



FUTURE PROOFING PUNAKAIKI PROGRAMME BUSINESS CASE AND MASTER PLAN

PREPARED FOR BULLER DISTRICT COUNCIL

December 2018

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Executive Summary

Punakaiki is a small settlement located on New Zealand’s West Coast, midway between Westport and Greymouth. The village has around 100 permanent residents and is surrounded by Paparoa National Park and Punakaiki Marine Reserve. Punakaiki is the most visited natural attraction on the West Coast, with the Pancake Rocks at nearby Dolomite Point, just south of the township, being the iconic attraction.

The scale of tourism in Punakaiki is placing considerable pressure on existing infrastructure; during peak periods, up to 6,000 tourists visit the area each day. Existing water and wastewater systems are basic and under strain from the growing tourism demand; parking at Dolomite Point is at capacity at peak times and there is limited mobile phone coverage. However further demands will emerge with additional visitor growth following the completion of the Paparoa Track Great Walk in 2019, a purpose-built track for walkers and mountain bikers that terminates at Punakaiki. In addition to these pressures from visitors, sections of the village and state highway are vulnerable to storm surge, coastal inundation and rockfalls. These natural events reduce the area of usable land to service growth and at times reduce access to services and destinations.

Development of a Strategic Case

Representatives from Buller and Grey District Councils, the Department of Conservation, NZ Transport Agency, iwi and a local resident identified the following problems, benefits and opportunities at a facilitated workshop as shown in the table below.

Problems, Opportunities and Benefits identified at the stakeholder workshop.

Problems	Opportunities	Benefits
Existing services and infrastructure are vulnerable and unable to meet current demands, putting people’s health, safety and the reputation of the community at risk (50%)	Integrated planning and management	Improved health and safety
The sheer volume of visitors is leading to degradation of Punakaiki’s unique natural environment, diminishing the visitor experience and community wellbeing (30%)	Maintain and enhance natural values	Resilient community
There is a small and diminishing area of land that can be used to service visitor demand reducing the long-term viability of the community (20%)	Enhanced tourism offering	Positive visitor experience
		Sustainable economy

In general, there was strong evidence to support most aspects of agreed problems to support the case for investment. There was also a strong alignment with multiple national, regional and local strategies, particularly in relation to health, tourism and regional economic development.

There was anecdotal evidence that individual sewerage systems exceed capacity at peak times with sewage overflows occurring, resulting in environmental damage and health risks for residents and visitors. However, there was no known records or data available to validate this information, hence a method for recording the frequency of these incidents is required to fill this evidence gap. While the case for investment in Punakaiki’s sewage system is not considered as critical as resolving Punakaiki’s water quality issues, there may be opportunities to integrate the delivery of community water and wastewater schemes in conjunction with the Dolomite Point development.

The evidence highlights that the small ratepayer base cannot continue to pay for infrastructure to meet the needs of the growing number of visitors, even with central government subsidies. Significant investment is required to upgrade core infrastructure to meet the current and future demands for both residents and visitors, as well as contributions to the ongoing maintenance and operational costs of these core services.

While some of the identified issues have been ongoing for many years, the scale of visitor growth over the last few years has increased the pressure and urgency to respond. The evidence supported progressing with the development of a master plan that incorporated a programme of improvements to core services and infrastructure immediately.

Programme Business Case and Master Plan Phase

An integrated business case and master plan process was used to develop a framework to address the key issues and demands facing Punakaiki, and outline the investment required to deliver the Community's vision for the future. The master plan identifies a core vision and the long-term aspirations of the community.

A community and stakeholder workshop was held in July 2018 to confirm the vision and develop a long list of possible interventions that could contribute to addressing the agreed problems and achieving the community's future aspirations. This workshop process was structured around key themes to enable participants to focus on one issue at a time and to ensure all issues were covered. Over 160 interventions were identified that were grouped into 11 key service areas including water, wastewater, transport, freedom camping, community centre, natural environment and servicing visitor demand. These interventions were then assigned into eight potential programmes, which in turn were shortlisted through an assessment against investment objectives and implementability criteria into three masterplan programmes.

The recommended programme was generated following a further community engagement workshop in September 2018. This programme is a hybrid of the three draft master plan programmes that were developed. The estimated cost to deliver the recommended programme over time is shown in the table below:

Core Service	Short Term		Medium Term		Long Term		Total	
	(year 1 – 3)		(year 4 -10)		(year 11 – 30)		(30 years)	
	Capex	Annual Opex	Capex	Annual Opex	Capex	Annual Opex	Capex	Opex
Water	\$4,300,000	\$130,000					\$4,300,000	\$390,000
Wastewater	\$30,000	\$5,000	\$1,400,000	\$100,000			\$1,430,000	\$715,000
Transport*	\$8,380,000	\$993,000	\$9,100,000	\$240,000	\$7,500,000	\$240,000	\$24,980,000	\$9,459,000
Community centre			\$500,000	\$30,000			\$500,000	\$210,000
Communication	\$2,920,000	\$100,000					\$2,920,000	\$300,000
Freedom Camping*	\$720,000	\$140,000					\$720,000	\$420,000
Manage Access*	\$5,000	\$1,000					\$5,000	\$3,000
Natural Environment	\$30,000	\$5,000	\$10,000				\$40,000	\$15,000
Coastal erosion			\$5,000,000	\$100,000	\$12,000,000		\$17,000,000	\$700,000
Residential Growth	\$50,000						\$50,000	
Servicing visitor demand*	\$650,000	\$150,000	\$25,800,000	\$100,000			\$26,450,000	\$1,150,000
Total	\$17,085,000	\$1,764,000	\$41,810,000	\$570,000	\$19,500,000	\$240,000	\$78,395,000	\$13,362,000

*Note that some of these interventions have already commenced. Also note that funding pathways for some of the items is to be worked through with NZ Transport Agency early in 2019.

The proposed the programme will deliver:

- 0 days per annum boil water notice by 2023 compared with 217 days of boil water notices in 2017
- Safe access for pedestrians between key sites by 2023
- Compliance with the arterial state highway customer level of service for resilience by 2023
- access for all dwellings to UFB with continuous mobile phone coverage from at least one provider by 2023
- 80% reduction in number of days where litter is present on beaches
- 80% reduction in number of vehicles on beaches at unpermitted sites
- 0 days of water subject to restrictions from 2023 compared to 20 days in 2017
- No more than 20 days where parking demand exceeds supply from 2023
- 14 public toilets in 2021 in Punakaiki, compared with 3 public toilets in 2018
- \$20.5M annual visitor expenditure in 2049 compared with \$3.38M in 2017.
- 120 part time and permanent employees in Punakaiki by 2049 compared to 55 in 2017
- Financial provision and a long term relocation plan for all properties affected by coastal erosion by 2030

In addition to the above, a high level economic assessment of the recommended programme determined that implementation of the Programme would generate additional employment, household income, and economic activity for the region. Other beneficial factors were also identified including improved health outcomes and safety conditions, increased local recreational opportunities, environmental enhancements and improved social interaction opportunities. These benefits indirectly impact future economic and social development in Punakaiki. The economic assessment determined that the overall benefit-cost ratio for the proposed programme for the 30-year period lies within the range 2.5-3.0.

The business case recommends the following next actions:

Theme	Actions:
Water	<ul style="list-style-type: none"> Seek funding from the Provincial Growth Fund to commence a Detailed Business Case for Punakaiki's water supply in 2019.
Climate change impacts	<ul style="list-style-type: none"> BDC to collaborate with the Transport Agency to develop a long-term plan for the protection of SH6 in the region BDC to prepare a long-term evacuation plan that includes a needs analysis for the relocation of the township.
Freedom Camping	<ul style="list-style-type: none"> BDC to monitor success of short-term initiatives to inform future plans and initiatives GDC to develop a local bylaw to ban freedom camping from Punakaiki River to McMillan Road BDC to continue to engage with key agencies to develop a consistent freedom camping solution for the region
Community Centre	<ul style="list-style-type: none"> BDC to continue to work with local residents and DOC to develop a community facility for Punakaiki
Transport	<ul style="list-style-type: none"> BDC to engage with the Transport Agency to progress key actions from the business case and identify way forward.
Wastewater	<ul style="list-style-type: none"> BDC to undertake a comprehensive audit of existing wastewater systems and issue notices to achieve compliance. BDC to investigate options (solutions and funding) to provide a community-wide wastewater system.
Other initiatives	<ul style="list-style-type: none"> BDC to develop an action plan of work to deliver the remaining interventions. This is likely to cover actions for advocacy, changes to planning mechanisms as well as budgetary items to be considered through Council's Annual Plan and Long Term Plan processes. Council to engage with service providers such as NZ Post and mobile phone providers

Funding is being sought from a number of key stakeholders, with the aim to deliver the overall Masterplan vision. The estimated cost to improve and deliver core services, and the possible funding sources are summarised in the table below:

Core Service	Total		Possible funding contribution	
	(30 years)		Capex	Annual Opex
	Capex	Opex		
Water	\$4,300,000	\$390,000	MBIE	MBIE, BDC
Wastewater	\$1,430,000	\$715,000	MBIE	MBIE, BDC
Transport	\$24,980,000	\$9,459,000	NZTA, MBIE, BDC, GDC	NZTA, BDC, GDC
Community centre	\$500,000	\$210,000	MBIE	BDC
Communication	\$2,920,000	\$300,000	Private sector	Private sector
Freedom Camping	\$720,000	\$420,000	MBIE	MBIE, BDC
Manage Access	\$5,000	\$3,000	BDC	BDC
Natural Environment	\$40,000	\$15,000	BDC	BDC
Coastal erosion	\$17,000,000	\$700,000	MBIE, NZTA, BDC, GDC, Unknown Central Government	NZTA, BDC, GDC

Core Service	Total		Possible funding contribution	
	(30 years)			
	Capex	Opex	Capex	Annual Opex
Residential Growth	\$50,000		BDC	
Servicing visitor demand	\$26,450,000	\$1,150,000	DOC, MBIE, BDC	DOC, BDC
Total (30 years)	\$78,395,000	\$13,362,000		

The integrated programme business case and master plan for the greater Punakaiki area is a framework for Council and other key stakeholders to address the key issues and demands facing Punakaiki, and opportunities to realise the community's long-term aspirations in a coordinated way. It will:

- integrate planning and investment for the area;
- provide certainty for investors (public and private);
- ensure efficient use of limited land and explore options that allow for growth within a limited footprint;
- ensure infrastructure and facilities can meet current and projected future demand; and
- enhance and protect the natural environment.

It is recommended that an appropriate governance framework is put in place to oversee the integrated delivery of the proposed improvement programme, particularly over the next 10 years.

Buller District Council

Future Proofing Punakaiki

Programme Business Case and Master Plan

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1. Introduction

The Programme Business Case provides the case for investing in the proposed Punakaiki Master Plan. It presents the strategic case for change to address problems, demonstrates the process that was undertaken to develop and shortlist options to address the agreed problems, and outlines the timing, funding and mechanisms to deliver the proposed change. The Programme Business Case (Part B) identifies a preferred option, which is supported by the Punakaiki Master Plan.

The Strategic Case presented in Part A:

- Identifies the scale and scope of the problems by interrogating the evidence.
- Articulates the benefits and opportunities that will be realised as a result of addressing the problems.
- Shows how the master plan aligns with, and can contribute to, overarching national, regional and local objectives.
- Introduces stakeholders and their areas of interest.
- Outlines the next steps through critical, evidence-based decision making.

The business case allows relevant agencies to make an informed decision about infrastructure improvements and presents what investment the community is seeking to support the proposed changes.

Part A – Strategic Case

1.1 Background

Nestled at the foot of the Paparoa National Park, the small coastal town of Punakaiki is home to nearly 100 permanent residents. The town is midway between Westport and Greymouth on the Coast Road (State Highway 6), which is regularly cited in tourism publications as a spectacular coastal highway. Punakaiki is one of the most visited conservation areas in New Zealand, with the Pancake Rocks at nearby Dolomite Point, just south of the township, being the iconic attraction.

The scale of tourism in Punakaiki is placing considerable pressure on existing infrastructure; during peak periods, up to 6,000 tourists visit the area each day. Existing water and wastewater systems are basic and under strain from the growing tourism demand; parking at Dolomite Point is at capacity at peak times and there is limited mobile phone coverage. As a result, the Department of Conservation (DOC) are planning to redevelop the visitors centre site to accommodate growth and create a world-class visitor experience at Punakaiki. The project includes expanding the car park and changing the road and footpath alignments. However further demands will emerge following the completion of the Paparoa Track Great Walk in 2019. The Track will be a purpose-built track for walkers and mountain bikers that terminates at Punakaiki, further increasing the number and diversity of visitors to the area.

In addition to these pressures from tourism, sections of the village and highway are vulnerable to storm surge, coastal inundation and rockfalls. These natural events reduce the area of usable land to service growth and at times reduce access to services and destinations. The Council has funded seawall and rock protection works in the past, but the small ratepayer base makes it challenging to fund upgrades as well as ongoing operational costs of core infrastructure. These issues were identified in the West Coast Economic Development Action Plan (2017), which was a key driver for the development of this Strategic Case (refer to Figure 1-1).

The proposed DOC development of Dolomite Point and the recent media coverage of Punakaiki's drinking water quality issues provides an ideal opportunity to explore options to potentially integrate the delivery and/or improvements to core infrastructure. Buller District Council (BDC) are working in partnership with central government, local businesses and the community, with the aim of securing basic services and ensuring the infrastructure in Punakaiki can meet current and projected needs.



Future proofing Punakaiki

Punakaiki faces several major challenges due to the growth in tourism. There is the obvious challenge of the pressure on current infrastructure. Despite infrastructure improvements over the years, some elements, such as parking and toilets, are currently struggling to cope with visitor numbers and will certainly not cope with predicted future increases.

The existing visitor centre is dated and provides limited conservation, education or commercial offerings. In addition, the Punakaiki community faces difficulties associated with short visitor stays and seasonality. There are relatively few experiences and accommodation options that would encourage visitors to stay in and around the area for longer. The more limited visitor numbers in the winter months also impact on the sustainability of the local community and businesses.

The focus of this action is two-fold:

- To make initial essential infrastructure improvements (i.e. car parking and toilet improvements and the safety of visitors crossing SH6)
- To advance a detailed scoping, design and business case for developing Punakaiki as a world class destination. This will include consideration of raising revenue streams from visitors to support the capital costs of infrastructure.

The scoping and design work will include a collaborative planning exercise with stakeholders and community representatives.

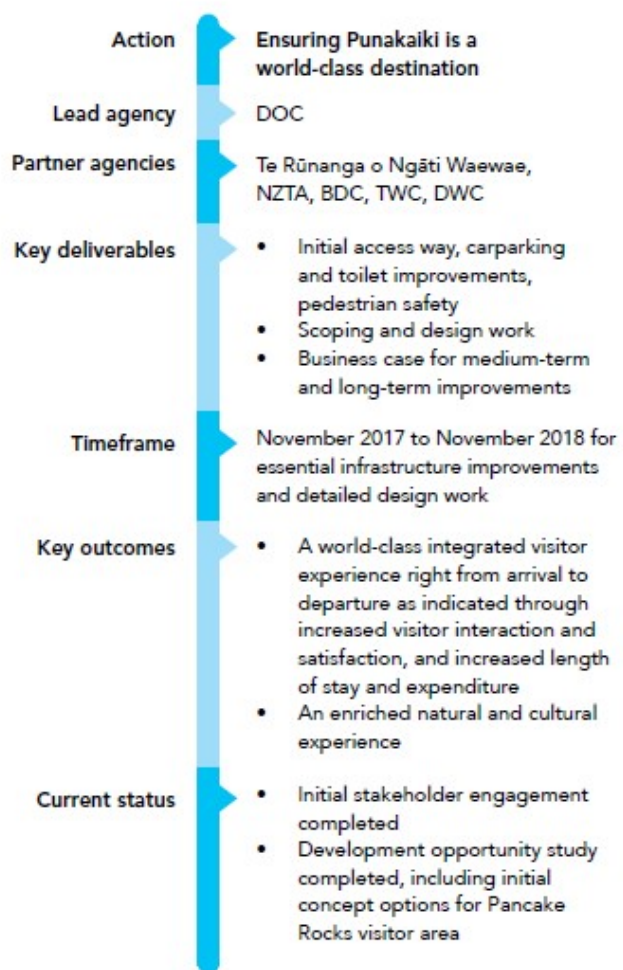


Figure 1-1: Excerpt from the West Coast Economic Development Action Plan highlighting the need for investment in Punakaiki's infrastructure

1.1.1 Previous Studies

Numerous studies and plans have been prepared previously that explore some of the key issues and challenges facing Punakaiki. These include:

- **Punakaiki Destination Management Plan 2008.** The Destination Management Plan defines the vision and strategies to guide future actions and decision-making of key agencies relating to activities and infrastructure that affects the tourism industry. It collates the actions of the community, District and Regional Councils, DOC, NZ Transport Agency, Development West Coast, iwi and Tourism West Coast to meet and address the challenges faced by this community.
- **Dolomite Point – Development Opportunity Study 2017.** This study focuses on the future development of Dolomite Point and provides indicative concepts, as well as detailed action plan for development of the area. The study identifies key growth opportunities including integrated visitor facilities, expanded road network and car parking, accommodation and additional attractions.
- **New Visitor Centre at Punakaiki: Concept Plan - Civil Inputs.**
- **Punakaiki Water Supply Scheme – Water Safety Plan.** The Water Safety Plan sets out the means by which Buller District Council intends to meet the requirements of the Health (Drinking Water) Amendment Act 2007, which includes meeting compliance with the Drinking Water Standards NZ, and the timeframe of achieving this.
- **Punakaiki Sewerage Scheme - Review of Options 2008.** The purpose of this report was to assess options for a sewerage scheme for Punakaiki to enable the Council to decide whether to accept financial assistance through the Tourism Demand Subsidy Scheme, given there were concerns regarding the ongoing affordability of the scheme.
- **Punakaiki Community Facility – Community Needs Assessment 2018.** This report assesses the need for a community facility in Punakaiki, and summarises the outcomes of a community survey, including the potential functions and benefits that a facility would provide for Punakaiki.
- **Ministry of Health Havelock North Drinking Water Inquiry (Stage 2) 2017.** The Ministry of Health (MoH) report of the Havelock North Drinking Water Inquiry (Stage 2) identified the scale of the public health risk of poor quality drinking water in New Zealand. The report was triggered by an outbreak of gastroenteritis affecting 5500 people in Hawkes Bay, including three suspected deaths as a result of E. Coli contamination. The MoH report singled out the issues faced at Punakaiki, given that its water supply does not always comply with DWSNZ. The potential exposure of nearly half a million tourists to non-compliant drinking water magnifies the risk and cost of waterborne disease outbreak for New Zealand. The report recommended that improvements are urgently required to deliver safe drinking water as the risk of doing nothing is too high.

Some of these documents have been used to inform and develop the evidence to support this business case.

1.2 Study Area

The development of a business case and master plan to provide a framework to meet existing demands and provide for future growth covers the 'Greater Punakaiki' area. This has been defined by Buller District Council and stretches from Fox River to Barrytown (as depicted in Figure 1-2), with an emphasis on the area between Irimahuwhere Lookout to Razorback Ridge. This central area is where there is most pressure on facilities as a result of tourism activity.

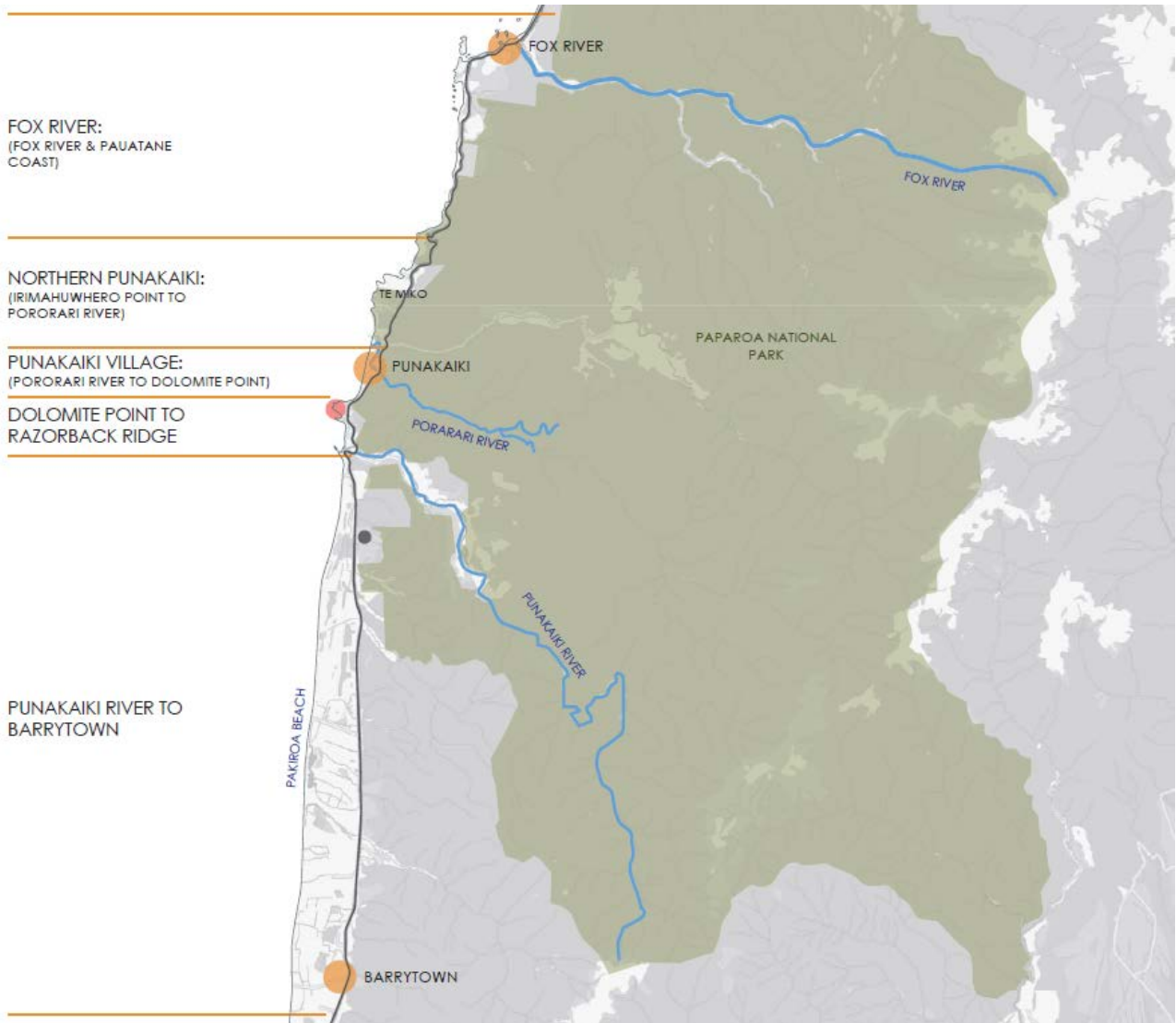


Figure 1-2: The Greater Punakaiki study area

2. Context

2.1 Transport

Punakaiki is accessed via State Highway 6, which provides the dual function of providing for through movements for regional journeys along the West Coast, as well as for local journeys to support residential and commercial activities. The Highway forms part of the West Coast Heritage Highway and provides visitors with an opportunity to experience the dramatic scenery of this coast road. Within Punakaiki, a footpath is available on the seaward side of the road between Dolomite Point and Pororari River. No cycle or public transport facilities are provided.

The highway consists of two lanes and a narrow shoulder (in parts), and the posted speed limit varies throughout the area, ranging from 50km/h in Punakaiki village to 100km/h on the outskirts of town (Figure 2-1 depicts the variability of speed limits in and around Punakaiki).



Figure 2-1: Pasted speed limits in and around Punakaiki

The average traffic volume measured at the telemetry site near Canoe Creek (south of Punakaiki) is just over 1100 vehicles per day. Nearly 12% of the vehicle traffic is made up of heavy vehicles; a substantial portion of this heavy vehicle traffic is likely to be tour buses and coaches visiting key attractions along the coast. Over the last five years, the traffic volume has grown by over 5% per annum, however traffic volumes in 2017 are on par with those measured in 2008, with minimal overall growth over the last 10 years (refer to Figure 2-2). The 2008 Global Financial Crisis (GFC) and the Christchurch earthquakes in 2010 and 2011 were all likely to have had an impact on the decline in tourism in New Zealand's South Island, and subsequent traffic volumes in areas dependent on the tourism market. Since 2013, traffic volumes have been growing rapidly, and these trends are expected to continue.

