valuable, based on the expanded possibility of use, than it is under existing zoning.

In areas where upzoning occurs in locations with strong underlying demand, land values are expected to increase as a result of greater development potential. These gains may be partly offset by lower relative land values in locations that become less attractive under the revised plan.

To the extent that PC81 reallocates development opportunity from less preferred locations to more desirable and productive locations, the resulting change in land value primarily represents a transfer between landowners rather than a net economic cost.

The relevant welfare gain is the productivity and amenity benefit, associated with enabling more households and businesses to locate in places where they derive greater value than would have been possible under the previous plan.

Approximately 970 hectares can reasonably be expected to have greater development flexibility under PC81. Approximately seven hectares can reasonably be expected to have less flexibility and potentially lower land value. On this basis, the landowner value effects are expected to be positive for most affected land, although the impact will vary by site.

Housing affordability

Zoning changes can impact housing affordability. When the building of new housing is unduly restricted or onerous, the price of housing can be higher than it would be in a well-functioning market (Glaeser & Gyourko, 2002).

PC81 increases the capacity to build more and different types of housing in the district, including townhouses and other medium-density dwellings. Improving development capacity, and housing choice, is expected to ease some pressure on housing affordability relative to a situation where these zoning changes do not occur. However, the size of the effect will depend on market uptake, construction costs, and infrastructure delivery.

Other costs of urban growth

Urban growth creates opportunities to improve transport, open space, community facilities, and environmental outcomes as development proceeds. Potential effects such as congestion, construction disruption and local amenity change can be addressed through the location, timing, and form of development, supported by appropriate infrastructure and planning measures.

For this assessment, these wider effects are discussed qualitatively, while the quantified cost analysis focuses on infrastructure information supplied by Tasman District Council. Bringing the economic results together with the broader environmental, social, cultural, and amenity evidence will support a balanced view of how PC81 can enable growth while managing pressures on transport networks, natural systems, and community infrastructure.