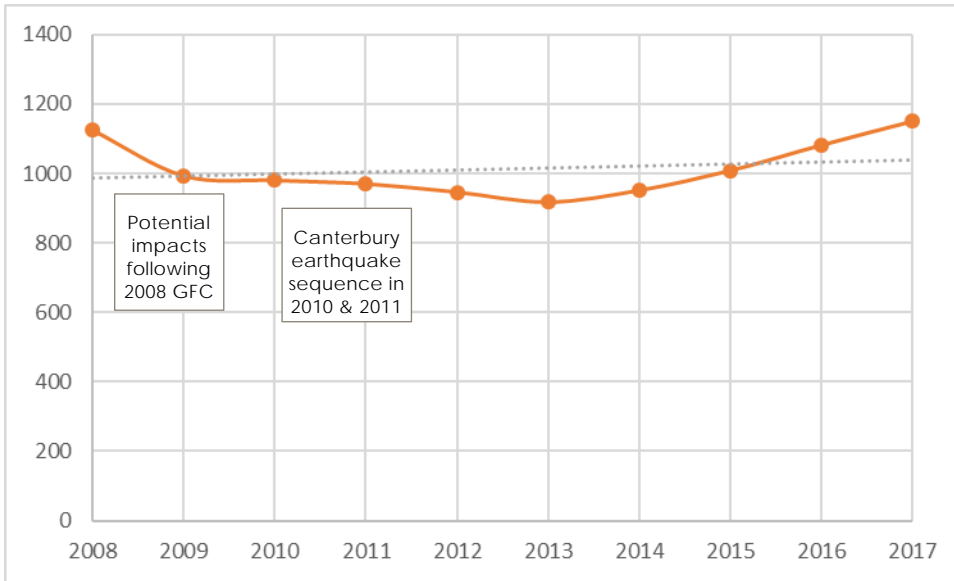


Figure 2-2: Traffic volume on SH6 (near Punakaiki) between 2008 and 2017

There is strong seasonal variation in traffic volumes in the area as a result of the high volumes of tourists visiting key attractions along the route over the summer. Traffic volumes range from 733 vpd in August to 1665 vpd in February.

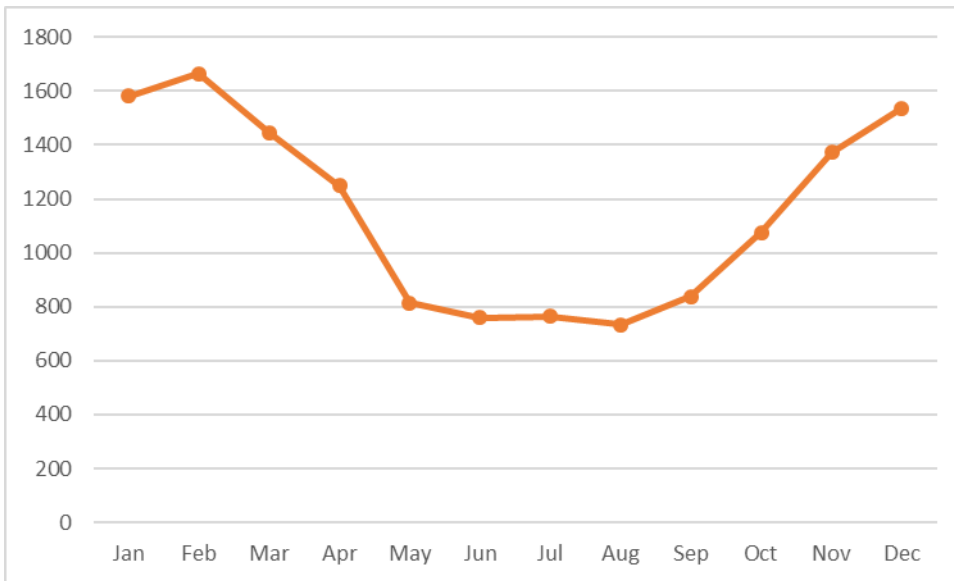


Figure 2-3: Seasonal variation of traffic volumes on SH6 in 2017 (Punakaiki telemetry site)

The highway is classified as an Arterial Highway through the One Network Road Classification (ONRC). Arterial highways are defined as roads that "make a significant contribution to social and economic wellbeing, link regionally significant places, industries, ports or airports and may be the only route available to some places within the region (i.e. they may perform a significant lifeline function)".

2.2 Water

Punakaiki's water scheme (first installed in 1987 and then upgraded in 2011) supplies drinking water to Punakaiki village and the Te Miko area north of the village (93 residential and 8 commercial properties based on the BDC Long Term Plan 2018-21 number of rateable properties). However, this supply does not extend to the tourist destinations and accommodation near Dolomite Point, south of the village. Commercial operators at Dolomite Point source drinking water via a DOC supply or their own water supply (such as rainwater tanks).

The water supply for Punakaiki's community water scheme comes from the Smith Creek catchment, however the exact source of the water is unknown. The intake of the supply however is on private land; there is no formal agreement with this land owner, which adds risk to the security and vulnerability of the community's water supply.

At times, the catchment is subject to elevated sediment loads, resulting in high turbidity and water discolouration. When the turbidity of raw water exceeds the capability of the existing water treatment plant (5 Nephelometric Turbidity Units - NTU), the water treatment plant is programmed to shut down. Currently, there is storage capacity for up to three days of treated water supply (dependent on seasonal tourist population); raw water may be introduced into the reservoir to ensure continuity of supply. As this raw water is not treated, a Boil Water Notice (BWN) is issued due to risk of E. coli contamination. A schematic diagram of Punakaiki's water supply is show in Figure 2-4 below.

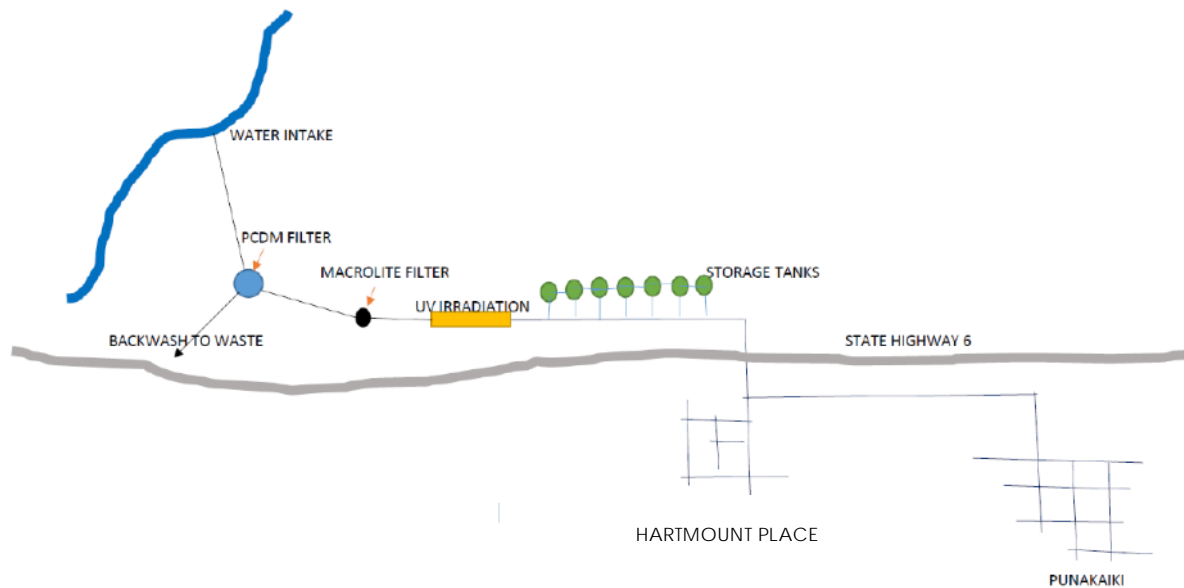


Figure 2-4: Schematic diagram of Punakaiki's water supply

Ensuring BDC's water supplies provide reliable and adequate safe drinking water is a core function of the Council. Council must comply with relevant policy and legal requirements including Health (Drinking Water) Amendment Act 2007 (the Act) and Drinking Water Standards of New Zealand 2005 (rev. 2008 - DWSNZ). In 2008, a new water supply scheme was proposed, taking water from Punakaiki River. The new water scheme was designed to accommodate growth, and provide reticulated water for the entire area, including the tourist areas at Dolomite Point. Funding subsidies were received to install the scheme, however ongoing operational, maintenance and depreciation costs were cost prohibitive for the small ratepayer base, and subsequently the scheme did not proceed.

Water for the DOC visitors centre at Dolomite Point is supplied via two intakes located in the forest behind the visitor centre and is untreated. Following storm events, high levels of tannins discolour the water, with adverse aesthetic effects. Storage tanks overflow when full, and water pressure at the visitor centre is always low.

2.3 Wastewater

Residents and businesses in Punakaiki individually manage their wastewater, relying on septic tanks and package plants. During peak periods, excessive demand from visitors means that there is insufficient capacity for some wastewater systems. Failure of these systems results in public health and aesthetic issues including overloaded or clogged soil soakage systems, sewage overflows, foul odour and contamination of surface water.

The existing wastewater treatment plant (WWTP) at the DOC visitor centre at Dolomite Point is effective and currently has spare capacity based on existing numbers to the visitor centre. However, the extent of the proposed DOC visitor centre redevelopment means that the WWTP will most likely need to be relocated to accommodate the proposed changes.

2.4 Stormwater

In Punakaiki, the only public stormwater drain is maintained by the Transport Agency as part of their roading network. There are no other formal stormwater systems in the village; stormwater simply soaks into the ground naturally.

2.5 Economic

The growth in tourism in New Zealand over the last three years has exceeded all forecasts. Tourism is now New Zealand's largest export earner, overtaking the dairy industry in 2015/16. Forecasts by MBIE predict that there will be 4.9 million international visitors by 2023. The West Coast has experienced a surge in visitors to the region as a result of this growth, fuelled to some extent by the closure of State Highway 1 following the Kaikoura earthquake in 2016.

Visitors come to Punakaiki to enjoy the natural environment and discover the area's rich heritage. The Pancake Rocks and blow holes are located at Dolomite Point in Punakaiki, the most visited natural attraction on the West Coast¹. During January 2017, 81,619 people were recorded on the Dolomite Point Track at Punakaiki, nearly 15% more than January 2016. In the 2016/17 year, there were over half a million visitors to the track (refer to Figure 2-5).

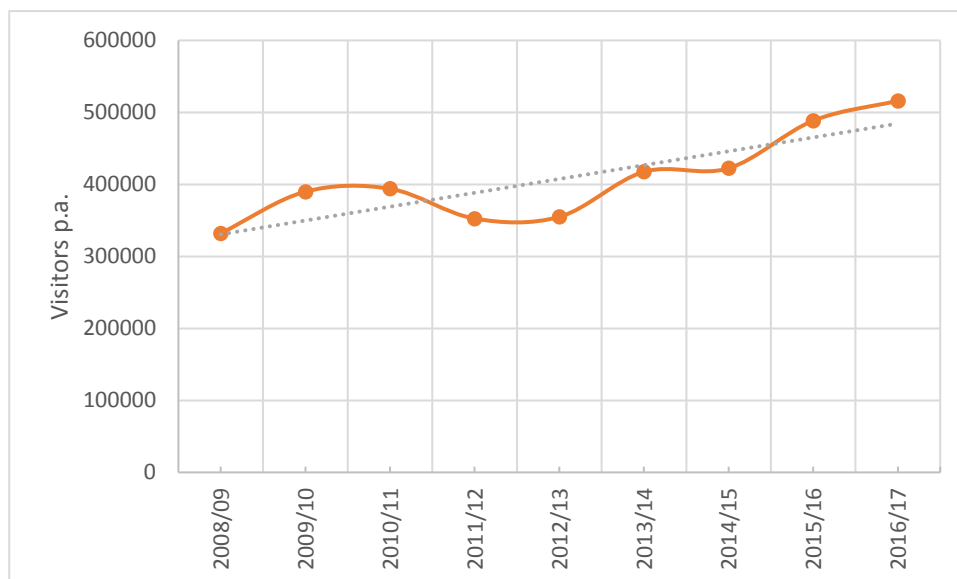


Figure 2-5: Visitors to Dolomite Point (Source: DOC track counter – shown with long term trendline)

Most tourists only spend a few hours in Punakaiki, visiting Dolomite Point and the local café. Limited accommodation is available either side of Dolomite Point, with formal offerings including hostels, motels, a resort and a camp ground. However there has been growth in more informal options, including Air BnB and freedom camping. The increasing numbers of visitors contribute to the local economy and improve the viability of local businesses. However, the success in growing tourism is placing pressure on core infrastructure, services and facilities, as well as the natural environment.

2.6 Social

The population of Punakaiki is declining, with just 90 residents recorded at the 2013 census. In 2006, Punakaiki had a population of 99 residents, while in 2001 there were 114 residents. The demographics of the community is also changing, with a decline in the number of children and people of working age, but an increase in the number of people aged over 65 living in Punakaiki (refer to Figure 2-6).

Many of the vacant properties are leased as short-term accommodation to tourists through websites including Air BnB and Bookabach, changing the dynamics of the local community.

¹ www.westcoast.co.nz

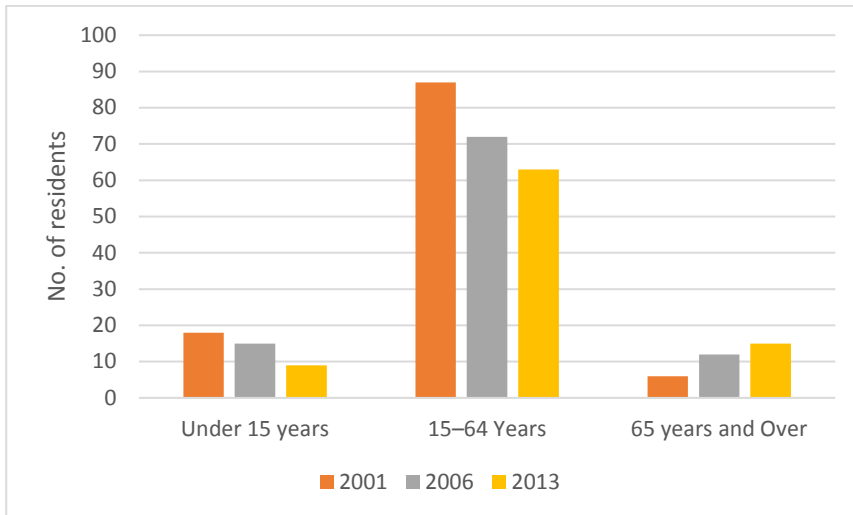


Figure 2-6: Comparison of the age demographics of residents in Punakaiki between 2001 and 2013 (Source: NZ Stats)

The community of Punakaiki extends beyond the village and Dolomite Point, with residents from a number of small settlements along the coast identifying as belonging to Punakaiki. These include Te Miko, Fox River, Canoe Creek and Whitehorse Hill. However, there are no community facilities or buildings within any of these villages, making it difficult to provide community events and activities, as well as opportunities to foster relationships between residents. The lack of a central public building also means that the community does not have a Civil Defence Centre to accommodate residents as well as isolated visitors in the event of an emergency.

In the past, the median household income for residents in Punakaiki was higher than the median household income in the Buller District. As of 2013, the median income for Buller District has overtaken that of Punakaiki, but essentially are close to parity. Overall however, the median income for the region is substantially lower than the NZ median income.

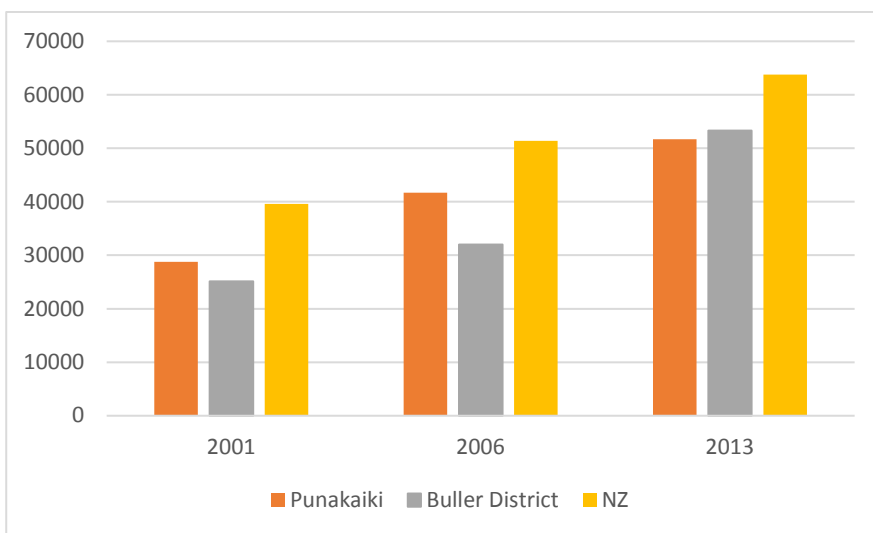


Figure 2-7: Comparison of median household incomes in Punakaiki, Buller District and New Zealand between 2001 and 2013 (Source: Stats NZ)

Punakaiki Village (located in the Charleston census area unit) has a socioeconomic deprivation (SD) index of 5, where a score of 10 represents the most deprived areas of New Zealand. The SD index uses census data to reflect different dimensions of deprivation, including income, qualifications, employment, home ownership and access to communication and transport. The area immediately south of the Punakaiki River (located within the Barrytown census area unit) has a SD index of 6.

There are no local schools in Punakaiki; the closest primary school is at Barrytown (16km to the south), and the nearest secondary schools are located at Greymouth (45km south) or Westport (56km north). Similarly,

there are no medical facilities or supermarkets in Punakaiki; residents must travel to Greymouth or Westport for medical treatment and groceries.

The low ratepayer base means the Council must balance providing and operating core infrastructure against ensuring rates are affordable for residents. This has led to a lack of investment in core infrastructure. In 2006, BDC was successful in its application to the Tourism Demand Subsidy Scheme (TDSS), securing \$2.2M for wastewater collection and treatment, and \$1.1M for water treatment and supply for Punakaiki. This central government funding for capital investment was regrettably declined as the ongoing operational costs would have led to unaffordable rates increases for residents.

2.7 Geographic and Environmental

Punakaiki is situated between the Paparoa National Park and the Punakaiki Marine Reserve and is a highly-valued unique and natural environment. Limestone underlies much of the landscape and forms towering coastal cliffs, deep river canyons and numerous caves including the Ballroom Overhang and Punakaiki Cavern. Pancake Rocks at Dolomite Point is the area's best known geological feature, consisting of stacked limestone rocks and active blowholes at high tide.

Vegetation in and around Punakaiki village is predominantly coastal temperate rain forest, featuring rata, nikau, kei kei and other broad-leaf species. These forests are of high scenic value and are typical in the reserve areas at Dolomite Point and Truman Reserve. The beach zone is dominated by grasses, flax and coastal herbs, while the Paparoa Ranges feature beech/podocarp forests.

New Zealand's only breeding population of tāiko/Westland petrel lies within the cliffs of the Paparoa National Park and are taonga species to Ngāi Tahu/Ngāti Waewae. A Specially Protected Area located south of Punakaiki village was gazetted in 1999 to protect the tāiko population and habitat, limiting public access. A restricted airspace has also been established around the Specially Protected Area to protect and preserve the petrel flight paths between the sea and the colony. The population is considered healthy, with around 4,000 breeding pairs, however feral cats, possums and uncontrolled dogs and goats pose threats to the population².

Punakaiki is susceptible to climate change, with coastal erosion and inundation threatening the township and sections of the State Highway. These natural events reduce the area of usable land to service growth and at times reduce access to services and destinations. Ongoing seawall and rock protection works aim to protect low lying areas including the campground and parts of Punakaiki Village, however sea level rises are predicted, raising the risk of storm surge and inundation (refer to Sections 3.2.3 and 3.4.3 for further information).

“Everyone has heard a lot about climate change particularly in the last few years. We know it means we will be facing more weather extremes such as droughts, floods and storm surges in the future, and more often.”

Buller Long Term 2018 - 28

² <https://www.doc.govt.nz/about-us/our-policies-and-plans/statutory-plans/statutory-plan-publications/national-park-management/paparoa-national-park-management-plan/part-two/>

3. Outlining the need for investment

3.1 Defining the problems and opportunities

A facilitated workshop was held in June 2018 to identify the key problems facing the community of Punakaiki, as well as potential opportunities and benefits of investment. Representatives from Buller and Grey District Councils, the Department of Conservation, NZ Transport Agency, iwi and a local resident attended the workshop. The representatives agreed on the following three key problems (weightings shown in brackets), and three opportunities for the project.

- **Problem 1:** Existing services and infrastructure are vulnerable and unable to meet current demands, putting people's health, safety and the reputation of the community at risk (50%)
- **Problem 2:** The sheer volume of visitors is leading to degradation of Punakaiki's unique natural environment, diminishing the visitor experience and community wellbeing (30%)
- **Problem 3:** There is a small and diminishing area of land that can be used to service visitor demand reducing the long-term viability of the community (20%)
- **Opportunity 1:** Integrated planning and management
- **Opportunity 2:** Maintain and enhance natural values
- **Opportunity 3:** Enhanced tourism offering

An investigation into available evidence has been undertaken to verify the problem statements agreed by stakeholders that will be used to determine the way forward. The evidence to support each problem is presented below.

3.2 Problem 1

Existing services and infrastructure are vulnerable and unable to meet current demands, putting people's health, safety and the reputation of the community at risk.

A number of core services in Punakaiki such as water, sewerage and transport are at risk of failure, and at times are unable to meet the demands of the community and visitors. Previous studies have explored indicative options and costings to upgrade core infrastructure to support the needs of visitors. However, the Council and the community have decided that the ongoing operating and maintenance costs required would make rates unaffordable for residents, even with central government subsidies to fund capital costs.

The issues relating to each of these services is described below.

3.2.1 Water

In the past, two to three Boil Water Notices (BWNs) were triggered per annum in Punakaiki, each lasting for several days. However, in December 2016 a major deterioration in raw water quality was detected, with turbidity measurements spiking above 100 NTU. Treated water supplies were soon depleted, triggering a BWN to be issued. The high turbidity levels were sustained for six months, which was an unprecedented period for a BWN in Punakaiki. Since January 2017 (to June 2018), Punakaiki has experienced 49 weeks of BWNs.

While the community has been patient with the recurring BWNs, the risk to visitors remains as many will have little or no understanding of the risks of drinking contaminated water. This risk of exposing visitors to contaminated water in Punakaiki was specifically highlighted in the Havelock North Drinking Water Inquiry. The need for clean drinking water will be more pressing following the opening of the Paparoa Track as trampers and mountain bikers will seek drinking water at the beginning and end of their journey.

In addition to water quality, there are also water supply issues. A report³ on the Punakaiki Water Treatment Plant prepared in 2018 demonstrated that over a two-year period (2016 and 2017), the measured average demand for water was 84.2m³/day, while the peak demand was 133.6m³/day. However, the report highlighted that for 40% of the time during the assessment period, the volume of treated water produced was less than 80m³/day. The key constraint limiting the production of treated water is not the flow of water from the creek, but rather the UV treatment and filter within the water treatment plant. Nearly all rainfall events increase turbidity, and more turbid water (up to 5NTU) takes longer to process and treat, therefore reducing the volume of clean water that can be produced on these days.

³ Calibre Consulting (2018). *Punakaiki Water Treatment Plant. WTP Site Assessment Findings & Recommendations*

Seven tanks provide 210m³ of treated water storage. These are relied on when the turbidity exceeds 5NTU, which occurs after large rainfall events, as the water treatment plant is designed to shut down at this threshold. The stored water is also used to supplement the unmet daily flows as discussed above. During periods of drought, water flows are likely to be low and may affect the volume of water that BDC is consented to take from the Creek. These drought periods tend to occur in summer, which coincides with the peak visitor period, and peak demand on the water supply. It is clear that there are risks in ensuring the village has adequate water supply, particularly in peak periods when demand is highest. While water restrictions are rare, they have been triggered on occasion.

Punakaiki's community water supply is funded through a targeted rate paid for by ratepayers living in Punakaiki. BDC allows for funding of capital expenditure through depreciation reserves or loans, however the community has less than 90 ratepayers. As of March 2018, the internal account for the Punakaiki Water Supply had an overdrawn balance of \$104,000, resulting in contributions from ratepayers increasing from \$660 per year in 2017/18⁴ for a single residential dwelling to \$900 per year in 2018/19⁵. This evidence shows that residents are paying for an expensive water scheme which is ineffective and poses a risk to human health.

3.2.2 Wastewater

All residents and businesses in Punakaiki individually manage their wastewater via septic tanks and package plants. The campground has its own wetland system, but this area is being gradually eroded by coastal inundation. A severe weather event may destroy the sewerage infrastructure resulting in the campground's closure and the loss of accommodation for up to 250 people. In 2016, storms and king tides eroded about 11 metres of coastline in front of the campground; further erosion was avoided by the community's sandbagging efforts.

The cost and responsibility of wastewater treatment and disposal is borne by the ratepayers in Punakaiki. This increases the potential public health risk and adverse environmental effects in the event of a malfunction. Individual systems are collectively more land intensive than community treatment systems, and have higher individual operational, maintenance and monitoring costs.

Data on the frequency or location of sewage overflows is unavailable, however various reports and sources have identified that some systems are struggling with peak loads. A report⁶ commissioned in 2008 identified that *"the worst affected area was considered to be around the junction of Owen Street and SH6, although there were also reports of odour problems along the beach area close to Punakaiki Village."* Further information and evidence may be needed to demonstrate that individual wastewater management in Punakaiki is currently a problem that needs addressing.

3.2.3 Transport

The coastal highway (SH6) that provides access to Punakaiki is dramatic and one of New Zealand's most scenic drives. In parts, the highway is carved into steep coastal cliffs; in other sections it passes low lying beaches and dunes. The road is vulnerable to closure (full and partial) as a result of coastal inundation and erosion, as well as rockfalls. Coastal communities between Greymouth and the turn off to Westport (SH67), are solely dependent on access via SH6; any road closure along the route results in a detour of up to 240km via Reefton (SH69 and SH7).

The NZ Transport Agency has produced resilience maps that cover four hazard scenarios; tsunami, earthquake, volcano and storms. The Resilience Prioritisation Maps identify and prioritise areas of focus to maintain or improve the resilience of the state highway network. An overall resilience prioritisation score has been assigned to state highway segments, based on natural hazard risk, however this data also considers the relative importance of the road segment within the network (based on the One Network Road Classification).

For much of Punakaiki, the Resilience Prioritisation Score is high, with the area around Dolomite Point given a moderate score (refer to Figure 3-1).

⁴ <http://bullerdc.govt.nz/wp-content/uploads/2013/07/Final-LTP-2015-2025-with-Audit-opinion.pdf>

⁵ <http://bullerdc.govt.nz/wp-content/uploads/2013/07/FINAL-2018-2028-LONG-TERM-PLAN.pdf>

⁶ MWH (2008). *Punakaiki Sewerage Scheme. Review of Options.*

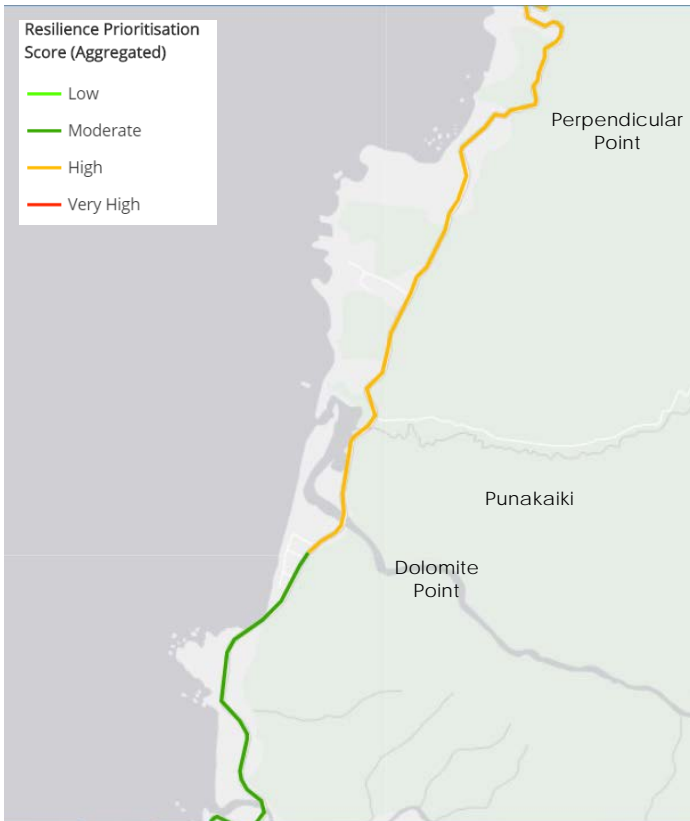


Figure 3-1: Resilience Prioritisation Score highlighting areas of natural hazard risk (Source: NZ Transport Agency⁷)

In February 2018, the west coast was battered by ex-cyclone Fehi. The destructive ex-cyclone brought flooding, high winds and storm surges, resulting in landslips and coastal inundation of low-lying areas. The ex-cyclone severely damaged SH6 between Punakaiki village and Dolomite Point, closing the road for 10 hours. The road was reduced to a single lane until 1st November 2018 while reinstatement works were undertaken.



Figure 3-2: SH6 was subject to storm surges and inundation during ex-cyclone Fehi

⁷ <https://nzta.maps.arcgis.com/apps/MapSeries/index.html?appid=5a6163ead34e4fdab638e4a0d6282bd2>



Figure 3-3: SH6 between Dolomite Point and Punakaiki Village shown immediately after ex-cyclone Fehi (left) and as at June 2018 (right)

In September 2016, a substantial landslip occurred between Punakaiki and Irimahuwhero Point, resulting in around 2,500m³ of debris falling on SH6. The landslip blocked the highway for 2½ days.



Figure 3-4: The scale of the landslip that closed SH6 in September 2016

Between 2013 and 2017 there were four recorded road closures on the section of SH6 between Greymouth and Westport (NZ Transport Agency TREIS data). Three of these were as a result of slips, while the fourth was due to crash in 2015. The duration of these closures ranged from two hours to 7.5 hours. Note that neither of the road closures resulting from the landslip or ex-cyclone discussed above were recorded in TREIS. Any closures on SH6 between Taylorville Road near Greymouth and Wilsons Lead Road near Westport can add up to 235 kilometres to a journey on this portion of SH6.

As weather extremes become more frequent due to the impacts of climate change, the occurrence of slip and inundation events will increase, impacting on properties and core infrastructure. Buller District Council is working with the other West Coast local authorities on strategies for managing natural hazards, and the issue of longer term climate change adaption and mitigation

3.2.3.1 Road safety

Over the past five years there have been 12 crashes in the 'Greater Punakaiki' area, resulting in two serious injuries and five minor injuries. Most crashes result from loss of control; however, one crash was a result of a vehicle hitting an obstruction following a slip/subsidence. Two crashes involved overseas drivers that '*failed to adjust to NZ road rules and road conditions*'. The crash data provided no evidence of a road safety problem relating to pedestrians in the area. However, there is a risk of pedestrian crashes in the future as the number of visitors continue to grow, without supporting infrastructure for pedestrians, particularly in areas with existing speed limits of 100km/h. The Transport Agency has identified a safe and appropriate speed limit of 80km/h along this corridor either side of Punakaiki village.

3.2.3.2 Parking

Increasing numbers of tourists are travelling along the West Coast, with many stopping to visit the natural and accessible attractions of Pancake Rocks and the blowholes at Dolomite Point. The visitor centre provides

parking at two car parks; the northern car park has 38 marked spaces, while the southern car park is unmarked and has capacity for around 50-60 vehicles. There are also 27 on-street car parking spaces and three bus/coach parking zones adjacent to the highway. Overall, there is capacity for around 120 vehicles and five coaches.

Parking demand and occupancy surveys were undertaken at Dolomite Point over six days during the Christmas/New Year period in 2017/18. Figure 3-5 shows parking demand is at its highest in the middle of the day, with up to 160 vehicles recorded at the site. Of the 160 vehicles parked, there were 124 cars, 25 campervans and one coach. This is significantly higher than the available capacity of the parking areas, indicating that cars were parking illegally or in unsafe locations (e.g. on the highway), and potentially blocking other vehicles.

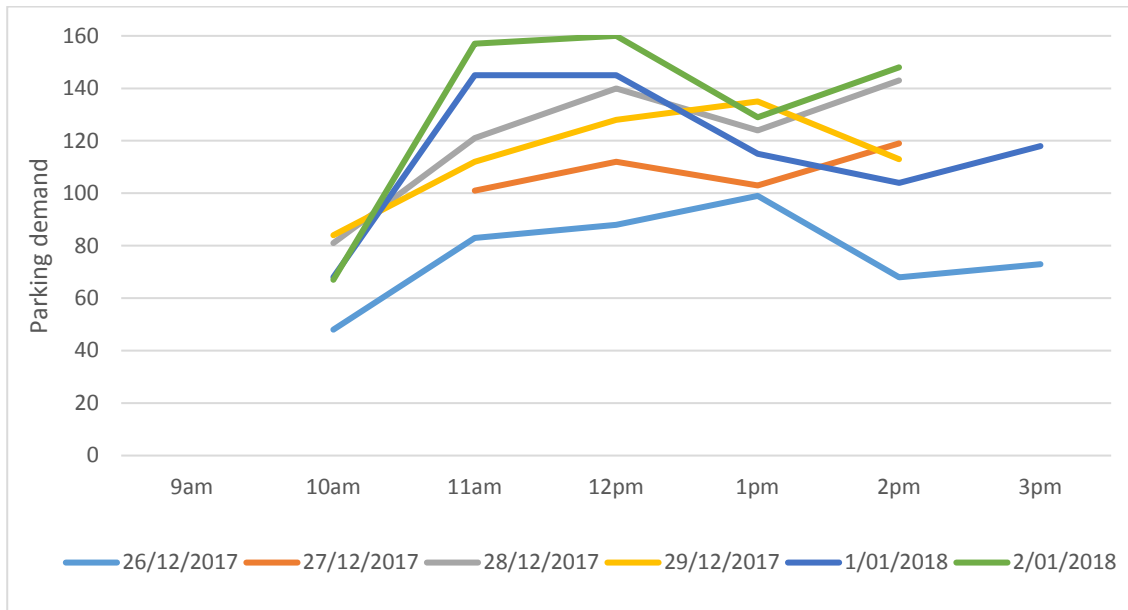


Figure 3-5: Dolomite Point parking demand survey - Christmas/ New Year 2017/18

3.2.3.3 Walking and cycling access

Parking for key tourist sites in the area, including Dolomite Point, the Truman Track and Irimahuwhero Lookout are generally located on the opposite side of the state highway. This results in high numbers of tourists crossing the highway in often unsuitable locations. While the former location has a designated pedestrian refuge and a reduced speed limit (60km/h), the latter two sites have no formal crossing facility and the operating speed limit of the highway is 100km/h. Irimahuwhero Lookout features hairpin bends on either side of the informal parking area, reducing site lines and visibility.

A footpath is provided on the coastal side of the highway between Dolomite Point and Punakaiki Village, however pedestrian access north of Pororari River is via an informal track that veers close to the highway at times. No street lighting is provided north of Pororari River. While there are no recorded pedestrian crashes along the corridor, there is a medium personal crash risk around Dolomite Point and north of Bullock Creek Road. There is the added risk that many overseas visitors are unfamiliar with New Zealand roads and may instinctively look the wrong way when crossing the road.

No cycling facilities are available within the study area.

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Figure 3-6: Access between Pancake Rocks (to the left) and the car park and commercial facilities (to the right) requires crossing SH6



Figure 3-7: Access between the Truman track and the informal car park is severed by SH6.

3.2.4 Communication

Cell phone coverage is very patchy through Punakaiki, and generally restricted to the Dolomite Point visitor centre area. Coverage of the area by the two main providers (Vodafone and Spark) is shown in Figure 3-10. Limited coverage can make it difficult for visitors to access information, and more importantly, difficult to call for assistance in the event of an emergency. This may put the health and/or safety of visitors and residents at risk as delays in emergency response may increase the severity and scale of the issue.

Broadband is currently supplied to Punakaiki village and properties at Punakaiki River mouth via copper landlines (VDSL - 20-50Mb/s). The schedule to deliver UltraFast Broadband fibre (1000Mb/s) to Punakaiki village is yet to be confirmed but will be completed by 2022. An existing transmission fibre passes through Punakaiki, linking Westport to Greymouth. Connecting the existing transmission fibre to the visitor's centre (located approximately 250 metres away) is relatively straightforward and can deliver a UFB-type broadband service to the visitors' centre (estimated cost \$50,000).

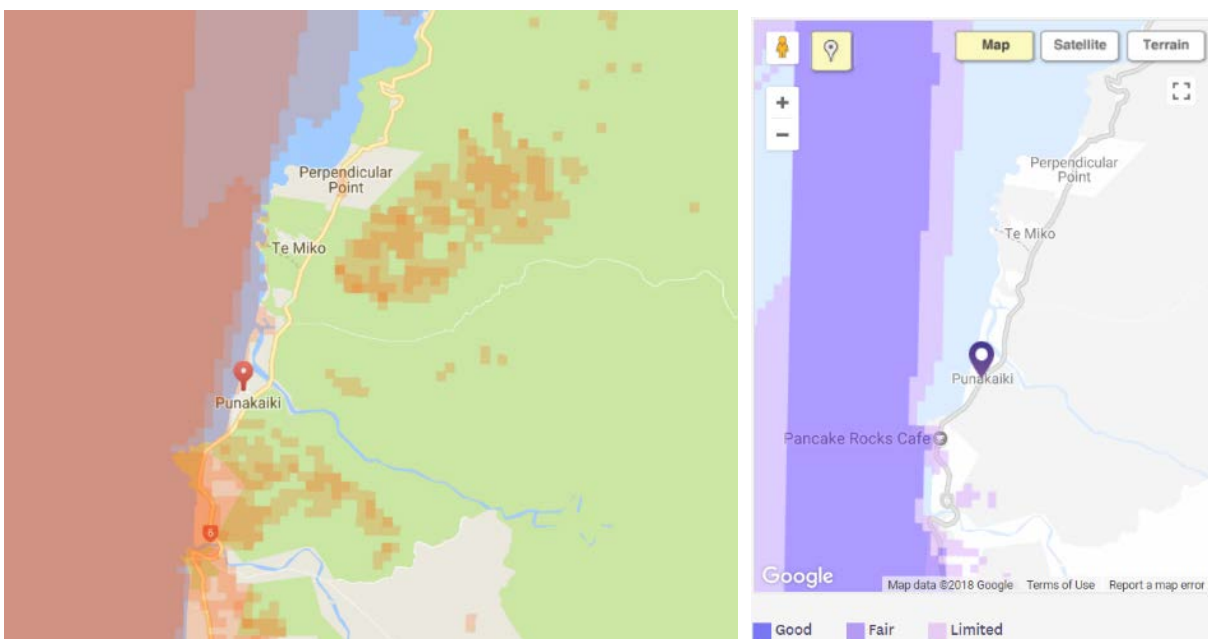


Figure 3-8: Mobile phone coverage supplied by Vodafone (left) and Spark (right) in the vicinity Punakaiki

Access to postal services and facilities in Punakaiki is also very limited. Mail delivery to the community is via community mailboxes, however there is no community facility to send or receive parcels or tracked mail. Similarly, pre-loaded computerised systems often don't recognise addresses in Punakaiki and addresses on Google maps do not always align with the area. Residents have described incidents of couriers dropping parcels off on the highway, difficulty applying for drivers' licenses as addresses are not recognised and bills and mail going missing. Residents also struggle to compete with tourists for parking at Dolomite Point when wanting to post or collect mail.



Figure 3-9: Existing community mail facilities at Dolomite Point

3.2.5 Community/ civil defence centre

The Punakaiki area is home to approximately 100 people, and during peak periods, can receive up to 6,000 visitors per day. In the event of an emergency, there is no central facility to accommodate or provide supporting services. The community have identified a need for such a facility, to serve as a civil defence centre in an emergency, but also to provide a space to support recreational and social activities.

3.3 Problem 2

The sheer volume of visitors is leading to degradation of Punakaiki's unique natural environment, diminishing the visitor experience and community wellbeing

3.3.1 Volume of Visitors

The overall growth in the number of people visiting Dolomite Point has been significant. Over the past five years there has been an annual growth of nine per cent; with over half a million visitors recorded in 2016/17. While most visitors stay in the area for just a few hours, other visitors are extending their stay to experience the natural landscape; Punakaiki is nestled between the Paparoa National Park and Punakaiki marine reserve and offers pristine beaches, rivers, caves and forest. Visitor activities include tramping, caving, mountain biking and rock climbing; as well as water-based activities including swimming, fishing and kayaking.

Visitor growth is anticipated to be sustained in the short term, with international visitor arrivals to New Zealand forecast to reach 4.9 million visitors by 2023 (from 3.5 million in 2016)⁸. In addition to this underlying growth, the opening of Paparoa Track and Pike29 Memorial Track in mid-2019 will attract even more visitors to the area. The Paparoa Track will be New Zealand's 10th Great Walk, and the first year-round purpose-built walking and mountain biking track. The forecast number of users of the Paparoa Track was revised following

⁸ Ministry of Business Innovation and Employment (2017). *New Zealand Tourism Forecasts 2017 – 2023*. <http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/international-tourism-forecasts/documents-image-library/forecasts-2017-report-final.pdf>

the market response to the Old Ghost Road trail and off-peak use of the Heaphy Track for mountain biking. The revised forecast for the Paparoa Track is now 5,000 people in 2019, increasing to 10,000 users by 2024.

These visitors will have differing needs to the short stay visitors to Dolomite Point. Trampers and mountain bikers may require shuttle transport, long term parking, accommodation/ hospitality services, fresh drinking water, medical supplies/attention, and potentially bicycle hire, servicing and spare parts.

3.3.2 Freedom Camping

Freedom camping is a growing holiday trend for many visitors to New Zealand. The International Visitor Survey defines freedom camping as “Free camping - staying at a place that is NOT an official camp site, in a tent, caravan, campervan / motorhome”. While the proportion of visitors that participated in some freedom camping while visiting New Zealand is relatively small, the number has risen substantially in recent years; from 60,000 freedom campers in 2015 to around 110,000 in 2017⁹. Note that this number excluded the number of domestic visitors participating in freedom campers.

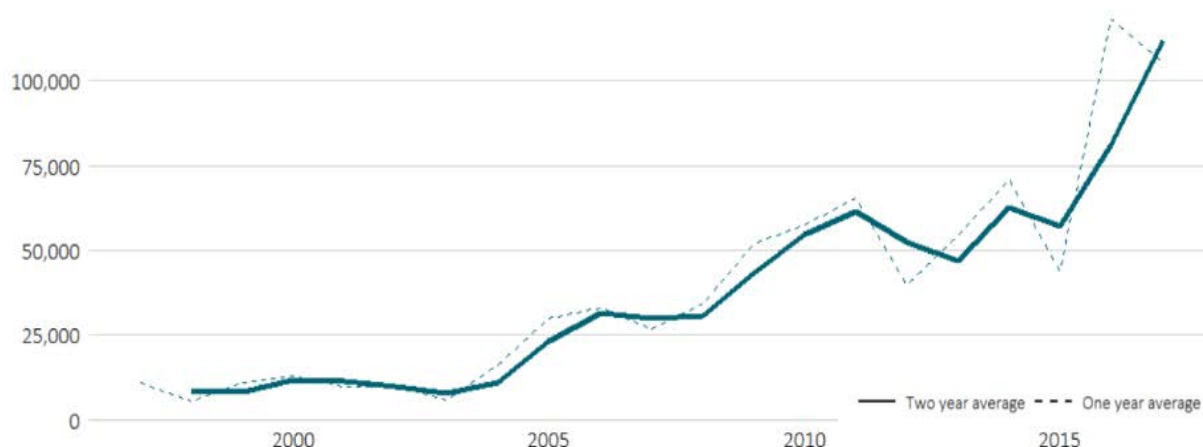


Figure 3-10: Number of international visitors participating in freedom camping in New Zealand over the past 20 years

3.3.3 Unique Environment

“Untamed Natural Wilderness” is the slogan of Tourism West Coast and is showcased at Punakaiki, the most visited natural area on the West Coast. The village’s best known attraction is Pancake Rocks located at Dolomite Point, which are heavily eroded layered limestone that were formed 30 million years ago, as well as a number of vertical blowholes.

The township is enclosed by the Paparoa National Park and the Punakaiki Marine Reserve, which both aim to preserve the natural and endemic flora and fauna of the area. The landscape is a unique mix of karst limestone caves, coastal forests, sea cliffs, rocky shores, rivers and lagoons. Punakaiki is home to the only Tōiko (Westland petrel) breeding colony in New Zealand, where an estimated 4,000 pairs breed annually in the foothills of the Paparoa mountain range. While the population is considered stable, key threats include longline and trawl fishing vessels, and predation by dogs, cats and weka¹⁰. Vegetation in the Punakaiki area consists of a coastal rainforest of ferns, nikau palms and Rimu, with typical West Coast flax on the coast.

3.3.4 Degradation of Visitor Experience and Community Attitudes/Wellbeing

While Punakaiki is a popular site for visitors to freedom camp, community attitudes towards freedom camping across New Zealand vary, and there has been a substantial amount of negative press in recent years relating to freedom campers in Punakaiki, as well as other popular tourist destinations. Every district has different rules and regulations for freedom camping; lack of consistent rules across district borders mean that visitors may be unaware they are violating local bylaws. Some communities question the value of allowing freedom camping, with the negative impacts of freedom camping such as littering, defecating, overcrowding, fire lighting and anti-social behaviour (refer to Figure 3-11 and Figure 3-12) often considered to outweigh any benefits these visitors bring.

⁹ <http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/ivs/analysis-and-research/freedom-camping-by-international-visitors-in-new-zealand>

¹⁰ <http://nzbirdsonline.org.nz/species/westland-petrel>

A Mood of the Nation report commissioned by Tourism Infrastructure Aotearoa and Tourism New Zealand in 2016¹¹ identified that a key step to help manage tolerance towards future growth was to “continue to address concerns around areas such as freedom camping, accommodation and potential damage to our environment”.



Figure 3-11: The car park at Pororari River in Punakaiki is popular with freedom campers and can lead to overcrowding



Figure 3-12: Littering at a popular freedom camping site

The image of the Punakaiki experience is one of natural wilderness, however the reality for many visitors is queues and overcrowding, car parking and sewerage capacity constraints, non-potable water and vulnerable roading infrastructure. For the local community, there is a tension between supporting visitors who provide valuable income to the isolated community and dealing with the negative consequences and impacts of mass tourism on a fragile ecosystem. In 2016, a petition seeking to ban freedom camping in Punakaiki was presented to both Grey and Buller District Councils, signed by over 80% of Punakaiki's ratepayers. Both Councils voted against the proposal to ban freedom camping in the village.

3.4 Problem 3

There is a small and diminishing area of land that can be used to service visitor demand reducing the long-term viability of the community.

3.4.1 Limited Land for Development

Development of land in and around Punakaiki is limited as a result of the surrounding National Park and the Paparoa Character Area zoning (refer to Figure 3-13). The emphasis of the rules relating to the Paparoa Character Area is to ensure that the Paparoa coastal environment is protected from the effects of activities that could detrimentally impact on the scenic and natural values of this unique section of the Buller coastline. The remaining available land for development (residential and commercial) is zoned as scenically sensitive, as the visual appearance of these settlements has a major effect on the highly valued scenic amenity. Because of this constraint, it is important that the available land is used as efficiently as possible.

¹¹ <https://www.tourismnewzealand.com/media/2353/mood-of-the-nation-apr-2016.pdf>

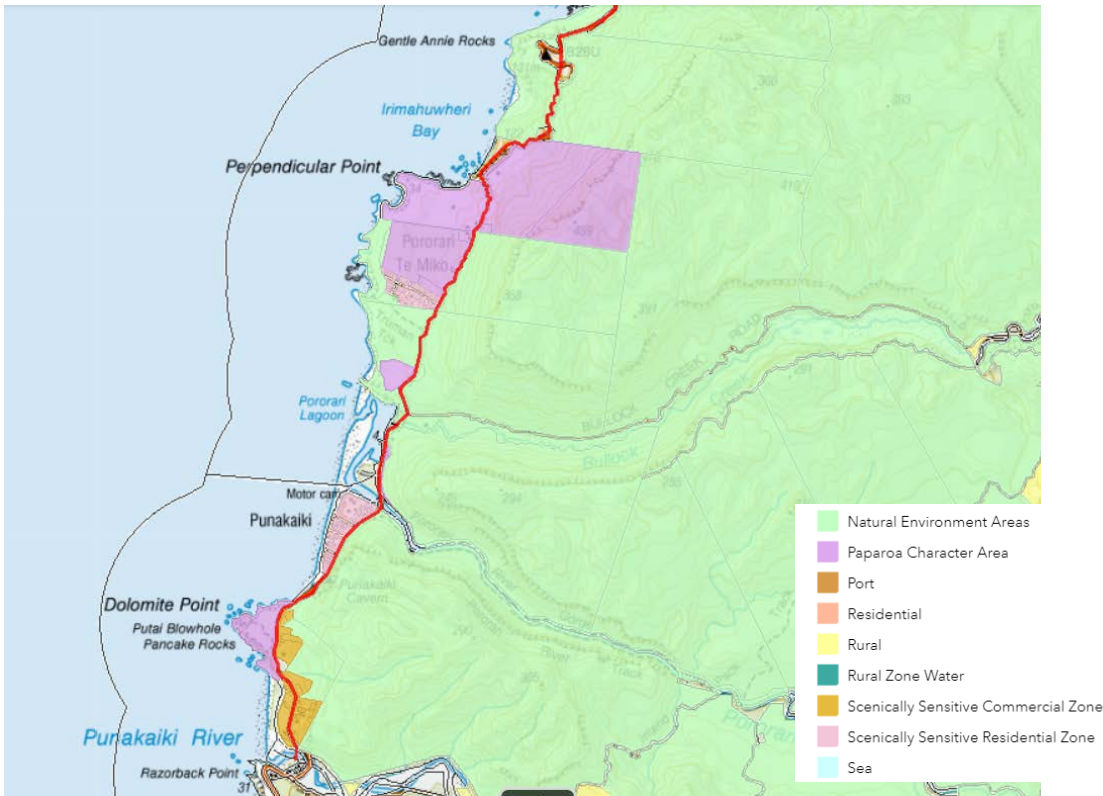


Figure 3-13: Buller District Council planning zone map for Punakaiki

3.4.2 Servicing Visitor Demand

The scale of the number of visitors to Punakaiki is putting pressure on existing infrastructure, and there are limited opportunities to develop new infrastructure in the area. Buller District Council’s District Plan acknowledges the natural hazard risks in the area and aims to “reduce the risks to people and communities from natural hazards, and to avoid the establishment of activities which increase the likelihood of natural hazards occurring”. The district plan sets out policies to manage this risk by using hazard information to assess resource consent applications, require mitigation works to minimise the risks of natural hazards and restrict further development in hazard prone locations (subject to the relevant statutory provisions in the Resource Management Act and Building Act).

3.4.2.1 Parking demand

The demand for parking at Dolomite Point exceeds the available supply at peak times (refer to Section 3.2.3.2), resulting in erratic and illegal parking in the visitor car parks and on the state highway. Development of the visitor centre at Dolomite Point is proposed to provide a world class visitor experience to enhance conservation, education and commercial offerings. Enhanced pedestrian access and increasing parking capacity are proposed to support this development, however draft concept plans for the car park (refer to Figure 3-14 and Figure 3-15) depict encroachment on the sensitive surrounding natural areas¹², and any such extension of car parking would need to be carefully managed through the consenting process.

¹² Dolomite Point, Punakaiki Parking Report – Supplied by TDG



Figure 3-14: Concept plan for parking redevelopment – northern car park extension



Figure 3-15: Concept plan for parking redevelopment – southern car park

3.4.2.2 Wastewater

The existing wastewater systems also poses limitations on the development of the area as wastewater must be stored and/or treated on-site, constraining disposal capacity. Extensions of on-site wastewater systems are required to accommodate increased density and are generally prohibitive, given the sensitivity of the surrounding land (national park and scenically sensitive zones), underlying geology (karst), steep topography, and the land requirements for effluent disposal (generally in proportion to the quantity of wastewater generated). Without a reticulated sewerage system or improved individual on-site wastewater systems, the potential to expand or develop existing or new tourism/commercial facilities and increase the range of accommodation and attractions is very limited.

3.4.3 Coastal erosion and inundation

The low-lying land in and around Punakaiki Village is vulnerable to coastal erosion and inundation, diminishing the available land available for development. Ongoing seawall protection works aim to protect residential dwellings in Punakaiki Village as well as the local campground (refer to Table 3.16), however storms and king tides continue to encroach on the adjacent beach. The campground is a vital community asset, providing accommodation for up to 250 people, however coastal inundation is threatening a wetland area that is used to treat the campground's sewage, ultimately threatening the long-term viability of the campground. Dickinson Parade, a coastal road that runs parallel to Pororari Beach is now closed as a result of inundation (refer to Figure 3-19). SH6 is also vulnerable and is currently reduced to a single lane following storm surges and inundation as a result of ex-cyclone Fehi in February 2018.



Figure 3-16: Seawall protection at Punakaiki



Figure 3-17: Dickinson Avenue is now closed as a result of coastal funding

3.4.4 Long term viability of Punakaiki

The risks and constraints relating to developing infrastructure in Punakaiki results in financial uncertainty, making it difficult for residents and developers to invest in the future. The seasonal variation of visitors, in conjunction with natural hazards that have led to road closures at peak times (e.g. ex-cyclone Fehi in February 2018) impact on the sustainability of the local community and businesses.

It can be very challenging for people seeking to move to the area, and for businesses to employ local staff. Any available accommodation that is not already occupied by permanent residents is generally available for short term rentals to tourists via websites such as Air BnB or bookabach. Air BnB alone has over 30 homes available for rent, ranging from \$54 to \$484 per night. This makes it challenging for new residents and seasonal workers seeking to rent accommodation, given the competition for higher value tourism market rates.

3.5 Opportunities

3.5.1 Integrated planning and management

Numerous plans have been prepared in the past that seek to enhance and improve infrastructure or support development in Punakaiki. These have all been developed in isolation and may result in lost opportunities or have unintended consequences. For example, the water treatment plant (WTP) installed in Punakaiki in 2011 supplies drinking water to Punakaiki village, however the supply does not extend to the tourist destinations and accommodation in the vicinity of Pancake Rocks, south of the village. The Department of Conservation (DOC) supplies the visitor centre via their own water supply, which is untreated and not suitable for drinking. Similarly, the scope of the Dolomite Point redevelopment project includes the expansion of the car park and changes to road and footpath alignments. However, the project does not incorporate future-proofing water and wastewater schemes.

The development of an overarching business case and master plan for the greater Punakaiki area provides an opportunity to integrate planning and investment for the area in order to provide certainty for investors and ensure infrastructure can meet current and projected future demand. Given that the area of land available to be developed is severely limited, it is important that the land that is available is utilised in the most efficient way possible. Taking a master planning approach will allow existing land uses to be reviewed, and options explored that allow for growth within a limited footprint.

3.5.2 Maintain and enhance natural values

The landscape and natural environment are strongly valued by the community and is one of the core reasons why tourists are drawn to visit Punakaiki. However, the impacts of mass tourism mean that these values are being degraded, diminishing the attraction of Punakaiki. Opportunities to coordinate planning, improve core infrastructure and plan for the future will ensure that the natural environment can be preserved and enhanced for the benefit of future generations.

3.5.3 Enhanced tourism offering

There are multiple challenges associated with providing for short visitor stays and the seasonal demands of tourism in Punakaiki. There are aspirations to encourage visitors to extend their stay, however there are currently only limited experiences and a narrow range of accommodation options. Similarly, opportunities to 'spread the load' and encourage visitors during the shoulder and off-peak seasons are desired to support the sustainability of local businesses. Providing special interest attractions such as events, cultural and sporting activities may facilitate this. The Tāiko Festival and the opening of the Papatōia Great Walk for trampers and mountain bikers aim to contribute to these outcomes.

3.6 Benefits of investment

3.6.1 Improved health and safety

Improving water quality to provide clean drinking water, as well as managing and upgrading wastewater treatment will limit the risk and exposure to pathogens and bacteria that may harm residents and visitors. Implementing safety improvements for pedestrians in the vicinity of the Dolomite Point visitors centre as well as other key sites along the corridor and improving and expanding parking areas will improve safety for all road users.

3.6.2 Resilient community

Enhancing the provision and reliability of core services, as well as investment in defending the village from coastal inundation will provide the community with confidence and certainty in the long-term viability of the township.

3.6.3 Positive visitor experience

Investing in core infrastructure as well as implementing initiatives to better manage visitor needs and the environment will ultimately enhance the visitor experience, as well as community attitudes towards visitors. Positive experiences will be shared on social media and entice others to visit the area.

3.6.4 Sustainable economy

Income from visitors to Punakaiki supports the livelihood of many residents in the village. Enhancing and preserving the natural environment will ensure that Punakaiki's most treasured asset will remain attractive and unspoiled, thereby sustaining the viability of those businesses that rely on the tourism market.

3.7 Investment Logic Map

An assessment of the evidence supports the problems statements that were developed following the first stakeholder workshop in June 2018. The Investment Logic Map shown in Figure 3-18 illustrates the links between the confirmed problems and benefits.

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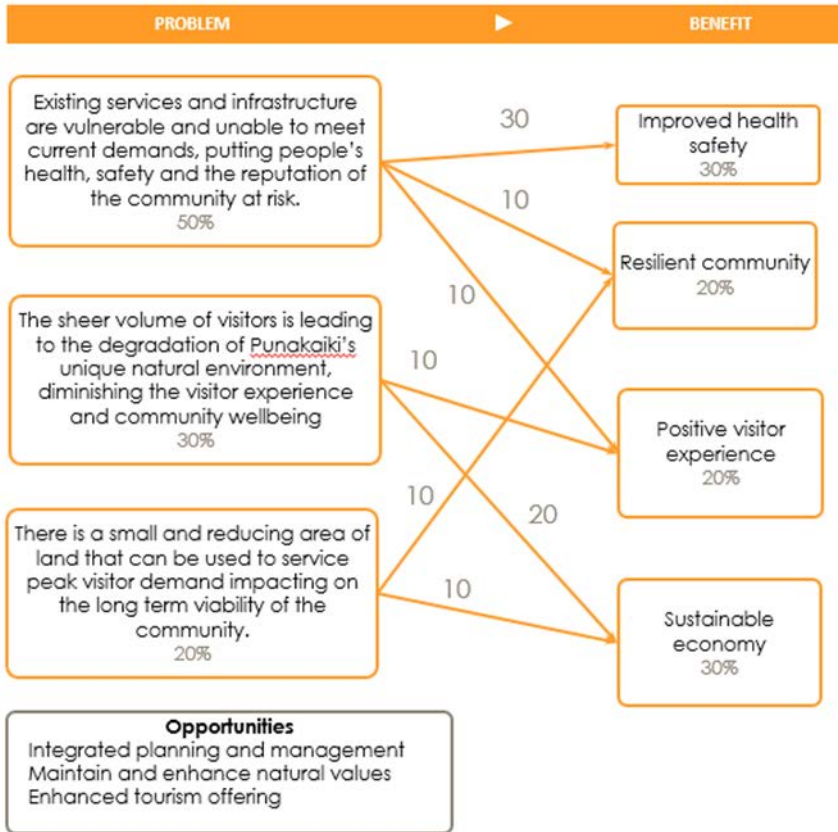


Figure 3-18: Punakaiki Investment Logic Map (ILM)

4. Partners and Key Stakeholders

Stakeholders	Responsibilities and Focus
Buller District Council (BDC)	Buller District Council provides and manages development, infrastructure and community services between Karamea to the north and Punakaiki to the south. In relation to this business case, BDC are responsible for managing water supply and quality, stormwater, community facilities, local roads, footpaths and cycle facilities. While Punakaiki residents individually manage their sewage, the Council has a role in minimising adverse impact of effluent discharges into the environment.
Grey District Council (GDC)	Grey District Council provides and manages development, infrastructure and community services south of Punakaiki River. In terms of transportation GDC is responsible for the planning and operation of the local road network within its territorial boundary, and the development of this business case.
Department of Conservation (DOC)	The central government organisation charged with conserving the natural and historic heritage of New Zealand. In relation to this business case, DOC is responsible for managing the Natural Environment Area zoned land around Punakaiki, as well as the Dolomite Point visitor centre and access to Pancake Rocks. They are also responsible for constructing the Paparoa Track and huts en route, and the promotion of the Great Walk.
Development West Coast (DWC)	Development West Coast is a Charitable Trust that manages, invests and distribute income received from a fund of \$92 million received from the Government. It endeavours to promote employment and generate sustainable economic benefits in the West Coast.
NZ Transport Agency (NZTA)	The NZ Transport Agency's primary purpose is to provide transport solutions for a thriving New Zealand. The Agency achieves this by investing in land transport activities, regulating access and use of the land transport system, and maintaining, operating, planning for and improving the state highways. In relation to this business case, the Transport Agency are responsible for managing and maintaining SH6.
Ministry of Business, Innovation and Employment (MBIE)	The Ministry of Business, Innovation and Employment (MBIE) oversees and delivers policy, services, advice and regulation that contribute to New Zealand's economic productivity and business growth. They also manage the national Tourism Strategy, and the distribution of the Provincial Growth Fund, which may provide Punakaiki with a core funding stream for potential improvement works.
Local residents/ business owners	Local residents and business owners have been invited to participate in the process and will be involved in developing solutions. The focus of the community will be to ensure that the proposed benefits and options are desired and supported by the community.

5. Strategic Alignment

5.1 National

5.1.1 Ministry of Business, Innovation and Employment (MBIE) – Tourism Strategy Summary 2016

The Ministry of Business, Innovation and Employment (MBIE) provides advice to the Government on how to increase tourism's contribution to the New Zealand economy and regions around New Zealand. MBIE have published a Tourism Strategy Summary that is focused on three challenges:

- Attracting the right mix of visitors
- Ensuring visitors have a high quality experience
- Supporting regions to respond to and benefit from increasing visitor numbers

Priority actions from the Strategy that relate to the problems and opportunities identified in this business case for Punakaiki include:

- Better understanding of infrastructure demand and supply
- Pursue initiatives to improve the quality and effectiveness of tourism-related ICT and roading infrastructure
- Increase the yield from visitors to public conservation land to enable better investment in the quality of their experience
- Improve overseas driver safety
- Establish a fund that helps communities and regions to realise their tourism potential by providing assistance to build facilities that enhance the visitor experience
- Prioritise Tourism Growth Partnership investment into initiatives outside main centres.

5.1.2 Ministry of Business, Innovation and Employment (MBIE) and Ministry for Primary Industries (MPI) – Tai Poutini West Coast Growth Study (2016)

MBIE, in partnership with the Ministry for Primary Industries (MPI) administered the Regional Growth Programme (RGP) to identify potential growth opportunities in selected regions of New Zealand. The programme was designed to identify economic challenges and opportunities, and help increase jobs, income and investment for regional New Zealand.

The Tai Poutini West Coast Growth Study was an initiative of the RGP. The Study highlights and explores opportunities to achieve growth in investment, incomes and employment in the region, and is supported by the Tai Poutini West Coast Economic Development Action Plan, which included specific actions for Punakaiki (refer to Section 5.2.2).

5.1.3 Ministry of Business, Innovation and Employment (MBIE) - Provincial Growth Fund 2018

In February 2018, the Government launched the Provincial Growth Fund to enhance the productivity potential in the provinces. Funding priorities include economic development opportunities, creating sustainable jobs, boosting social inclusion and participation, and building resilient communities. The fund has three investment tiers to deliver these priorities:

1. Regional projects and capability - Supporting initiatives for economic development, feasibility studies and capability building.
2. Sector investment - Investing in initiatives targeted at priority and/or high value economic opportunities.
3. Enabling infrastructure projects - Investing in regional infrastructure projects that will lift productivity and grow jobs.

Investing in Punakaiki's infrastructure aligns with the first and third priorities. In addition, the Provincial Growth Fund also identified a number of 'surge regions.' Surge regions are those areas that have been identified as needing early investment; the West Coast has been nominated as one of these regions and is the only identified surge region in the South Island.

5.1.4 Ministry of Transport – Government Policy Statement (GPS) on Land Transport 2018/19 – 2027/28

The GPS was adopted in June 2018, with substantial changes in the direction and focus compared to the previous GPS. The new GPS has four strategic priorities, which are summarised below:

- Safety: is a safe system, free of death and serious injury
- Access
 - provides increased access to economic and social opportunities
 - enables transport choice and access
 - is resilient
- Environment: reduces the adverse effects on the climate, local environment and public health
- Value for money: delivers the right infrastructure and services to the right level at the best cost

Investing in upgrades to Punakaiki aligns with a number of these priorities including safety, access and value for money. More specifically, the GPS “supports investment on improving transport connections in the regions (including local roads, public transport and active modes) that enable tourists to safely reach their destinations”. The GPS supports sustainable economic development of the regions, building on the strengths and economic prospects to enhance the living standards and opportunities of those living there. The document also recognises that some local councils have resource and funding constraints.

5.1.5 Department of Conservation (DOC) – Statement of Intent 2016-2020

DOC’s Statement of Intent establishes the key goals of outcomes for the Department. One of the key outcomes in the 2016-20 Statement of Intent is that ‘New Zealanders and our visitors are enriched by outdoor experiences’. This outcome includes a key priority to construct the Paparoa Track/Pike29 Great Walk. The need for supporting infrastructure to facilitate this outcome is one of the drivers for this Strategic Case.

5.1.6 Department of Conservation (DOC) - Destination Management Framework: A new approach to managing destinations (2011)

The purpose of DOCs Destination Management Framework (DMF) is provide a guide for the coordinated management of all the elements that make up a site or destination; its values, attractions, the people, infrastructure, access and how the place is marketed. The DMF identifies that places need to be managed with the visitor experience in mind, and recognises a number of challenges relevant to this Strategic Case including:

- Increasing participation;
- Managing opportunities;
- Meeting public expectations; and
- Managing change.

This is particularly relevant to Punakaiki, and the redevelopment of the Dolomite Point visitors centre aligns with addressing some of these key challenges at Punakaiki.

5.1.7 Ministry of Health - Drinking Water Standards NZ 2005

The availability of safe drinking-water for all New Zealanders, irrespective of where they live, is a fundamental requirement for public health. Punakaiki is serviced by a raw water source that is subject to high levels of turbidity, triggering frequent boil water notices.

5.1.8 Health Act 1956

The Ministry of Health believes that adequate sanitary works in communities are the most effective and usually the most efficient means of managing the risks to public health associated with inadequate sewerage treatment. The Health Act puts an obligation on local authorities to provide ‘sanitary works’ such as sewerage works and works for the disposal of sewage in their District. Investing to develop and/or improve water and wastewater networks in Punakaiki will enable the Council to meet its obligations under this Act.

5.2 Regional

5.2.1 West Coast Regional Land Transport Plan (2015 – 2021)

The West Coast Regional Land Transport Plan (RLTP) provides the strategic context and direction for transport on the West Coast. The document establishes the land transport objectives, policies and measures for the region for the next ten financial years.

The RLTP recognises the increasingly important role that tourism is playing for the West Coast economy. The region is gaining traction in international visitor markets, resulting in increasing numbers and diversity of visitors to the area. The key transport issues and challenges identified in the RLTP align with the problems highlighted in this strategic case, and are as follows:

- The increasing intensity and number of natural events impacts the security of the network and raises the risk of isolated communities;
- A constrained roading network accommodating increasingly different user types heightens the potential for conflict in the form of accidents and reliability.
- The changing function of the network over time means that there are pockets of infrastructure across the region that are no longer fit for purpose.

5.2.2 Tai Poutini West Coast Economic Development Action Plan (2017)

The West Coast Economic Development Action Plan is a key output of the West Coast Regional Growth Study, which was a collaboration between the West Coast Regional Growth Governance Group and central government's Regional Growth Programme. The purpose of the plan is to identify actions to leverage and enhance the economic opportunities in the region to increase employment, GDP and incomes.

The Action Plan identifies five priorities for lifting economic growth, and includes investment to support key sectors including tourism, ICT and primary industries. The Plan recognises the tremendous pressure on the facilities at Punakaiki and '*Future Proofing Punakaiki*' is one of the seven core actions contained within the plan (refer to the excerpt from the Plan in Figure 1-1).

5.2.3 Development West Coast – Statement of Intent (2017 – 2020)

Development West Coast's (DWC) Statement of Intent sets the vision, goals and key priorities for the organisation. Key priorities that relate to this Strategic Case include:

- Invest in research, development and feasibility to identify opportunities to diversify, develop and create business and industry on the West Coast
- Be a key influencer and partner in the development of the West Coast region
- Be proactive and responsive to the West Coast's changing economic climate and the external factors affecting West Coast business and industry.

5.3 Local

Punakaiki straddles the Buller and Grey territorial authorities and so strategies from both Councils are relevant.

5.3.1 Buller District Council Long Term Plan – 2018 – 2028

The vision of the Buller District Council's Long Term Plan (LTP) 2018 – 2028 is to ensure that Buller is a resilient, safe and thriving community that is 'fit for future'. The document outlines five key strategies to achieve this vision, all of which are relevant to the issues faced in Punakaiki:

1. Resilient – Building and promoting resilience in community, services and infrastructure.
2. Growing - Facilitating growth and a transition to a diversified, resilient and sustainable economy.
3. Quality infrastructure - Providing reliable and sustainable infrastructure that meets the needs of current and future generations.
4. Liveable - Investing in our towns to ensure we are an attractive district to live, work, invest and play.
5. Affordable - Growing our non-rates income so rates are affordable to all residents.

The Long Term Plan recognises the importance of the development of the Punakaiki Master Plan, to ensure that the infrastructure and community facilities are 'Fit for Future'. This Strategic Case forms the initial step of this master planning exercise and will provide a key input and establish the rationale for the Plan. The LTP states that the Master Plan will be developed by the Council, together with West Coast Regional Council,

Grey District Council, Department of Conservation, NZTA, MBIE and other central government partners to build a framework for the future growth of the 'Greater Punakaiki' area.

The LTP also considers the wide range of possible implications to public water supply service delivery following the Havelock North Drinking Water Inquiry, where more than 5,000 members of the public became ill from drinking contaminated water supplied by their local council (refer to Section 1.1.1 for more information). The implications of the Inquiry are under review by the Government but are likely to include the potential for higher treatment standards, changes to quality standards, and higher costs of service delivery. The costs for delivering these improvements remains unclear and may be difficult for BDC to implement as affordability of new infrastructure is one of the district's biggest challenge, especially for the small ratepayer-base areas such as Punakaiki.

BDC's LTP recognises that a number of communities at risk of extreme weather as a result of climate change, including Punakaiki. The LTP outlines that options are being explored with the regional council and the property owners.

Finally, the LTP budget provides for an allocation of \$102,000 towards a community facility in Punakaiki, which is earmarked for the 2019/20 financial year.

5.3.2 Buller District Council Infrastructure Strategy 2015-2045

This document states that the Buller District Council's vision is for the District to grow, and to become a thriving community where families enjoy a great quality of life and the distinctive natural, cultural and historical environment are treasured.

BDC's goals for their infrastructure over the next 10 years are as follows:

- **Water:** provide an adequate supply of water that is of sufficient quality for household, agricultural, commercial and industrial use, which meets the current and future needs of the consumer, in a cost effective manner.
- **Sewerage:** provide cost effective sewerage services for townships, as required by the community, and to continue investigations into minimising any adverse impact of effluent discharges into the environment.
- **Stormwater:** provide for the collection and disposal of stormwater to acceptable environmental standards
- **Roads and footpaths:** provide and maintain a network of roads for the movement of vehicles, goods and people in a safe and efficient manner throughout the District in accordance with Council and NZTA standards.

Punakaiki faces challenges related to all of these infrastructure goals.

5.3.3 Grey District Council Long Term Plan 2018 – 2028

Grey District Council's (GDC) vision is that the district will be a progressive, sustainable area where people want to live, work, play, and invest. While issues faced in Punakaiki are not specifically mentioned in their Long Term Plan, two of the overarching community outcomes to achieve this vision are relevant to this Strategic Case:

- Growing all aspects of the local economy creating opportunities for all and the District is seen as strong and resilient
- Providing affordable, quality essential services.

5.3.4 Grey District Council Infrastructure Strategy 2018-2048

Grey's Infrastructure Strategy provides a 30 year view of the potential strategic issues and options in relation to water, wastewater, stormwater and land transport, and outlines a 30 year view of expenditure requirements. While Punakaiki is not specifically mentioned in the document, Council have identified that to achieve the key community outcomes requires:

- A clean reliable supply of water for drinking and firefighting
- A safe reliable land transport network
- Protection of private property and transport corridors from the effects of stormwater
- Safe disposal of wastewater.

6. Issues and Constraints

The key issues and constraints that could have an effect on the scope of the project outcomes are summarised below.

6.1.1 Environmental

- The Paparoa National Park surrounds Punakaiki, and much of the available land that can be developed is zoned as scenically sensitive.
- The natural environment is highly valued and is a major contributor to attracting visitors to the area.
- Additional development at Dolomite Point to provide additional or expanded facilities and services, such as buildings or car parking may encroach on the national park.
- New Zealand's only breeding population of tāiko/Westland petrel lies within the cliffs of the Paparoa National Park
- The night sky character of the area is highly valued by the community. There is a concern that additional development will contribute to light pollution that may negatively impact on the tāiko population.

6.1.2 Property

- The impacts of rising sea levels and the frequency of intense weather events as a result of climate change are threatening low-lying coastal properties and roads.
- There are few remaining sections that can be developed, and the capacity of these developments is constrained by scenically sensitive zoning, as well as limitations posed by sewerage capacity and drinking water.

6.1.3 Economic

- The low ratepayer base means that funding for infrastructure works is limited and generally not feasible for ratepayers to fund through a targeted rate. The demand from tourists places enormous pressure on existing infrastructure, and often exceeds available supply. However, most tourists stay for an hour or two, and many do not economically contribute to the settlement or pay for the services they use.
- DOC is not legally permitted to charge for access to national parks, so introducing fees to access Dolomite Point cannot be implemented unless the law is changed.
- There are conflicts between the economic benefits visitors bring to Punakaiki, and the impacts that visitors have on the town.
- The remote location and challenging access may result in high construction costs and limited tender competition.
- Uncertainty of funding support and potential investors.

6.1.4 Resource Management

- The security of the existing water source (via Smiths Creek) is vulnerable, as it is located on private land with no formal agreement with the landowner in place.
- Spreading development along the Coast Road will require changes to the zoning of the mostly rural area and potentially encroach on the national park (or result in edge effects). Further development will change the character of the area and is likely to detract from the scenic and heritage values of the corridor.

6.1.5 Maintenance

- Increasing frequency and intensity of storm surges and inundation are resulting in increasing maintenance costs.
- New and upgraded infrastructure is likely to add additional maintenance costs (e.g. new cycleway, additional parking), however the costs of these may be offset by improvements to existing underperforming infrastructure (e.g. water supply). An assumption of maintenance and operating costs has been made in the cost estimates.

6.1.6 Stormwater/Drainage

- Punakaiki's known stormwater infrastructure is limited to the SH6 corridor and behind the Dolomite Point visitor centre. With increasing frequency and intensity of weather events, overland flows may result in flooding, particularly of low-lying areas. However, the impacts may be minimal given that the underlying geology is karst and porous.

6.1.7 Geotechnical

- Parts of the area are prone to slips and rockfalls, and coastal areas are exposed and vulnerable to inundation.
- The underlying geology of parts of Punakaiki is karst, which poses issues for development, particularly in relation to wastewater treatment and storage.

6.1.8 Safety

- Increasing visitor numbers results in higher traffic volumes and increased numbers of pedestrians walking adjacent and crossing SH6, increasing the safety risk due to higher exposure.
- The opening of the Paparoa Track is likely to result in more cyclists on SH6, particularly cycling between the two track ends. Some cyclists may also choose to ride to Westport and Greymouth.
- Rockfall hazards have not been managed immediately above the township
- Poor water quality and waste water discharges threaten the health and safety of residents and visitors.

6.1.9 Stakeholder/Public

- There is a potential to affect sites of cultural, heritage or environmental significance.
- This business case and master planning process has established community expectations that improvement works will be undertaken.
- Differing expectations and priorities will need to be managed, as well as confirming acceptable use of DOC land and assets.

6.2 Uncertainty Log

An uncertainty is an event or change in conditions that may result in a different future state from that originally anticipated or assumed. This can impact on the need for an investment and/or require a change in the response to a problem. These assumptions add a level of uncertainty to the assessment and the likelihood of an event occurring and are classified as follows:

- Near certain – The outcome will happen or there is a high probability that it will happen.
- More than likely – The outcome is likely to happen but there is some uncertainty.
- Reasonably foreseeable – The outcome may happen, but there is significant uncertainty.
- Hypothetical – There is considerable uncertainty whether the outcome will ever happen.

Uncertainties for Punakaiki relevant to this programme business case are identified in Table 6.1 below.

Table 6-1: Uncertainty Log

Factor	Time	Uncertainty	Impact on option	Comments
Visitor forecasts	Ongoing	Near certain	Medium	Future visitor numbers may be higher or lower than forecast.
Crash risk	Ongoing	Reasonably foreseeable	Medium-High	Actual crash risk may be higher or lower than estimated. This will affect the value for money of the project, as the estimates may lead to over or under investment.
Natural Events	Ongoing	Near certain	Medium	Regular natural events result in the closure of SH6 infrequently, temporarily restricting access to the road. A prolonged closure may have substantial impacts on the economic viability of the town as there is only one access road to Punakaiki; and the town is heavily reliant on income from visitors.
Economic benefits	Ongoing	Reasonably foreseeable	Low	The expected economic benefits to the community arising from the investment are based on core assumptions and have a significant degree of uncertainty, which will affect the cost benefit assessment of this project.
Community wellbeing	Ongoing	Reasonably foreseeable	Low	The impact of the investment on community wellbeing is uncertain, it could increase or decrease, depending on provision of facilities, visitor behaviour and perception.

Factor	Time	Uncertainty	Impact on option	Comments
Coastal retreat for residential properties	30 – 50 years	Reasonably foreseeable	High	It is uncertain who would take responsibility for a response to retreat of residential properties from accelerated coastal erosion and increased inundation events as a result of climate change effects, and how this would be funded.

7. Project Outcomes

7.1 Investment Objectives

Six investment objectives have been developed that will be used to assess the performance of the potential programmes of work. These are derived from the project benefits and core themes of the problems (refer to in Figure 7.1 below) and form a key aspect of the multi-criteria assessment.

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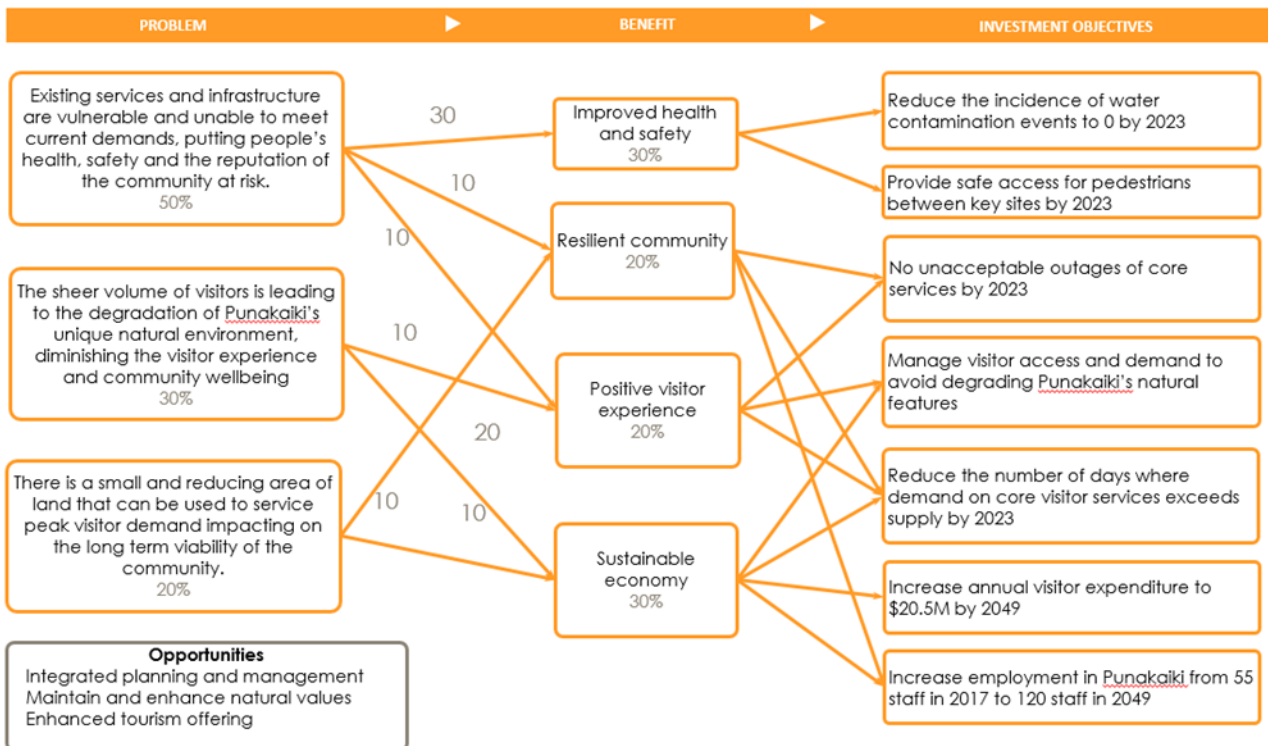


Figure 7-1: Futureproofing Punakaiki Investment Logic Map (ILM)

The benefits table shown below identifies the key performance indicators and investment targets related to each investment objective. These are the targets that anticipated following investment in the recommended programme to address the identified problems.

Table 7-1: Project Investment objectives and Key Performance Indicators (KPI's)

Investment Objective	KPI	Baseline	Target
Reduce the incidence of water contamination events to 0 by 2023	Contamination events: e. coli turbidity	217 ¹³ days of boil water notices in 2017 0 days 'no swimming notices' in Punakaiki's rivers and beaches	0 days of boil water notices by 2023 Maintain 0 days of 'no swimming notices'
Provide safe access for pedestrians between key sites by 2023	Deaths and serious injuries (DSI) of vulnerable road users	0 deaths and serious injuries (DSI) of vulnerable road users	Maintain 0 DSI

¹³ Based on Council records

Investment Objective	KPI	Baseline	Target
No unacceptable outages of core services by 2023	Availability of transport and telecommunications networks	Minor gap in resilience in 2017 assessed using ONRC resilience tool (1 unacceptable road closure > 12 hours)	Achieve acceptable level of service goal for an arterial highway measured using ONRC resilience tool
		Existing UFB and mobile phone coverage	All dwellings with ability to access UFB by 2023
			All dwellings with continual mobile phone coverage from at least one provider by 2023
Manage visitor access and demand to avoid degrading Punakaiki's natural features	Condition of natural features	Number of days where litter is present on beaches ¹⁴	80% reduction in number of days where litter is present on beaches
		Number of vehicles on beaches at unpermitted sites ¹⁵	80% reduction in number of vehicles on beaches at unpermitted sites
Reduce the number of days where demand on core visitor services exceeds supply by 2023	Constrained or restricted water supply and parking, as well as access to public toilets	20 days in 2017 where water supply was subject to restrictions	0 days of water restrictions by 2023
		Number of days where parking demand exceeds supply ¹⁶	No more than 20 days where parking demand exceeds supply
		3 public toilets in Punakaiki	12 public toilets at Dolomite Point and 2 additional toilets at Paparoa track ends by 2021
Increase annual visitor expenditure to \$20.5M by 2049	Visitor expenditure	Visitor expenditure estimated at \$3.38M in 2017	6% per annum increase (based on medium growth projections)
Increase employment in Punakaiki from 55 staff in 2017 to 120 in 2049	Total full time and part-time employment within the Punakaiki area	55 people	120 people by 2049
	Coastal retreat managed	No current coastal retreat plan in place	There is financial provision and a long term relocation plan for all properties affected by coastal erosion by 2030

¹⁴ Baseline data for litter on beaches to be monitored and reported by community warden over the 2018/19 Summer.

¹⁵ Baseline data of number of vehicles on beaches at unpermitted sites to be monitored and reported by community warden over the 2018/19 Summer.

¹⁶ Limited baseline data available. A review of Dolomite Point parking and access recommended that a 95th percentile design threshold would be sufficient to meet the demands, meaning that parking demand could be met on all but the busiest 20 days of the year.

8. Consultation and Engagement

Extensive collaboration and engagement with stakeholders and the community has been an integral part of this project. Throughout the course of developing the business case the local community has been kept informed through correspondence and via an open invitation to meet with the project manager at the local café at key stages of the project.

Key elements of the engagement included the initial stakeholder workshop in June 2018 to identify and agree on the problems and benefits of investment. This was followed by two community workshops held in Punakaiki in July and September. The first community workshop sought to endorse the vision and identified problem statements, present evidence to the community to confirm the agreed problems and identify potential interventions and solutions to address the key problems. These potential solutions generated the long list of potential interventions. The purpose of the second community workshop was to describe the shortlisting process and present the potential programmes of work. The community highlighted their preferences at this workshop, which were then integrated into a preferred master plan.

Further details of community and stakeholder engagement and consultation are captured in the Communications and Engagement register (refer to the Stakeholder Engagement Plan, contained within the Punakaiki Community Master Plan and Business Case, October 2018)

9. Strategic Case Summary

The Strategic Case demonstrates that for the most part, there is a strong evidence base confirming the identified problems are present. A summary of the evidence for each of the identified problems shows:

Evidence found to support the identified problems included:

- Significant growth in tourist numbers over the last four years, which aligns with National trends in visitor growth.
- The scale of the visitors to local residents at peak times in Punakaiki is 60 visitors to every one resident.
- The quality of Punakaiki's drinking water scheme poses ongoing health risks for residents and visitors.
- There is insufficient storage capacity of treated water to meet current and future demands for residents and visitors.
- There are inadequate parking and freedom camping areas which affects the visitor and community experience.
- Freedom camping results in damaging impacts to the highly valued natural environment and leads to negative community perceptions and visitor experiences.
- There is a lack of available land that can be developed to:
 - Cater for the growing tourism market, making it difficult to increase the economic benefits derived from tourism.
 - Individually manage sewage on site (which is inefficient, costly and land intensive).
- Parts of the community are at risk from coastal inundation.
- Road access is vulnerable and at times unavailable due to slips and coastal erosion.
- The Paparoa Track Great Walk, opening in 2019 will lead to more visitors and further demands on existing facilities.
- Users of the Paparoa Track Great Walk will have different needs compared to the short stay visitors to Dolomite Point.
- There is strong alignment of the project with multiple national, regional and local strategies, particularly in relation to health, tourism and regional economic development.

There is anecdotal evidence that individual sewerage systems exceed capacity at peak times with sewage overflows occurring, resulting in environmental damage and health risks for residents and visitors. A method for recording the frequency of these incidents is required to fill this evidence gap. While the case for investment is not as critical as resolving Punakaiki's water quality issues, there may be opportunities to integrate the delivery of community water and wastewater schemes in conjunction with the Dolomite Point development.

It is clear that the small ratepayer base cannot continue to pay for infrastructure to meet the needs of the growing number of visitors, even with central government subsidies. Significant investment is required to upgrade core infrastructure to meet the current and future demands, as well as contributions to the ongoing maintenance and operational costs of these core services.

While some of the issues have been ongoing for many years, the scale of visitor growth over the last few years has increased the pressure and urgency to respond. The evidence supports progressing with the development of a master plan that incorporates a programme of improvements to core services and infrastructure immediately.

Part B – Developing the Programme

An integrated business case and master plan process has been used to develop a framework to address the key issues and demands facing Punakaiki, and to provide a vision for the future. The master plan identifies a core vision, the long-term aspirations of the community and a plan to embrace a positive future. The master plan and business case will enable key stakeholders to make well-informed decisions, develop long term plans and seek funding for future development.

10. Generation of Interventions and Assessment

10.1 Confirmation of master plan vision

A community and stakeholder workshop was held in Punakaiki in July 2018. The key outcome of the workshop was to develop a long list of possible interventions that could contribute to addressing the agreed problems, as well as understanding and progressing the community’s aspirations to ensure Punakaiki can grow sustainably and embrace new opportunities as they come to life.

The workshop commenced with a discussion of the vision for Punakaiki: “Delivering a sustainable, resilient Punakaiki community and a world class visitor experience”. It was agreed that this statement captured the aspirations of the community and was endorsed by the group. This vision, alongside solving existing problems identified in the Strategic Case, has been a key driver in the development of both the business case and master plan, and has been used to define the key themes and a number of potential programmes.

10.2 Generation of the Long List of Interventions

Workshop participants were encouraged to identify various interventions that could contribute to addressing the key issues and future aspirations. Given the scope and scale of the project, this process was split up by key themes to enable participants to focus on one issue at a time and to ensure all issues were covered. The interventions were later grouped by sub-themes to enable the interventions to be collated and improve the assessment process. The key themes and sub-themes are shown in Table 10-1.

Table 10-1: Key themes and sub-themes that were used to develop and group interventions

Key Theme	Sub-theme	Key Theme	Sub-theme
Water	Source Treatment Storage Supply	Manage access	Vehicle access Dogs Tracks
Wastewater	System Compliance	Natural environment	Manage development Preserve habitat
Transport	Speed limit Pedestrian safety Parking Road	Residential growth	Zoning Location
Communication	UFB Mobile phone Civil defence Postal services	Coastal erosion	Manage Retreat
Community centre	Location Facilities	Servicing visitor demand/ seasonality	Facilities Management
Freedom camping	Permitted locations Excluded locations Facilities Management Camping		

The outputs from this workshop were left on display following the workshop, and members of the community were invited to view and provide comments or further feedback and ask staff questions about the process.

The interventions were summarised and collated, resulting in 164 discrete interventions. The full list of these is provided in Appendix A.

11. Option Development and Assessment

11.1 Option Development

Eight programmes consisting of variable combinations of interventions to address existing and growing problems, opportunities and future aspirations were developed, assessed and then considered by stakeholders. These included a Do Minimum and Do Maximum, as well as a number of intermediate programmes of varying scope and scale. Many of the mid-range programmes were defined using key aspects of the master plan vision. The core focus and emphasis of each programme are described in the section below.

11.1.1 Programmes

Programme 1 - Business as usual

This programme sees the continuation of existing systems, with no new initiatives or major changes from the status quo proposed. Future initiatives such as the proposed roll out of UFB (by 2022) are included, as is continued protection against coastal erosion.

Programme 2 - Do Minimum (achieve minimum standards)

The intention of this programme is similar to business as usual, but with investment in core services and systems to achieve minimum standards. This includes improvements to the existing water supply (quality and quantity); assessment and compliance of sewage systems; minor transport safety improvements and provision of UFB, mobile phone and postal services. Minor enhancements to visitor facilities are also proposed including provision of basic facilities for freedom campers and management of protected/natural areas to restrict access.

Programme 3 - Scale Back

The focus of the scale back programme is towards self-sufficiency and considers interventions for retreat. The programme aims to restrict/reduce the number of visitors to the area and limit development in Punakaiki. A reticulated water supply is no longer available for residents with this option, with water sourced from water tanks and local creeks for larger commercial operations. Basic core services including UFB, mobile phone coverage and postal services are provided and enhanced however. Indiscriminate freedom camping is banned from within the scope area and access to natural/protected areas is limited/managed.

Programme 4 - Enhancement

Four enhancement options have been developed that all seek investment to provide core services. These enhancement options are fairly similar; however, each has a slightly different focus on the desired outcome (Environment, Community, Resilience and Visitor Experience). Some of the key interventions shared by the four programmes include:

- increase water storage and introduction of water metering (user pays);
- improve compliance of waste water systems;
- ban freedom camping between Irimahuwhero Point and Nikau Reserve;
- limit access to preserve natural values; and
- provide for broader range of retail and visitor activities.

Each of the four programmes are broadly defined below, along with details of the core differences of each enhancement programme:

- **Programme 4a - Environment Focus** - This programme has a strong emphasis on enhancing and preserving the natural environment, as well as initiatives that align with general sustainability principles. Core differences of the Environment Focus programme are:
 - Cattle retreat preserved for environmental values;
 - Reduced parking demand and access through introduction of user charges;
 - Tighter restrictions on residential development and freedom camping; and
 - Less emphasis on providing tourism facilities and services.
- **Programme 4b - Community Focus** - This programme aims to address the needs of the community with an emphasis on enhancing community cohesion, as well as long term sustainability and resilience. Core differences of the Community Focus programme are:
 - Civil defence readiness;
 - More extensive community centre facilities;
 - Enhanced and wide-ranging facilities and services for tourists and the community

- **Programme 4c - Resilience Focus** - The focus of this programme is to build capacity in core systems and enhance emergency readiness. It also focuses on the long-term sustainability and viability of the community and includes interventions that enable residential growth as well as planning for and facilitating retreat from low lying areas. Core differences in the Resilience Programme are:
 - Increase capacity/storage of core systems to reduce and minimise impacts of outages;
 - Plan for retreat;
 - Interventions that support residential and visitor growth to support the town's viability; and
 - Implementation of civil defence systems
- **Programme 4d - Visitor experience focus** - The focus on this programme is to provide an enhanced visitor experience, with the aim of supporting longer stays and spreading the peak visitor load to the shoulder and off-seasons. This programme recognises that there will be some growth, particularly following the opening of the Paparoa track, however it aims to support the vision of providing a world class visitor experience. Core differences of the Visitor Experience Focus Programme are:
 - More permissive towards freedom camping with enhanced facilities; and
 - Provision of more accommodation, facilities and services for visitors

Programme 5 - Do Maximum

This programme is the most permissive programme that seeks to maximise investment to enable and benefit from tourist growth

11.2 Excluded Interventions

Nearly all of the interventions identified at the stakeholder workshop were included in at least one of the programme options. However, there were a small number of interventions that have not been included in any of the options; a list of these and the rationale for the exclusion is provided Table 11.1 below.

Table 11-1: Excluded Interventions

Excluded intervention	Intervention	Rationale
Theme		
Water – source	Other creeks	Four creeks/streams have been considered as potential sources for water in Punakaiki (Smiths, Porarari, Punakaiki and a creek behind Dolomite Point); there are no other known suitable sources available.
Water – treatment	Desalination plant	The scale and cost of infrastructure, and the intensive energy requirements of a desalination plant means this intervention is not considered feasible or sustainable for Punakaiki. Desalination is usually considered as a last resort for water treatment.
Transport – Speed limit	50km/h bridge to bridge	Reducing the sign posted speed limit by up to 20km/h (based on existing limits) is likely to provide a better outcome (speed limits along the corridor range from 60 to 100km/h) and is more flexible intervention than this proposed intervention.
	30km/h at key sites	This speed limit is unlikely to be supported by the Transport Agency for an arterial state highway (One Network Road Classification).
	Traffic calming	Traffic calming (other than a gateway treatment) is generally not used on state highways due to the variety of vehicles used on the route e.g. Heavy vehicles including touring coaches and trucks as well as over-dimension vehicles (SH6 at Punakaiki is designated as an over-dimension route).
Transport – Pedestrian safety	Underpasses at key destinations	The cost, space requirements and underlying geology, as well as CPTED ¹⁷ issues reduce the feasibility of this intervention.
	Pedestrian signals	Based on the traffic volume and pedestrian demand, these are unlikely to meet the warrants to install

¹⁷ CPTED – Crime Prevention Through Environmental Design

Excluded intervention	Intervention	Rationale
Theme		
		pedestrian signals. Other pedestrian infrastructure can be used to support safe pedestrian access across SH6 in Punakaiki.
Transport – Parking	Provide parking next to Cavern	The corridor is very constrained adjacent to Punakaiki cavern, as there is no space to provide adjacent parking.
Communication – Civil defence	Encourage purchase of beacons	This intervention can be incorporated into the civil defence education intervention.
Community centre - location	Cattle Reserve	The Cattle Reserve is currently Crown Land. Iwi have identified their interest in developing this land should the Crown relinquish the land, giving the local iwi the Right of First Refusal (RFR) as part of the Waitangi Tribunal settlement.
	Fox River	This site is not centrally located and therefore less accessible than the alternative sites.
	Razorback Point/ Waikori Road	This is a low-lying area and prone to flooding; no available land in the area.
Freedom camping – Permitted location	Use/ enhance existing camping grounds	This option is camping and is currently available; this is not freedom camping.
Freedom camping - management	Implement fee system for selected locations, with basic facilities ('managed camping')	This is not freedom camping by definition. Implementing fees for selected locations will push the problems associated with freedom camping elsewhere. This type of intervention should be considered as part of a consistent solution for the Coast Road, which is an intervention that have been identified and included in programme options.
Manage Access – Vehicle access	Ban at road ends	This intervention is captured in the widespread ban of freedom camping, as well as managing and restricting access to beaches/ where habitats are under pressure.
Residential growth - Zoning	Rezone land in Punakaiki Valley	Punakaiki Valley is low-lying and subject to coastal inundation so should not be considered.
Manage visitor demand/ seasonality	Bikes only permitted on Great Walk in off season	This intervention does not align with the intent of the development of the new Great Walk and will be poorly received by the cycling community.

11.3 Programme Assessment

To assess the performance of each programme, a multi-criteria assessment (MCA) was undertaken. The MCA assessment used a seven-point score (-3 to 3), where the following scores were attributed:

- 3: Significant benefit or alignment
- 2: Moderate benefit
- 1: Slight benefit
- 0: Neutral / No impact
- -1: Slight disbenefit
- -2: Moderate disbenefit
- -3: Significant disbenefit or misalignment (Fatal flaw)

The eight programmes were initially assessed against the six agreed investment objectives. Options that achieved a -3 score (fatal flaw) or did not contribute positively to the investment objectives (i.e. achieved an overall negative score) were excluded from further assessment. The remaining programmes were then screened against six core assessment criteria. These criteria were developed considering stakeholder preferences and criteria from the Transport Agency guidelines¹⁸ that were relevant to this project. A description of the assessment criteria and the rationale for scoring decisions is provided in Table 11.2 below.

¹⁸ NZ Transport Agency (2017). *Multi criteria analysis for transport business cases*.

Table 11-2: Rationale used to score assessment criteria used in the MCA

Assessment Criteria		Rationale
Investment objectives	Reduce the incidence of water contamination events by 80% by 20xx	Considers how well the proposed programme addresses water quality issues. Assessment relates to the anticipated frequency of boil water notices as well as sewerage overflows following the implementation of each programme.
	Provide safe access for pedestrians between key sites by 20xx	This investment objective focuses on pedestrian safety. Programmes that scored well provide enhanced pedestrian access adjacent to the corridor, as well as facilities to support pedestrians crossing the state highway. Programmes that included speed reduction initiatives performed better than programmes without these interventions. Increased growth of visitors will lead to higher traffic volumes as well as pedestrians, increasing their exposure to crash risk.
	Reduce number and duration of outages of core services by 80% by 20xx	This investment objective considers how well each programme reduces the occurrence or frequency of outages relating to core services such as water quality (e.g. frequency of boil water notices) and road closures. This criterion also considers the future reliability and access to communication networks including mobile phone coverage and UFB following investment. The Scale Back Programme scored poorly as this programme removes access to reticulated water, meaning the community is reliant on tank water, increasing the likelihood of water shortages.
	Manage visitor access and demand to avoid degrading Punakaiki's natural features	The focus of this investment objective considers how each programme will address and manage visitor impacts on the natural environment, with a particular emphasis on freedom camping. The Business as Usual programme scored poorly as continued and unmanaged growth of visitors will lead to greater degradation of Punakaiki's natural features. The Do Maximum received a negative score as this programme enables continued visitor growth, and even if managed will degrade the natural experience that Punakaiki offers.
	Achieve an 80% reduction in the number of days where demand on core visitor services exceeds supply by 20xx	This investment objective considers how well programmes increase supply or seek to manage demand in relation to parking, water supply, and sewerage capacity. This investment objective also assesses how well interventions are likely to address the future demands of the Papanui Track users. The Scale Back programme scored poorly as this programme is focused on self-sufficiency and reductions in supply; it is unlikely that the demand from visitors will decrease, resulting in a decline in the level of service of core services.
	Increase annual visitor expenditure by 20% by 20xx	This investment objective holistically considers how well the interventions will support the local economy, as well as the future viability of the township.
	Accept/ Reject At this point, options that had an overall negative score against the investment objectives were rejected. Options that scored a -3 (fatal flaw) for individual investment objectives were also rejected.	
Core Assessment Criteria	Economic	The following considerations were used to determine the scoring for the economic assessment criteria: <ul style="list-style-type: none"> increased business activity in Punakaiki comprising both existing businesses and new businesses. more efficient use of resources (land especially) and increased capability for economic activity. increased population from new residential growth. increased spending in the local area. increased local jobs, employment and income. increased investment into the area.

Assessment Criteria	Rationale
	The Scale Back programme scored poorly, as this option focuses on reducing visitors to the area and for the community to source its own water supply.
Technical difficulty	<p>This criterion considers:</p> <ol style="list-style-type: none"> 1 How straightforward is it to implement this alternative/option, including social, cultural and environmental interventions (e.g. additional planting)? 2 Are any novel/untried/leading edge technologies involved? 3 Are there any technical risks involved in developing or implementing this option? <p>The Do Maximum programme scored poorly as it includes technically challenging interventions including raising land and implementing reticulated sewerage systems.</p>
Land requirements	<p>Scoring for land requirements considered the following issues:</p> <ol style="list-style-type: none"> 4 How does the programme impact on property? 5 Will additional property purchases be required? 6 Are there property risks to delivery and can they be effectively managed? 7 Is there any Maori land required as part of the project? 8 Does the programme affect other infrastructure providers (will agreements need to be entered into with service providers)? <p>The Do Maximum programme was considered to have the greatest need for additional land given that it includes the realignment of SH6 at Dolomite Point as well as other severance sites. The four 'Enhancement' programmes as well as the Do Maximum all include the development of a new wastewater treatment plan, which is likely to have impacts on property, resulting in lower scores.</p>
Natural environment	This investment objective considered the extent of each programme's impact on the natural environment. The Environment Focus programme received the highest score for this criterion, while the Do Maximum programme received the lowest score given that this programme includes continued visitor growth, raising land and realignment of the road corridor.
Approvals	This assessment criteria considered whether statutory approvals are required to gain approval for various interventions and the complexity of these. All programmes received negative scores as all require an approval for access to a water source. Most programmes include a new water intake, which requires a resource consent. The 'Business as Usual' programme requires an approval from the landowner for the existing intake to provide security of the source. The score for the Environment Focus programme was further downgraded as it includes payment to access Pancake Rocks, which is not currently permitted by DOC. A resource consent is also likely to be required to raise land, which resulted in a poor score for the Do Maximum programme.

The initial screening resulted in the elimination of the Scale Back Programme (refer to Table 11.3)) as it did not achieve a positive score against the investment objectives. The Scale Back programme will result in an increased number of water outages, and more incidences where demand exceeds supply. In this programme, the community would no longer have access to reticulated water and would subsequently rely on tank water.

While the 'Business as Usual' programme did not achieve a positive investment objective score, it is carried forward as a baseline programme for investment to inform the economic assessment. The Business as Usual programme does not address the safety issues relating to continued visitor growth, which increases the exposure and safety risk for pedestrians as a result of increased traffic and higher numbers of pedestrians crossing the state highway. Similarly, continued and unmanaged visitor growth will have negative impacts

on the natural environment that will ultimately have an impact on the attractiveness of the area, and the subsequent economic benefits from visitors.

The screening of the programmes against the core assessment criteria resulted in a preference of the 'Enhancement' Programmes. The four Enhancement Programmes (Environment, Community, Resilience and Visitor Experience) consist of similar interventions with minor nuances related to the core focus of each theme. While the Do Minimum and Do Maximum Programmes did not score as well, it was agreed that draft Master Plans for these would be developed, as well as an overarching Enhancement Master Plan to stimulate discussion with stakeholders. While the Do Minimum programme seeks to invest in core services and facilities to achieve minimum standards, the Do Maximum considers a number of 'Big Moves' that could result in a 'step change' for Punakaiki.

The qualitative assessment of the programmes is presented in Table 11-3 below.

Table 11-3: Multi-criteria assessment of Punakaiki programmes

Programme		Investment Objectives							Assessment Criteria							
		Reduce the incidence of water contamination events by 80% by 20xx	Provide safe access for pedestrians between key sites by 20xx	Reduce number and duration of outages of core services by 80% by 20xx	Manage visitor access and demand to avoid degrading Punakaiki's natural features	Achieve an 80% reduction in the number of days where demand on core visitor services exceeds supply by 20xx	Increase annual visitor expenditure by 20% by 20xx	Sum	Economics	Technical difficulty	Land	Natural Environment	Community aspirations	Approvals	Sum	
1	Business as usual	0	-1	0	-2	0	-1	-4	Carried forward for baseline only							
2	Do Minimum	2	1	2	1	1	0	7	-2	2	2	1	0	-1	2	
3	Scale Back	1	1	-2	2	-2	-2	-2	Did not achieve Investment Objectives							
4a	Enhancement	Environment Focus	2	2	2	3	2	1	12	2	1	-1	3	2	-2	5
4b		Community Focus	2	2	2	2	2	2	12	2	1	-1	2	3	-1	6
4c		Resilience Focus	2	2	2	2	3	1	12	2	1	-1	2	2	-1	5
4d		Visitor Experience Focus	2	2	2	2	2	1	11	2	1	-1	2	2	-1	5
5	Do Maximum	3	3	3	-1	3	2	13	3	-2	-2	-2	-1	-2	-6	

11.4 Value for money

A detailed economic assessment has been undertaken of the longer-term economic benefits and costs for the general Punakaiki area and wider West Coast region that will be derived from the implementation of the proposed Punakaiki Master Plan (refer to Appendix B - Greater Punakaiki Community Masterplan).

The economic analysis considers two different benefits and costs perspectives in relation to the new capital and operational spending implications over a 30-year period. The first approach is based on the calculation of West Coast region multiplied economic impacts of the total expenditure involved for the period, whilst the second approach is based on forecast growth over the period in population/total personal income and tourism/local visitor spending. The report also considers the risks in not proactively addressing the overall situation include the adverse impacts of limited population growth and ongoing population ageing, an increasingly inadequate and unaffordable local infrastructural and services network, health and safety issues, lack of land for development, environmental degradation (including adverse climatic events) and associated adverse flow-on effects for the wider West Coast region.

The West Coast region level economic impacts of the currently estimated total new development spending for Punakaiki (expressed in current dollar terms) for the construction period have been determined using the regional model at:

- Total Revenue \$153 million;
- Additional Net Household Income generated in the region \$22 million;
- Employment 421 persons or labour-years; and
- Additional economic activity/regional GDP of \$39 million.

The total economic impacts for the total operational expenditure associated with the various new developments are:

- Total Revenue \$124 million;
- Additional Net Household Income generated in the region \$17 million;
- Employment 365 persons/jobs; and
- Additional economic activity/regional GDP of \$36 million.

The implementation of the development proposals for Punakaiki should generate other valuable gains for the local community and visitors, including improved health outcomes and safety conditions, increased local recreational opportunities, environmental enhancements and improved social interaction opportunities. These factors indirectly impact future economic and social development in Punakaiki.

The detailed analysis concludes that taking the previous point into consideration as well, an appropriate overall benefit-cost ratio for the proposed Punakaiki developments, for the 30-year period, lies within the range 2.5-3.0.

11.5 Sensitivity Analysis

The economic assessment (refer to Appendix C) considers a range of possible financial indicators for the community, business and tourism sectors, with a range of growth forecasts (Low, Medium and High) for the two main indicators (total annual personal income and overnight visitor spending).

The different growth scenarios show total visitor spending over the period increasing from approximately \$4 million in year 1 to in the range \$14 million (Low growth forecast), \$18 million (Medium growth forecast) to \$23 million (High growth forecast) by year 30, that is, an overall gain in the range \$10 million-\$19 million for the period.

Taking into account the forecast growth over the interval in total community income and local visitor spending, the benefit-cost ratio for the proposed total new development and associated operational expenditure in the Punakaiki area ranges from 1.89 for the status quo/Low growth forecast, 2.35 for the Medium growth forecast, to 2.84 for the High growth forecast (in discounted dollar terms).

Adding the above two indicators, and recognising the very limited share of the total regional revenue from Punakaiki (due to its small size and economy) and the limited economic impact of the flow-on benefits of the proposed expenditure for the region results in the following Benefit-Cost ratios:

- Low growth scenario level of 1.90;
- Medium growth scenario level of 2.36; and
- High growth scenario level of 2.85.

12. Recommended Option

The recommended programme was generated through a community engagement workshop on 6 September 2018 (followed by an open session with the wider community as per workshop 2). The programme is a hybrid of the three draft master plans that were developed, consisting of a combination of interventions that aim to address the problems and deficiencies identified by the stakeholders. The list of interventions is presented in Table 12.1 in conjunction with the scope and anticipated timeframe of each intervention. The relationships between these interventions is visually shown on the preferred option master plan (refer to Appendix B.)

The potential scope of each activity is defined by the following:

- **Core** interventions that are expected from the option - these reflect the essential elements that must be successfully delivered.
- **Desirable** requirements to be met - these are the requirements that would add value and bring about additional benefits but are not essential to successful delivery.
- **Optional** requirements - those elements that might be delivered if sufficient budget were available; and
- **Excluded** from scope - those elements that are excluded from this option. This is a powerful tool to prevent scope creep.

In relation to the timing of interventions, short term relates to those interventions that provide an important contribution to the investment objectives (generally 1 to 3 years), while medium term interventions are less critical and generally relate to enhancing the visitor experience or community wellbeing (generally 4 to 10 years).

Table 12-1: The scope of the preferred option for Punakaiki

Theme	Sub-theme	Intervention	Scope	Short/ Medium/ Long term
Water	Source	New water source required to provide a secure and reliable source of water. Likely to be sourced from the Pororari or Punakaiki River. Further investigation needed	Core	Short
	Treatment	New treatment plant required; new site to be located close to water source.	Core	Short
	Storage	Retain existing water storage at Hartmount PI to build capacity and resilience in system – identify storage sites for additional capacity such as Cattle Reserve, Dolomite Pt, adjacent to new treatment plant (location TBA) and encourage tanks at each property.	Core	Short
	Supply	Upgrade existing pipe network and introduce water metering system (user pays).	Core	Short
Introduce water conservation initiatives and education.		Core	Short	
Wastewater	Compliance	In the short term, implement a monitoring programme and improve compliance of existing wastewater systems.	Core	Short
	System	There is a desire from Council to move away from individual wastewater systems and implement a community-based system to divert and treat wastewater. Further investigation is needed.	Core	Medium
Transport	Parking	Improve parking at Truman Track	Core	Short
		Local Punakaiki shuttle service.	Desirable	Short
		Enhance, re-design and increase parking provision. Remove RHS parking from visitor's centre.	Core	Short
	Pedestrian safety	Introduce designated pedestrian crossing points	Core	Short
		Introduce off-road pedestrian and cycleway linking communities from Charleston to Barrytown (reinstate existing off-road track from Village to Te Miko) and connecting the new Paparoa Track ends at Punakaiki and Pororari River bridges.	Desirable	Short
		Widening of existing footpath within Village to accommodate cyclists.	Core	Short
		Designated crossings and additional pedestrian safety measures at Punakaiki Cavern entrance and other high activity points.	Core	Short
	Speed limit	Reduce existing speed limit to 50km/h from Pororari River to Razorback Point (extent TBC)	Core	Short
		Reduce speed limit from 100km/h to 80km/h (extent TBC)	Core	Short
	Road	Gateway experience creating a sense of arrival to the Punakaiki are (to align with geographical features and change in speed limit)	Desirable	Short
		State Highway 6: protection and enhancement of road reserve vegetation and directional signage/line-marking to reinforce driver safety.	Core	Short
		Develop a long-term plan for protection of State Highway access between Whitehorse Bay and Motukiekie.	Core	Medium

Theme	Sub-theme	Intervention	Scope	Short/ Medium/ Long term
		Undertake safety improvements to reduce hazard risk from rock-fall, landslides etc.	Core	Medium
Communication	UFB/mobile	Supply UFB and mobile phone coverage by all suppliers to entire site area.	Core	Short
	Civil defence	Ensure civil defence communications and systems are in place.	Core	Short
	Postal services	Improve postal services including secure parcel collection location.	Core	Short
Community centre	Facilities	Community Centre with civil defence capability (location TBC)	Core	Medium
		Facilities at community centre such as a covered market stalls area, local noticeboard, playground and possibly a skate park.	Desirable	Medium
Freedom camping	Permitted locations	Managed freedom camping location at existing Fox River site.	Core	Short
		Managed freedom camping location at McMillan Road	Core	Short
	Facilities	Provision of information signage and toilet facilities.	Core	Short
	Excluded locations	Ban freedom camping between Fox River and Razorback Ridge and special/natural areas, such as river mouths.	Core	Short
	Management	Community warden / compliance officer.	Core	Short
		Provide designated parking bays at permitted sites to manage numbers.	Core	Short
Engage with Motor Home association to achieve a consistent solution for the Punakaiki area and along Coast Road.		Core	Short	
Manage Access	Vehicle access	Manage vehicle access (including motor-cycles) on beaches where birds nest and areas where habitats are under pressure.	Core	Short
		Restrict access to LINZ land near Pororari River to allow for regeneration.	Core	Short
Natural Environment	Manage development	Revise District plan provisions to prioritise protection of the environment. Develop visibility guidelines including controls of height and colour sympathetic to the surrounding national park context.	Desirable	Medium
	Preserve habitat	Preserve habitat by protecting significant trees, limiting clear felling and ensuring management plans are enforced for road works.	Core	Short
		Provide community transparency of rock quarry sources.	Core	Short
		Introduce community and visitor trapping programme.	Desirable	Short
Residential growth	Zoning	Allow for more permissive rural zoning to support residential growth	Desirable	Short
	Location	Limit development near petrel colony	Core	Short
Coastal erosion	Manage	Maintain and expand seawall to protect road from coastal erosion.	Core	Medium
		Culverts under road for penguin habitat erosion	Core	Medium

Theme	Sub-theme	Intervention	Scope	Short/ Medium/ Long term
	Retreat	Following residential retreat of low-lying areas, consider temporary, relocatable visitor accommodation as an interim use until the land is eventually inundated.	Optional	Long
		Undertake a needs analysis for relocation alongside a long-term evacuation plan.	Core	Medium
Servicing visitor demand	Facilities	DOC service hub at new Paparoa track ends (existing Pororari River track and Waikori Rd track) including cycle parking, toilet facilities, waste/rubbish disposal, shelter structures, drinking water fountains and visitor interpretation/information signage.	Core	Short
		Improvements to existing facilities and services including toilets, waste/rubbish disposal and drinking water.	Desirable	Short
		New/enhanced visitor centre with civil defence capability, to support education, postal services and provide visitor information, bookings etc. Additional offers such as free Wi-Fi, luggage storage and phone charging.	Core	Medium
Servicing visitor demand	Manage visitor demand	Winter concessions for Great Walk.	Optional	Short
		Broader range of activities during winter.	Desirable	Short
		Marketing to promote other attractions.	Desirable	Short

12.1 Option Risk Assessment

An assessment of the risk and likelihood of occurrence in delivering the core elements of the preferred option have been considered and are summarised below. Additional risks are likely to be identified as the project progresses, and these should be captured in a risk register during the next phase of work.

Table 12-2: Option risk assessment

Risk Category	Risk	Description	Impact	Likelihood
Technical	Water Source	Punakaiki River – Supply from Punakaiki River will be vulnerable to damage as long lengths of pipe will be needed to link the intake (located a long way upstream beyond the tidal influence of the river) to the residential areas that are generally located closer to the Pororari River.	Water supply disrupted by pipe breakage	Likely
		Pororari River – Catchment is exceptionally porous and may limit the quantity of water available, particularly during the drier months that coincide with peak visitor periods.	Water supply disrupted as a result of low flows. Potential restrictions for intake consents.	Likely
		Pororari River - The water intake from the Pororari will need to be located beyond the tidal influence of the river, requiring long lengths of pipe.	Water supply disrupted by pipe breakage	Likely
	Sewage capacity	There is limited knowledge or evidence of current issues relating to sewage capacity and potential overflows.	Wastewater overflow may occur due to delayed implementation of improvements and result in negative impacts on the environment or health	Likely
	Ground stability	General earthworks may impact on ground stability.	May add additional time and costs to deliver outcomes	Likely
	Utilities and services	Location and types of services and utilities have not been assessed and are generally unknown	May add additional time and costs to deliver outcomes	Likely
			May impact on the feasibility of potential outcomes	Possible
	Water run-off	Removing vegetation may increase water run-off.	Increase in overland water flows, localised flooding and potential impacts on ground stability	Likely
	Coastal erosion	The scale and timeframes relating to the impacts of coastal erosion are unknown	Delivery of improvements may not be feasible or timely	Possible
Operational	Approvals	Resource consent timeframe may be delayed as a result of consultation and appeals processes.	Additional delays and costs.	Likely
			Punakaiki is reliant on existing water source in the short term, which is prone to outages	Likely
		A resource consent will be required to secure a new water source.	Resource consent may not be approved or permitted intake is lower than required	Possible
	Capacity of water supply	The scale of Punakaiki's peak population and potential future growth is not well understood	New water supply system has insufficient capacity	Possible
			Over-investment in new water scheme	Possible
	Maintenance	Increased maintenance requirements will be needed as a result of	Additional costs to Council and the community	Very likely

Risk Category	Risk	Description	Impact	Likelihood
		improvements e.g. wastewater management and treatment, additional parking, walking and cycling facilities, freedom camping facilities		
	Maintenance	Increased maintenance requirements will be needed due to increased demand (e.g. wear and tear due to more traffic and heavier vehicles / camper vans, waste management)	Additional costs to Council and the community	Likely
	Construction timing	Timing of construction may be limited due to peak season demands/ seasonal issues	Additional time to deliver project	Very Likely
Financial	Feasibility of community Wastewater scheme	The financial benefits of moving to a community-based system wastewater system (e.g. reticulation) may not offer value for money, particularly in low-lying areas threatened by coastal inundation.	Continued wastewater overflows and contamination of water courses	Likely
			Camping ground may have to close	Possible
	Cost estimates	Inaccurate cost estimates due to limited available information at this preliminary stage, and numerous assumptions made	Unable to deliver desirable projects if estimates are below cost	Very likely
			May not be able to secure funding if costs are too high	Possible
	Implementation	Uncertainty of funding support and potential investors.	May not be able to deliver core elements of project	Possible
	Implementation	May be unable to secure local share/ co-investment from Council if required	May not be able to deliver core elements of project	Possible
	Maintenance	Cost of implementation and ongoing maintenance.	Maintenance of new and upgraded infrastructure may be unaffordable	Likely
	Property acquisition	Additional costs if land acquisition is required.	Additional time and costs to Council and the community	Likely
	Construction costs	Timing of construction may be limited due to peak season demands/ seasonal issues	Additional costs to deliver project	Likely
Construction delivery	Tender competition may be limited given the remote location and may result in higher construction premiums.	Additional costs/ premium to deliver project	Likely	
Stakeholder / Public	Delivery of early interventions	Early adoption of a number of discrete interventions (e.g. freedom camping initiatives) are proposed for Summer 2018/19.	May have negative or unintended consequences if these are not executed well or communicated to visitors or the community.	Possible
	Community facility	DoC have advised that they are unlikely to provide a facility at Dolomite Point that supports the range of activities sought by members the community.	Community frustration and disappointment if desires and expectations for the proposed community facility are not achieved or significantly delayed	Possible
	Implementation of water user charges	Implementing water metering and user charges is unprecedented in Buller District,	User charges may not be supported by some members of the community.	Very likely
	Cultural, heritage and environmental impacts	Potential interventions may impact on sites of cultural, heritage or environmental significance.	Loss or damage to key sites	Possible
	Community expectations	Business case process has established community expectations that work will	Community frustration and disappointment and disengagement	Possible

Risk Category	Risk	Description	Impact	Likelihood
		be undertaken prior to funding being confirmed or committed.		
Environmental and Social Responsibility	Visual impacts	New infrastructure to enhance mobile phone reception may not be in keeping with the natural environmental values of the area	Degradation of natural landscape	Likely
	Construction impacts	Adverse environmental effects during construction	Degradation of natural landscape and loss of at-risk flora and fauna species in the area.	Likely
	Freedom camping bans	Freedom camping is proposed to be banned in Punakaiki	Pushes the problems associated with these travellers onto other communities.	Likely
Safety	Crash risk at accesses	Spreading development along the corridor will require additional accesses that could increase the crash risk, given the need to turn to and from the state highway (particularly in high speed areas).	Increased number of crashes	Likely
	Personal security	Providing walking links away from the state highway may not be suitable for some residents due to lack of passive surveillance and CPTED issues, as well as general accessibility (e.g. surfacing and grade).	Increased threat (real and/or perceived) to personal security	Likely
	Vulnerable road user safety	Ongoing growth in visitors will increase the presence of pedestrians and cyclists on the corridor	Increased crash risk for vulnerable road users	Very likely
		Opening of the Paparoa Track will increase the number of visitors walking and cycling between the track ends, and the number of cyclists on SH6 between Westport and Greymouth.	Increased crash risk for vulnerable road users	Very likely
Economic	Rates revenue	Low ratepayer base and limited revenue streams	Unable to fund interventions to achieve desired outcomes without central government support	Likely
	Future maintenance costs	Funding is required for ongoing maintenance for core infrastructure	Project unable to proceed as community unable to afford ongoing maintenance costs and	Possible
	Benefits of project not realised	Investment may not offer value for money or deliver expected economic benefits if visitor forecasts aren't achieved.	May not be able to secure funding if costs are too high	Possible
	Feasibility	Investment may not offer value for money or deliver expected economic benefits if coastal inundation threats are realised, and/or access to the area constrained or compromised.	May not be able to secure funding	Possible

13. Financial Case

The financial case focuses on project affordability, project timeframes and funding options.

13.1 Project Capital and Maintenance Costs and Delivery

The total capital expenditure (capex) for the preferred option is approximately \$78.4 million (in current dollar terms). In addition, the total project operating expenditure (opex) for the 30-year period is estimated at approximately \$73.7 million. The short-term capital expenditure projects (relating to in particular transport, water and communications) presently account for 22% of currently proposed total capital spending, medium-term projects 53% and long-term projects the balance of 25%. A summary of the costs is provided in Table 13-1 below; for a more detailed breakdown on project delivery and operational costs, refer to Appendix D.

Table 13-1: Estimated capital and operational expenditure for preferred programme for Punakaiki

Core Service	Short Term		Medium Term		Long Term		Total	
	(year 1 – 3)		(year 4 -10)		(year 11 – 30)		(30 years)	
	Capex	Annual Opex	Capex	Annual Opex	Capex	Annual Opex	Capex	Opex
Water	\$4,300,000	\$130,000					\$4,300,000	\$390,000
Wastewater	\$30,000	\$5,000	\$1,400,000	\$100,000			\$1,430,000	\$715,000
Transport	\$8,380,000*	\$993,000	\$9,100,000	\$240,000	\$7,500,000	\$240,000	\$24,980,000	\$9,459,000
Community centre			\$500,000	\$30,000			\$500,000	\$210,000
Communication	\$2,920,000	\$100,000					\$2,920,000	\$300,000
Freedom Camping	\$720,000*	\$140,000					\$720,000	\$420,000
Manage Access	\$5,000*	\$1,000					\$5,000	\$3,000
Natural Environment	\$30,000	\$5,000	\$10,000				\$40,000	\$15,000
Coastal erosion			\$5,000,000	\$100,000	\$12,000,000		\$17,000,000	\$700,000
Residential Growth	\$50,000						\$50,000	
Servicing visitor demand	\$650,000*	\$150,000	\$25,800,000	\$100,000			\$26,450,000	\$1,150,000
Total	\$17,085,000	\$1,764,000	\$41,810,000	\$570,000	\$19,500,000	\$240,000	\$78,395,000	\$13,362,000

*Note that some of these interventions have already commenced

13.2 Project Revenue

Expected revenue benefits expected to be realised from the proposed programme of investment (assessed using two different methods) are outlined in section 11.4 Value for Money of this report and summarised below:

The West Coast region level economic impacts have been assessed using the regional model as:

- Total Revenue \$153 million;
- Additional Net Household Income generated in the region \$22 million;
- Employment 421 persons or labour-years; and
- Additional economic activity/regional GDP of \$39 million.

The total economic impacts for the total operational expenditure associated with the various new developments have been assessed as:

- Total Revenue \$124 million;
- Additional Net Household Income generated in the region \$17 million;
- Employment 365 persons/jobs; and
- Additional economic activity/regional GDP of \$36 million.

13.3 Collaboration and Funding Options

Funding for aspects of this project are contained within Buller District Council's Long Term Plan (2018 – 2028), based on current 'business as usual' investment in core services such as on-going costs to provide Punakaiki's reticulated water supply, and general funding for road maintenance, construction and renewals. Specific funding has been set aside for some improvements; for example, \$175,000 has been set aside to address treated water storage capacity and perimeter fencing to improve system resilience and security, while \$102,000 has been allocated in 2019/20 towards the development of the Punakaiki Community Facility. BDC have recently received permission from the Department of Conservation and iwi for a five-year lease for three storage tanks to be temporarily located at the Cattle Reserve, increasing water storage by 556m³.

Buller District Council recently received \$580,000 through MBIE's Responsible Camping Working Group fund to support short term initiatives to manage freedom camping. Council has agreed to use this funding to establish a freedom camping site at McMillan Road, and to establish a freedom camping area at the existing Fox River recreation area. Funding will be used to implement signage and manage parking areas. The funding has also been used to establish a new bylaw to ban freedom camping between Punakaiki River bridge and Fox River. This ban will be supported with information signage and enforced by a community warden, which will be in effect by Summer 2018/19.

In the long term however, no funding has been specifically set aside by Council to invest in core improvements. This recognises that the business case and master plan process would identify the scope and scale of investment required. To fund the improvements identified in this business case and master plan, Buller District Council can either seek external funding from key investment partners or review funding allocations in the existing budget and seek to reallocate funds (or potentially identify new or additional revenue streams) through Council's Annual Plan process, which incorporates public consultation. Given the low ratepayer base, and limited opportunities for additional revenue, partnerships with central government authorities provide the most feasible opportunity to fund the recommended master plan. Potential external partners are identified and described in Table 13-2 below.

In addition to the local communities and Council's, key potential central government funding will be sought for the proposed improvements from:

- MBIE via the Provincial Growth Fund. Investment to develop this business case and master plan was enabled through MBIE, which demonstrates their initial interest and support for the project.
- NZ Transport Agency and the National Land Transport Fund for core transport elements of this business case, although some aspects will need to be endorsed through the West Coast Regional Land Transport Programme (RLTP) first.
- DOC is investing in improved facilities servicing visitor demand including a new/enhanced and multi-purpose visitor centre with civil defence capability.

Table 13-2: Potential External Funding Options

Agency	Description	Funding Mechanism/s
NZ Transport Agency	Elements of this project that relate to the transport corridor can receive funding through NZ Transport Agency's funding processes. The final funding path and resolution of the required co-investment from Buller District Council (or Grey District Council if south of the Punakaiki River) and/or the Provincial Growth Fund process will be agreed with the NZ Transport Agency early in 2019 (refer letter from NZ Transport Agency dated 6 December 2018, attached as Appendix E.	Funding through the NLTP. Note: State Highway projects 100% funded by the Transport Agency, and some activity classes (e.g. walking and cycling) have higher FAR rates for the 2018-21 NLTP. For local road projects, co-investment from local Councils needed at the following Funding Assistance Rates (FAR): BDC – 66% GDC – 58%
MBIE	The goals and outcomes of this project align with many of MBIE's Provincial Growth Fund's priorities (refer to Section 5.1.3). Given the West Coast is identified as a surge region, and the high profile of key issues affecting Punakaiki (particularly water quality and Freedom camping), this project is likely	Funding through the Provincial Growth Fund. \$1 billion available per annum across NZ. The West Coast is identified as a surge region, and funding for this business case/ master plan has

Agency	Description	Funding Mechanism/s
	to be a strong contender for investment through the Provincial Growth Fund (PGF). The PGF is considered a more suitable funding avenue than the Tourism Infrastructure Fund (TIF), as the purpose of the TIF is to provide small scale investment for tourism-related infrastructure and is capped at \$25 million/year across NZ.	been provided from MBIE, demonstrating their initial interest and support. Note, as at 29 November 2018, MBIE have committed \$25.6M to the Dolomite Point Redevelopment Project, as well as funding to improve broadband and cellphone coverage on the West Coast.
DOC	DOC is tasked with delivering the Paparoa Track and are also working on an upgrade to visitor facilities at Dolomite Point. DOC have been actively involved in the development of this business case and master plan, and a number of opportunities have been identified where DOC, Buller District and the community need to collaborate to achieve shared outcomes.	No specific funding allocations, however, there may be opportunities for Council to collaborate and/or leverage off DOC projects e.g. visitors centre
Development West Coast	As this project forms a key action of the West Coast Regional Development Action Plan, DWC may be able to provide financial support for this project, such as via their Major District Initiative Fund. This project aligns with DWC's objectives; promoting sustainable employment opportunities and generating sustainable economic benefits for the West Coast.	DWC provides \$400,000 p.a. to Buller District Council to provide community facilities of social infrastructure. Note that this funding may already be committed to other projects.

The potential funding sources of funds for capital and operational costs are highlighted in the summary table below against the investment programme core services.

Table 13-3: Potential External Funding Options

Core Service	Total		Possible funding contribution	
	(30 years)		Capex	Annual Opex
	Capex	Opex		
Water	\$4,300,000	\$390,000	MBIE	MBIE, BDC
Wastewater	\$1,430,000	\$715,000	MBIE	MBIE, BDC
Transport	\$24,980,000	\$9,459,000	NZTA, MBIE, BDC, GDC	NZTA, BDC, GDC
Community centre	\$500,000	\$210,000	MBIE	BDC
Communication	\$2,920,000	\$300,000	Private sector	Private sector
Freedom Camping	\$720,000	\$420,000	MBIE	MBIE, BDC
Manage Access	\$5,000	\$3,000	BDC	BDC
Natural Environment	\$40,000	\$15,000	BDC	BDC
Coastal erosion	\$17,000,000	\$700,000	MBIE, NZTA, BDC, GDC, Unknown Central Government	NZTA, BDC, GDC
Residential Growth	\$50,000		BDC	
Servicing visitor demand	\$26,450,000	\$1,150,000	DOC, MBIE, BDC	DOC, BDC
Total (30 years)	\$78,395,000	\$13,362,000		

13.4 Financial Risk

The key financial risk for this project is that no funding is yet available nor committed to deliver the key elements of this project. Funding from key partners will need to be secured before further development or investigation of the preferred interventions can be undertaken. This business case will provide a key gateway as required by a number of funding partners, including MBIE and the Transport Agency. Other potential funding partners will be explored and confirmed, however these are likely to require a separate set of approvals processes and gateways.

In addition, there is a high level of uncertainty and assumptions made in relation to the costs to deliver the interventions contained within the preferred programme. As the business case progresses, costs will continue to be refined as details of each intervention become known.

Part C – Delivering and Monitoring the Programme

14. Next Steps

It is recommended that the following actions are undertaken in order to progress this project and achieve the outcomes of the Punakaiki business case and master plan.

Water

Action: Seek funding from the Provincial Growth Fund to commence a Detailed Business Case for Punakaiki's water supply in 2019.

Discussion: Resolving the issues relating to the water source, quality and supply is considered one of the most important issues that needs to be managed, which should be prioritised. While the planned additional storage capacity at Cattle Reserve will provide some relief from water shortages and minimise the frequency and duration of Boil Water Notices in the short-term, a secure, long-term solution for drinking water supply is required. It is recommended that a Detailed Business Case (DBC) be commenced as soon as practicable to investigate the feasibility of a new water source, including the location of a treatment plant and supply, as well as initiatives to better manage demand. It is recommended that BDC engage with MBIE initially to discuss funding for the DBC through the Provincial Growth Fund, as well as funding opportunities into the future. Core to this investigation will also be the financial implications to develop, operate and maintain a new supply, given that the community has been unable to afford the long-term costs of developing a new system in the past.

Climate Change impacts

Action: BDC to collaborate with the Transport Agency to develop a long-term plan for the protection of SH6 in the region

Action: BDC to prepare a long-term evacuation plan that includes a needs analysis for the relocation of the township.

Discussion: The impacts of climate change are considered the most significant issue facing Punakaiki. The frequency and intensity of weather events is expected to increase, which threatens many of the low-lying properties as well as access to the area. Coastal inundation, flooding and slips pose financial and physical risks to residents and their livelihoods. The cost of ongoing protection is likely to become unaffordable and coastal/low-lying properties may become uninsurable. Investing in core infrastructure such as new sewerage and water schemes, visitors' centre and a new community centre may not be feasible in the long term. It is recommended that the Transport Agency in collaboration with BDC develop a long-term plan for the future and protection of SH6 in the region, and Council prepare long-term evacuation plan that includes a needs analysis for the relocation of the township.

Freedom Camping

Action: BDC to monitor success of short-term initiatives to inform future plans and initiatives

Action: GDC to develop a local bylaw to ban freedom camping from Punakaiki River to McMillan Road

Action: BDC to continue to engage with key agencies to develop a consistent freedom camping solution for the region

Discussion: Issues relating to the management of freedom camping is important to the community. Key short-term initiatives to improve the management of freedom camping are currently being established, and the success of these schemes should be monitored during peak season to inform longer-term plans. Support is also required from Grey District Council to extend the proposed freedom camping ban to McMillan Road. In addition, Buller District Council should continue to engage with key agencies and relevant groups to ensure their learnings form part of the national conversation on this issue to influence government policy initiatives to deliver an acceptable and consistent solution across the region.

Community Centre

Action: BDC to continue to work with local residents and DOC to develop a community facility for Punakaiki

Discussion: Many residents have a strong desire for a community facility and potential market space. Further work is needed to define the scope and intended function of these spaces, and to identify a feasible location for this space. Funding for the initial stages of this project has been allocated in BDC's Long Term Plan (for 2019/20), and Council will continue to work with the community to instigate this project. There is potential that DoC may support some of the desired functions of a community space, such as a civil defence centre or community/ environmental education site as part of the Dolomite Point redevelopment. Future

planning and development of the facility should include collaboration with DoC to define the function of the space and agree on an appropriate location.

Transport

Action: BDC to engage with Transport Agency to progress key actions from the business case and identify way forward.

Discussion: Numerous initiatives were identified to improve transport and access through the area. Most of these are located on the state highway and approval and implementation is required by the Transport Agency. Given that many of the transport interventions are relatively minor (e.g. speed reduction, pedestrian safety improvements and gateway treatments), these should be referred to the Transport Agency and be delivered through the minor safety improvements programme (Low Cost, Low Risk). For major works, a Detailed Business Case will be required and led by the Transport Agency.

Wastewater

Action: BDC to undertake a comprehensive audit of existing wastewater systems and issue notices to achieve compliance.

Action: BDC to investigate options (solutions and funding) to provide a community-wide wastewater system.

Discussion: Improving wastewater management has been identified through this business case/ master plan process, however there is limited information on the existing systems and compliance. In the short-term, Council should undertake an audit of the existing systems, and seek compliance of underperforming systems. In the longer term however, Council will need to determine the feasibility of a community-based system such as reticulation, greywater diversion or other mechanisms to manage and treat wastewater. Consideration of potential funding sources to deliver and maintain an integrated wastewater solution will also need to be explored.

Other initiatives

Action: BDC to develop an action plan of work to deliver the remaining interventions. This is likely to cover actions for advocacy, changes to planning mechanisms as well as budgetary items to be considered through Council's Annual Plan and Long Term Plan processes.

Action: Council to engage with service providers such as NZ Post and mobile phone providers to help facilitate local service improvements to meet local needs

Discussion: Other initiatives such as improving postal services and mobile phone coverage, managing beach access, and interventions relating to zoning and revisions to the district plan will need to be compiled into an action plan to identify how and when these will be delivered.

Baches on legal road reserve

Note that an additional issue was raised following the options development phase, highlighting that there are a number of baches located within the road reserve in the area. Leases were granted 20 years ago however these are due to expire in 2020. There is currently no long-term plan or action for these properties beyond this date. The Council acknowledges this uncertainty and is committed to working with the owners to develop a solution.

15. Management Case

The business case and master plan consists of an extensive list of interventions to improve numerous issues facing Punakaiki. It is recommended that an overarching governance group be established to determine an appropriate delivery structure to coordinate across the multiple agencies responsible for delivery of the wide range of activities identified within the recommended programme. There is a reasonably substantial level of investment sought from each of the NZ Transport Agency, MBIE, DOC and potentially other government departments in response to climate change effects over time. Given the community resides predominantly within the Buller District it may be resolved that Buller District Council be the lead agency, as they have been for the delivery of this masterplan and business case. If they are the lead agency they will need to seek external capability to oversee the delivery of this significant and multi-disciplinary programme.

Staff and/or elected members from Buller and Grey District Councils and possibly West Coast Regional Council would form a key part of the governance group. Collaboration with other stakeholders should be included in the development of the various programmes of work as required, which are likely to include the following key agencies and service providers: NZ Transport Agency, Department of Conservation, MBIE, Ministry of Health, NZ Post as well as local iwi. Some aspects of this project are market driven, and expressions of interest should be sought to facilitate investment from the private sector/ developers.



Appendices

Appendix A Long List of Interventions

Theme	Sub-theme	Intervention	Programme options																
			Business as usual	Do Minimum (achieve minimum standards)	Scale back	Some Enhancement				Do Maximum									
						Environment Focus	Community Focus	Resilience Focus	Visitor Experience Focus										
			Fox River	Te Mito	Dolomite Pt to Razorback	Punakaki River to Barrytown	Fox River	Te Mito	Dolomite Pt to Razorback	Punakaki River to Barrytown	Fox River	Te Mito	Dolomite Pt to Razorback	Punakaki River to Barrytown	Fox River	Te Mito	Dolomite Pt to Razorback	Punakaki River to Barrytown	
Water	Source	River (Pororari or Punakaki)																	
		Existing creek (Smiths Creek)																	
		Existing creek (behind Dolomite Pt)																	
	Treatment	Other creek(s)																	
		Roof water (water tanks)																	
		Existing treatment (DOC WTP)																	
		Existing treatment (other private)																	
		Upgrade existing treatment (DOC WTP)																	
		New treatment plant (DOC)																	
		Desalination plant (DOC)																	
	Storage	Existing storage (above Hartmount Pt)																	
		Increased storage (above Hartmount Pt)																	
		Storage behind Dolomite Point (pump up, gravity feed down)																	
Storage at Cattle Reserve																			
Supply	Water tanks (at each property)																		
	Upgrade pipe network (flow capacity)																		
	Meter supply																		
	User pays																		
Wastewater	System	Water conservation initiatives & education																	
		Mahlahi individual wastewater systems																	
		Grey water diversion																	
		Pump settled wastewater from septic tanks to a new treatment plant or DOC																	
		Implement reticulated system																	
	Compliance	Public toilets (including at both local ends of Paparua Track). (Composting or containment).																	
		Compost dump station (note: campground currently provides discharge service for guests)																	
		Assessment of existing system																	
	Transport	Speed limit	Enforcement of WW standards																
			Change of use upgrade requirements																
			Monitoring of wastewater systems (data)																
			Align speed limits with NZTA's 'safe and appropriate speed limit' (80km/h where currently 100km/h, 60km/h through Dolomite/Village)																
		Pedestrian safety	Reduce speed limits by up to 20km/h																
50km/h bridge to bridge																			
30km/h at key sites																			
Traffic calming																			
Underpasses at key destinations																			
Road		Pedestrian signals																	
		Designated crossing points																	
		Walking track linking communities off SH6																	
		Footpath from Hartmount Pt to Punakaki																	
	Widen shoulder for walking/cycling																		
	Safety improvements at Punakaki Cavern																		
	Time restrictions & enforcement																		
	Provide EV charging at key locations																		
	Cycle parking at key locations																		
	Use kayaks for car parking																		
Communication	Mobile phone	Park & ride/walk																	
		Shuttle services from Blackball/Greymouth/Westport																	
		Local Punakaki shuttle service																	
	Civil defence	Provide parking next to Cavern																	
		Redesign parking at Dolomite Point																	
		More parking at Dolomite Point																	
		Improve parking area of Tuman Track																	
		No RHS parking																	
	Postal services	Introduce parking fees																	
		Parking for buses/campervans at key sites																	
		Gateway treatment																	
	Community centre	Location	Develop long term plan for security of SH access between Whitehorse and Makikihe																
			Safety improvements to reduce hazard risk (e.g. rockfalls)																
Facilities		Realign road at Dolomite Point to reduce severance																	
		Realign road at other severance points																	
		Signage/line marking to reinforce o/s driver safety																	
		Protect roadside reserve vegetation along SH6																	
		Cycle connection between Paparua Track ends (Punakaki to Pororari bridges)																	
Cycle way to conservation volunteers site																			
Off-road cycle link to proposed Charleston cycleway																			
Freedom camping	Mobile phone	Supply to entire scope area																	
		Coverage of whole area by all suppliers																	
		Alert systems (tsunami sirens)																	
	Civil defence	Radio communications (VHF)																	
		Education/ drills																	
		Encourage purchase of beacons																	
	Postal services	Community communication system (civil defence cluster)																	
		Improve postal service																	
		Sort out addresses/post code issues																	
	Community centre	Location	Secure parcel collection location																
			Dolomite Point																
			Cattle Reserve																
		Facilities	Fox River																
Razorback Point																			
Freedom camping	Fermitted locations	Other location (e.g. private land purchase)																	
		Covered area for market place																	
	Playground																		
	Skatepark																		
	Civil defence capability/welfare																		
Postal service/PO boxes																			
Muff-purpose hub																			
Freedom camping	Fermitted locations	Use/enhance existing camping grounds																	
		Makikihe Road																	

Appendix B Greater Punakaiki Community Masterplan

See separate document

Appendix C Economic Assessment

Economic Benefit-Cost Assessment of Proposed Punakaiki Area Development Projects

28 October 2018

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Appendix 1

Executive Summary

- This report provides an assessment and supporting analysis of the considered economic benefits and costs for the Punakaiki area and wider West Coast region, in relation to a series of major development proposals for the area which have emerged from a number of locally based community and sector master planning discussions held during 2018.
 - The Punakaiki Marine Reserve is a leading iconic West Coast region visitor attraction. The resulting high and growing level of visitation to the area continues to generate major pressures on the Marine Reserve itself, the local servicing of visitor needs, and the infrastructural and services underpinning of the relatively small and limited Punakaiki Village residential area. This situation is likely to be exacerbated by the opening from next year of the new Paparoa Track Great Walk which is expected to attract further significant visitation to the Punakaiki area.
 - The risks in not proactively addressing the overall situation include the adverse impacts of limited population growth and ongoing population ageing, an increasingly inadequate and unaffordable local infrastructural and services network, health and safety issues, lack of land for development, environmental degradation (including adverse climatic events) and associated adverse flow-ons to the rest of the region.
 - There is an urgent need for upgrading of the volume and quality of infrastructures, services and other resources of the Punakaiki area, in order that it is able to more effectively support and benefit from the high and growing level of tourism to the area.
 - The range of currently proposed developmental and upgrading projects for Punakaiki covers water supply and treatment; wastewater compliance and systems; transport-parking, pedestrian safety, speed limits and roading; communications; community centre; management of freedom camping; local environmental and habitat protection; residential zoning and location; management and protection from coastal erosion; and the servicing of future visitor demands.
 - These projects are linked to a recommended future development direction for the Punakaiki area that is broadly concerned with delivering a sustainable and resilient local community and world-class visitor experience, through a focus on improved environmental outcomes, strengthening community, addressing community resilience and enhancing the visitor experience.
 - Given this, the key benefit groups for the various development projects are Punakaiki residents and households, other local organisations including commercial operations and tourism servicing enterprises, and the different categories of visitors to the area. Flow-on benefits will accrue via these groups at the broader level in terms of the local community as a whole and the commercial and tourism sectors.
 - The range of proposed development projects for Punakaiki infers a diversity of benefits covering the areas of health and safety, commercial operations, resident and visitor safety, community development, housing, environmental enhancement, tourism and visitor servicing.
-

- The analysis in the report provides two different perspectives to the assessment of benefits and costs in relation to the package of proposed Punakaiki developments and their associated new capital and operational spending implications for a 30-year period. The first approach is based on the calculation of West Coast region multiplied economic impacts of the total expenditure involved for the period, whilst the second approach is based on forecast growth over the period in population/total personal income and tourism/local visitor spending.
 - The West Coast region level economic impacts of the currently estimated total new development spending for Punakaiki for the construction period have been determined using the regional model at total Revenue \$153 million, additional Net Household Income generated in the region \$22 million, Employment 421 persons or labour-years and additional economic activity/regional GDP of \$39 million. The total economic impacts for the total operational expenditure associated with the various new developments are total Revenue \$124 million, additional Net Household Income generated in the region \$17 million, Employment 365 persons/jobs and additional economic activity/regional GDP of \$36 million. The value results are expressed in current dollar terms.
 - The detailed analysis in the report indicates an overall Revenue economic impact multiplier value for the combined capital and operating expenditure, of 1.85, in discounted dollar terms (30-year period and an assumed discount rate of 6%). This result infers the generation of \$0.85 of regional economic impact flow-on benefit for each dollar of capital and operating expenditure incurred during the period.
 - The benefit-cost analysis in the report also includes the potential local population/household (community), business and tourism growth impacts over the long-term period, of the various new development proposals for Punakaiki. These are considered to be the broad benefit 'targets' for the proposals. Following consideration of a range of possible financial indicators for these sectors, a range (Low, Medium and High) of growth forecasts for two main indicators (total annual personal income and overnight visitor spending) were developed for the 30-year period, in discounted 2019 dollars terms.
 - The analysis concludes on the following Benefit-Cost ratios: a Low growth scenario level of 1.90, a Medium growth scenario level of 2.36 and a High growth scenario level of 2.85, in discounted 2019 dollar terms. The very limited Punakaiki area's share (due to its small size and economy) of the total regional Revenue economic impact flow-on benefits of the proposed developmental and operational expenditure, is also incorporated in these results.
 - The implementation of the development proposals for Punakaiki should generate other valuable gains for the local community and visitors, including improved health outcomes and safety conditions, increased local recreational opportunities, environmental enhancements and improved social interaction opportunities. These factors indirectly impact future economic and social development in Punakaiki.
 - The detailed analysis concludes that taking the previous point into consideration as well, an appropriate overall benefit-cost ratio for the proposed Punakaiki developments, for the 30-year period, lies within the range 2.5-3.0.
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1. Introduction

- 1.1 This report provides an assessment of the longer-term economic benefits and costs for the general Punakaiki area and wider West Coast region of the South Island, of the currently proposed range of new infrastructural, tourism related and other development projects that have resulted from a series of community master planning workshops and other related initiatives during the course of this year.

The context for the community master planning process for the area is as stated in the Executive Summary of the current iteration of the overall ‘Future Proofing Punakaiki Strategic Case’ document prepared as part of the project, as follows:

“Punakaiki is a small settlement located on New Zealand’s West Coast, midway between Westport and Greymouth. The village has around 100 permanent residents and is surrounded by Paparoa National Park and Punakaiki Marine Reserve. Punakaiki is the most visited natural attraction on the West Coast, with the Pancake Rocks at nearby Dolomite Point, just south of the township, being the iconic attraction. The scale of tourism in Punakaiki is placing considerable pressure on existing infrastructure; during peak periods, up to 6,000 tourists visit the area each day. Existing water and wastewater systems are basic and under strain from the growing tourism demand; parking at Dolomite Point is at capacity at peak times and there is limited mobile phone coverage. However further demands will emerge with additional visitor growth following the completion of the Paparoa Track Great Walk in 2019, a purpose-built track for walkers and mountain bikers that terminates at Punakaiki. In addition to these pressures from visitors, sections of the village and state highway are vulnerable to storm surge, coastal inundation and rockfalls. These natural events reduce the area of usable land to service growth and at times reduce access to services and destinations. Representatives from Buller and Grey District Councils, the Department of Conservation, NZ Transport Agency, iwi and a local resident identified the following three problems at a facilitated workshop:

Problem 1: Existing services and infrastructure are vulnerable and unable to meet current demands, putting people’s health, safety and the reputation of the community at risk (50%).

Problem 2: The sheer volume of visitors is leading to degradation of Punakaiki’s unique natural environment, diminishing the visitor experience and community wellbeing (30%).

Problem 3: There is a small and diminishing area of land that can be used to service visitor demand, reducing the long-term viability of the community (20%).”

- 1.2 In broad terms then, the key goal of the long-term master planning and development process for the Punakaiki area is to considerably strengthen its overall community and economy so as to enable it to more effectively service and benefit from increasing tourism, whilst at the same time protecting, preserving and enhancing the important natural physical environment surrounding Punakaiki. These are the intended general benefits of the process.
- 1.3 The approach used in this report for identifying the economic benefits and costs of the proposed series of specific policy interventions relating to infrastructural and tourism developments, has been guided in broad terms by the latest Central Government/Treasury model for undertaking cost-benefit analysis of policy proposals. This is contained in the September 2017 document entitled ‘CBAX Tool User Guidance’. The nature and focus of the Punakaiki project has necessitated however the use of a more customised approach, as presented in the report.
- 1.4 The matters covered in the analysis in the report are as follows:
- a) The initial broad policy/intervention options for Punakaiki and the presently recommended development approach for the future;

- b) An assessment of the situation that is likely to exist in the future for Punakaiki if these (or any other) recommended policy/intervention options are not implemented (the so-called 'counterfactual' situation);
- c) The current range of recommended specific policy actions for the future development of Punakaiki, and the anticipated associated key benefit groups within the area and wider West Coast region;
- d) The regional and local economic impacts of the proposed new capital and associated operational expenditures;
- e) A specific economic benefit-cost assessment of the proposed policy actions; and
- f) An overall summary assessment of the economic benefits and costs of the recommended future development policies for the Punakaiki area.

1.5 The base information used for the analysis provided in the report has been obtained from a number of sources including the base strategic Business Case report for the Punakaiki project, relevant financial information provided by the lead project consultants, associated economic impact results provided by Dr Warren Hughes of Hughes Economics, Auckland (specialist economic impact modelling consultancy) and relevant Statistics New Zealand/MBIE data.

1.6 For the purposes of this report, the Status Quo or Low growth scenario generally represents a continuation of the historical growth pattern in Punakaiki and the absence of any significant developments during the long-term planning period. A High growth scenario incorporates the impact of the full range of new development proposals. A Medium growth scenario reflects a 'middle of the road' situation between the Low and High scenarios.

2. Initial Broad Policy Options and Recommended Approach

2.1 The broad policy/intervention options or alternatives initially formulated for the Punakaiki development project following a series of local workshop discussions, are as outlined below:

- a) A 'Do Minimum' option which focuses on investing in core services and systems to achieve minimum standards and specifically including improvements to the existing water supply, compliance of sewage systems, minor transport safety improvements, provision of UFB/mobile phone coverage/postal services and minor enhancements to visitor facilities;
- b) Punakaiki 'Enhancement' options. These include the options of an Environment focus, Community focus, Resilience focus or Visitor Experience focus. Development proposals common to all four policies include increased water storage and the introduction of water metering, improved compliance of wastewater systems, banning of freedom camping in a defined area, access limitations to preserve natural values and provision of a broader range of natural values. Additional proposals for each particular focus area include as follows:
 - The Environment Focus has a strong emphasis on enhancing/preserving the natural environment and sustainability principles. Specific policy proposals include reducing parking demand and access through implementation of user charges, tighter

restrictions on residential development and freedom camping, and reduced emphasis on provision of tourism facilities and services.

- The Community Focus has a strong emphasis on meeting local community needs and facilitating community cohesion, long-term sustainability and community resilience. Specific policy proposals include improved civil defence readiness, more extensive community facilities, and improved and more wide-ranging community and visitor facilities and services.
- The Resilience Focus aims to build capacity in core systems and enhance emergency readiness. It also aims to strengthen the long-term sustainability and viability of the Punakaiki community. Further, this focus includes policy interventions to enable residential growth, and plan for and facilitate retreat from low lying areas. Specific policy proposals include increased capacity and storage in core systems, interventions supporting residential and visitor growth to support the local community's viability, and implementation of civil defence systems.
- The Visitor Experience Focus aims to provide an enhanced visitor experience with the objective of supporting longer visitor stays in the area and spreading the peak visitor load during the year. It also aimed to support the vision of providing visitors to the general local area with a world-class visitor experience and acknowledged the likelihood of additional visitor growth in the future due to the opening of the Paparoa Great Walk. Specifically, the focus is more permissive towards freedom camping, along with enhanced facilities for this visitor sector; and also provides for more visitor services generally (e.g. accommodation, facilities, amenities and services).

c) A 'Do Maximum' option which basically seeks to maximise investment in order to facilitate tourism growth to the Punakaiki area and enable the area to benefit from the growth.

2.2 Following further in-depth consideration of the above options, the Project Team has concluded on a broad policy/intervention direction for the future, which is concerned with *"Delivering a sustainable, resilient Punakaiki community and a world class visitor experience"....This involves a focus on improving environmental outcomes, strengthening community, addressing resilience and enhancing the visitor experience...."* (sourced from the preferred masterplan summary overview document).

2.3 These four particular foci infer that there are in essence two key broad benefit groups who are most likely to be directly impacted by the future development proposals for Punakaiki, namely current and future local residents/households (i.e. the Punakaiki community) and visitors to the area. There will then be flow-on gains for the overall economy of the area and the wider region.

3. 'Counterfactual' Situation

3.1 The 'counterfactual' refers to the situation that is likely to exist if appropriate policy interventions are not implemented in, in this case, the general Punakaiki area.

3.2 The implications for the area are in fact inferred by the comments in section 1.2 earlier in the report and are summarised as follows:

- Continued limited growth and ageing of the local population, significantly impacting the overall economic and social viability of the Punakaiki community itself and its ability to effectively service the high and growing level of tourism to the area.
- An increasingly inadequate and unaffordable underlying infrastructural and services network in Punakaiki to support both the local community and the key tourism sector.
- Significant and increasing risks to the health and safety of both local residents and visitors to Punakaiki and, as a consequence, the overall external reputation of the community.
- The lack of available local land for supporting future community, residential, business and tourism servicing developments in and around Punakaiki.
- Local community, tourism and environmental risks resulting from the high and growing levels of visitation to the area and adverse climatic events.
- Adverse flow-ons from all the above, for the wider West Coast region.

3.3 As stated in the strategic case document, the current range of issues facing the Punakaiki area provide an appropriate opportunity now for the implementation of an integrated planning and management approach in the area to address the issues, maintenance and enhancement of its natural values and provision of a considerably enhanced tourism offering.

3.4 In addition, important benefits will flow from proactively addressing the major challenges of the area, including improved health and safety, a more resilient community, more positive visitor experience and a more sustainable local/regional economy.

4. Specific Policy Proposals and Benefit Groups

4.1 The range of currently proposed Punakaiki area growth and development policies/interventions relate to the following sectors:

- i) The sourcing, treatment, storage and supply of water for the area;
- ii) The compliance and operation of wastewater systems in the area;
- iii) Transport aspects including parking provision for visitors, pedestrian safety, speed limits for motorists and roading related developments.
- iv) Communications including UFB and mobile phone coverage, postal services and civil defence communications.
- v) Local community 'hub' centre.
- vi) The location, management, and provision of information for freedom campers.
- vii) Protection of the local natural environment through access and development management, and habitat preservation.
- viii) Residential zoning and location.
- ix) Management and protection from coastal erosion and
- x) The servicing of future visitor demand.

4.2 The proposed budgetary profile for the above items indicates the leading new capital expenditure categories as being the servicing of visitor demand (including a new/enhanced

visitor centre with civil defence capability), transport management and the management of coastal erosion, followed some way behind by water/wastewater management and communications upgrading.

- 4.3 The range of proposed interventions listed in 4.1 above infers that the prime benefit groups for the proposed infrastructural, tourism and other developments are local residents/households/businesses and the different categories of visitors coming to the Punakaiki area. There will also be indirect flow-on benefits associated with these for the overall Punakaiki community, and the local visitor sector as a whole including its visitor servicing component.
- 4.4 The list of proposed interventions also infers a range of anticipated benefit impacts including health and welfare, business operation, resident and visitor safety, social/community development, housing, environmental enhancement and tourism.

5. Economic Impacts

- 5.1 This section quantifies the estimated West Coast region total economic impact (including direct and flow-on/multiplier gains), of the currently proposed Punakaiki project capital and operating/maintenance expenditures.
 - 5.2 The flow-on gains arise from the linkages of West Coast industries (producer or supplier industries) and employees/business owners/consumers with the implementation of the various Punakaiki development proposals. These represent 'multiplier' impacts and confer economic gains to the region.
 - 5.3 For the purposes of the analysis, the following points are initially noted. Firstly, a long-term planning period of 30 years has been adopted for the analysis consistent with the current long-term infrastructural planning approach in New Zealand. Secondly, in most cases, annual operating expenditures associated with short-term (years 1-3) capital expenditure projects have been allocated to the medium/long-term period. Thirdly, again in most cases, new capital expenditures have been allocated on an annualised basis to their relevant time periods (either short-term or medium-term) due to the lack of information available at this point on individual project start/completion times within the periods.
 - 5.4 It is noted that the short-term capital expenditure projects (relating to in particular transport, water and communications) presently account for 22% of currently proposed total capital spending, medium-term projects 53% and long-term projects the balance of 25%. The total capital expenditure involved is approximately \$78.4 million. Total project operating expenditure for the 30-year period is estimated at approximately \$73.7 million in current dollar terms.
 - 5.5 **Appendix 1** contains the base economic impact multiplier results for the West Coast region, prepared by Hughes Economics. Separate regional multiplier results for the different Punakaiki development sectors and their associated capital and operational expenditures, have been calculated. ESL (Economic Solutions Ltd) has then applied the multipliers to the relevant project expenditures in order to determine overall economic impacts for the planning period. It is noted
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that Hughes Economics has generated the range of multiplier results on the basis of an assumed \$1 million of capital or operational spending (direct impact).

- 5.6 The following multiplied regional economic impacts of the direct capital expenditures for the overall development period have been calculated as follows (in present dollar terms):
- A total Revenue (Turnover) impact of \$153 million.
 - A total Net Household Income impact of \$22 million.
 - A total Employment impact of 421 persons/labour-years.
 - A total Value Added/regional GDP (Gross Domestic Product) impact of approximately \$39 million.
- 5.7 Total Revenue refers to the total value of the economic impact including the value of supplies of goods and services imported into the region. Net Household Income refers to the additional total net or disposable household income generated throughout the West Coast region by the various Punakaiki development projects, during their respective implementation periods. Employment refers to the total full/part time employment impact of the project expenditure, measured in labour-years (construction work) and persons/jobs (operational expenditure). Value Added/regional GDP refers to the additional economic activity generated within the region as a result of the development and operational expenditure, and provides the best measure of the overall economic growth/activity impact within the region.
- 5.8 ESL has also calculated the following total multiplied regional economic impacts of the annual operating expenditures associated with the proposed new capital developments, for the 30-year period:
- A total Revenue (Turnover) impact of \$124 million.
 - A total Net Household Income impact of \$17 million.
 - A total Employment impact of 365 persons/jobs.
 - A total Value Added/regional GDP (Gross Domestic Product) impact of approximately \$36 million.
- 5.9 As the above results indicate, total operating expenditure associated with the proposed new Punakaiki infrastructural, services, tourism and other developments is estimated to have an overall economic activity (Value Added/GDP) impact for the West Coast region of \$36 million and a total employment impact of 365 persons.
- 5.10 The above economic impact results assume relatively stable multiplier levels applying during the long-term planning period. It is also noted that the results reflect the wider West Coast region economic impacts of the proposed expenditures, rather than just the impact situation for the Punakaiki area. This is consistent with the iconic regional tourism importance of the Punakaiki Marine Reserve and the overall regional importance of the Punakaiki development project.
- 5.11 Over the 30-year period, the total Revenue (or Turnover) economic impact of the combined capital and operating expenditure is approximately \$277.2 million in current dollar terms. In discounted 2019 dollars and assuming a discount rate of 6%, the total Revenue impact is approximately \$154 million. The total Value Added/GDP economic impact of the combined
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capital and operating expenditure is approximately \$79.4 million in current dollar terms. In discounted 2019 dollars, the total Value Added/GDP impact is approximately \$43.8 million.

- 5.12 *Section 4 of Appendix 1* summarises the various capital and operating expenditure multipliers for the six relevant development sectors for the Punakaiki project, as generated by the West Coast model. Referring specifically to the Revenue economic impact measure, *Table 11* in that appendix indicates that the economic impact multipliers for the various capital expenditure projects range from 1.63 to 2.05. The multipliers are greater than a factor of 2 for the proposed new water/wastewater and coastal erosion management assets. In the case of these developments, this infers total flow-on benefits during the 30-year period of in excess of \$2 for every \$1 of new capital expenditure or cost. *Table 12 of Appendix 1* presents the different economic impact multiplier results for the operational expenditure sectors; the Revenue impact multipliers range from 1.21 for the communications sector to two or above in relation to the visitor servicing, coastal erosion management and new community centre operations.
- 5.13 Taking into account combined capital and operating expenditure over the 30-year period, the total Revenue multiplier has been calculated at 1.82 in current dollar terms and 1.85 in discounted 2019 dollar terms. The latter figure implies total economic impact flow-on benefits of \$0.85 for every dollar of new capital and operating cost/expenditure incurred during the period. Thus, whilst the expenditures will generate positive flow-on revenue impact gains for the region, nevertheless, these will overall be less than the direct expenditure outlays.
- 5.14 However, this economic impact assessment approach does not take into account the positive effects of future population and visitor spending growth in Punakaiki likely to result from the implementation of the various infrastructural and other development proposals for the area. These factors are separately considered in the next section of the report.

6. Further Benefit-Cost Assessment

- 6.1 As mentioned earlier in the report, the overall goal of the Punakaiki master plan project is to significantly strengthen the underlying infrastructural and services network and quality in the area, in order for it to better support growth within the local community and also contribute to meeting the needs of significantly increasing tourism to the area in the future.
- 6.2 It is considered that the positive impacts of the development proposals presently included in the plan will be seen in a range of interrelated ways, including population/household growth in Punakaiki, business growth (including tourism servicing enterprises) and increased visitor spending.
- 6.3 Following consideration of different scenarios for potential long-term demographic growth in Punakaiki, ESL has concluded on an overall population growth level in the range 70-150 (80%-170% above the current population estimate), with an additional household growth implication of approximately 30-60. This Medium to High demographic growth outlook range takes into account a number of relevant considerations, including the comparative impacts of a continuation of the low population growth track of the past two decades without the major infrastructural and other upgrades required in the community, the actual implementation of
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these upgrades, additional and upgraded servicing of tourism to the area required in the future, provision in the proposed development plan for some additional rural-residential housing capacity in the Punakaiki area and the fact that the area's labour requirements will continue to be partly met by people residing outside the area.

- 6.4 The annually reported Statistics New Zealand regional income measure of average weekly total personal income is used in this report to 'proxy' future population/household growth in Punakaiki over the long-term planning and development period. Historical Census income information was used in order to estimate the Punakaiki area historical trend for the above income indicator relative to the total West Coast region situation. The underlying historical growth trend for the income indicator in Punakaiki was then used for the purposes of forecasting the trend over the 30-year period ahead. It is noted that this income indicator covers all main income categories, including wage and salary incomes; it is therefore a relevant indicator in relation to the local business growth impacts of the Punakaiki development proposals.
- 6.5 In respect of visitor spending, ESL has prepared base Punakaiki area growth forecasts for this indicator, for a Status Quo/Low, Medium and High growth scenarios, for the 30-year period. These scenarios comprise as follows: Status Quo/Low growth- significant annual visitor growth, a limited number of local overnight-stay visitors (5%) and gradually increasing average daily visitor spend; Medium growth reflecting an increase (to 6.5%) in the proportion of visitors staying overnight in the area; and High growth reflecting a further increase (to 8%) in the proportion of local overnight-stay visitors.
- 6.6 The different growth scenarios show total visitor spending over the period increasing from approximately \$4 million in year 1 to in the range \$14 million (Low growth forecast), \$18 million (Medium growth forecast) to \$23 million (High growth forecast) by year 30, that is, an overall gain in the range \$10 million-\$19 million for the period.
- 6.7 Taking into account the forecast growth over the interval in total community income and local visitor spending, the benefit-cost ratio for the proposed total new development and associated operational expenditure in the Punakaiki area ranges from 1.89 for the status quo/Low growth forecast, 2.35 for the Medium growth forecast, to 2.84 for the High growth forecast, in discounted dollar terms.
- 6.8 Adding the above two indicators to the Punakaiki area's very limited share of the total West Coast region Revenue economic impact flow-ons, results in a slight increase in the above ratios to Low 1.90, Medium 2.36 and High 2.85.

7. Overall Benefit-Cost Assessment

- 7.1 The economic impact multiplier analysis in section 5 of the report indicates an overall West Coast region Revenue multiplier figure for the proposed total Punakaiki capital and operating expenditure over the 30-year forecast period of 1.85. Thus, every dollar of expenditure or cost incurred during the period will return \$0.85 cents of economic impact flow-on benefit to the region, in discounted terms.
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- 7.2 However, when the forecast annual growth levels in combined Punakaiki area total personal income, visitor spending and economic impact Revenue flow-ons over the period are taken into account, the resulting economic benefit-cost ratios are a Low growth scenario level of 1.90, a Medium scenario level of 2.36 and a High scenario level of 2.85, in discounted 2019 dollar terms. The Medium and High growth scenarios in particular, in terms of the growth indicators used, will thus generate economic benefits to the area significantly in excess of the combined expenditure outlay.
- 7.3 As noted earlier in the report in section 4.4, the implementation of the various development proposals for Punakaiki will also generate some other valuable gains for the area. These include improved health outcomes for residents and visitors (water and wastewater treatment), improved safety conditions for pedestrians and motorists, increased local recreational opportunities and environmental enhancements (cycleways, habitat protection and coastal erosion protection) and improved social interaction opportunities (increased local communications quality and the proposed new community centre/hub). Whilst these gains are partly catered for in the population and visitor spending growth factors, nevertheless, they also provide important additional benefits in their own right.
- 7.4 *Taking the above points into account, this report considers that an appropriate benefit-cost ratio for the proposed Punakaiki developments, for the 30-year period, lies within the range 2.5-3.0. That is, the total value of the local and regional benefits expected to be generated over the period by the developments will outweigh their direct costs by a factor of 2.5 (Medium growth scenario) to 3.0 (High growth scenario where all the developments are in fact implemented).*
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Appendix 1

PUNAKAIKI INFRASTRUCTURE PROJECTS: COST/BENEFIT ESTIMATES

Dr Warren R Hughes, Consulting Economist, Parnell, Auckland trading as HUGHES ECONOMICS

1. INTRODUCTION

The following analysis relates to cost/benefit estimates for various development projects proposed for the Punakaiki region on the West Coast of New Zealand. The analysis is based on a 106-sector economic model for the West Coast Regional Council (RC) economy, for the year ended December 2017. The model itself is based on Employment Count data compiled by Statistics NZ as at February 2017 which is the latest available data for the 106 sectors in the regional economic model.

2. STATISTICS FOR THE WEST COAST ECONOMY

The following presents statistics for the West Coast economy, for the year ended December 2017.

GROSS REGIONAL PRODUCT

West Coast RC economy year ended December 2017

EXPENDITURE (\$m)		INCOME (\$m)	
Household Consumption	1092.3	Net Household Wages	708.6
Central Government	314.9	Savings & Taxation	236.2
Local Government	40.3	Gross Operating Surplus	276.3
Gross Fixed Capital Formation	487.5	Depreciation	260.9
Stocks & Inventories	9.0	GST, Excise & Other Taxes	233.9
Gross Regional Expenditure	1943.9		
Plus Exports	1750.4		
Less Imports	-1978.3		
Gross Regional Product	1715.9	Gross Regional Product	1715.9

The gross regional product at \$1,715.9 m (regional GDP) compares with a Statistics NZ estimate for West Coast GRP of \$1,665 m for the year ended March 2017. Note that the Gross Operating Surplus above for businesses is before company etc. taxation.

Other Statistics

West Coast RC population as at June 2017 32,500

West Coast RC Employment Count as at Feb 2017 13,946

Value added per EC 1715.9 m/13,946 or \$123,039. NZ Value Added per EC is \$130,777.

Gross household salaries & wages = 708.6 + 236.2 = 944.8 or per capita salary 944.8 m/32,500 = \$29,071

Household Regional GST = 0.15 x 1092.3 = \$163.8 m which is included in the \$233.9 m above

Major exports for the West Coast economy to overseas or other NZ regions include coal mining \$237 m and dairy manufacturing at \$664 m.

The economic model was utilised in estimating the Cost/Benefit ratios detailed below.

3. IMPACT TEMPLATES WITH MULTIPLIERS & COST/BENEFIT RATIOS FOR PUNAKAIKI DEVELOPMENTS

All impacts use a \$1 m direct impact spread over one or more sectors for both DEVELOPMENT/CONSTRUCTION and OPERATIONAL impacts. Impacts for the various Punakaiki projects are detailed below.

WATER RELATED

Construction

TABLE 1: CONSTRUCTION IMPACTS FOR WATER PROJECTS FOR THE WEST COAST ECONOMY

Impact Round	Revenue \$ millions	Net Household Income \$ m	Employment Persons	Value Added or GRP \$ m
Direct cost for \$1 m into NBC 0.5 NRB 0.25 CS 0.25	1.00	0.15	2.21	0.25
Flow-ons from supplying sectors	1.01	0.13	2.39	0.27
TOTAL IMPACTS FOR THE WEST COAST ECONOMY	2.01	0.28	4.60	0.52
West Coast Regional Multiplier	2.01	1.87	2.08	2.08

NBC = Non-Building Construction NRB = Non-Residential Building CS = Construction Services

Operations

TABLE 2: OPERATIONAL IMPACTS FOR WATER PROJECTS FOR THE WEST COAST ECONOMY

Impact Round	Revenue \$ millions	Net Household Income \$ m	Employment Persons	Value Added or GRP \$ m
Direct cost for \$1 m into Local Government	1.00	0.35	10.21	0.61
Flow-ons from supplying sectors	0.87	0.10	2.56	0.28
TOTAL IMPACTS FOR THE WEST COAST ECONOMY	1.87	0.45	12.77	0.89
West Coast Regional Multiplier	1.87	1.29	1.25	1.46

TRANSPORT ROADING & PARKING

Construction

TABLE 3: CONSTRUCTION IMPACTS FOR TRANSPORT etc. FOR THE WEST COAST ECONOMY

Impact Round	Revenue \$ millions	Net Household Income \$ m	Employment Persons	Value Added or GRP \$ m
Direct cost for \$1 m into NBC 0.75 & Con Serv 0.25	1.00	0.16	2.43	0.29
Flow-ons from supplying sectors	0.98	0.12	2.30	0.27
TOTAL IMPACTS FOR THE WEST COAST ECONOMY	1.98	0.28	4.73	0.56
West Coast Regional Multiplier	1.98	1.75	1.95	1.93

Operations

TABLE 4: OPERATIONAL IMPACTS FOR TRANSPORT etc. FOR THE WEST COAST ECONOMY

Impact Round	Revenue \$ millions	Net Household Income \$ m	Employment Persons	Value Added or GRP \$ m
Direct cost for \$1 m into NBC 0.5 Tran Sup Serv 0.5	1.00	0.09	1.44	0.22
Flow-ons from supplying sectors	0.59	0.08	1.38	0.16
TOTAL IMPACTS FOR THE WEST COAST ECONOMY	1.59	0.17	2.82	0.38
West Coast Regional Multiplier	1.59	1.89	1.96	1.73

COMMUNICATIONS

Construction

TABLE 5: CONSTRUCTION IMPACTS FOR COMMUNICATIONS FOR THE WEST COAST ECONOMY

Impact Round	Revenue \$ millions	Net Household Income \$ m	Employment Persons	Value Added or GRP \$ m
Direct cost for \$1 m into NBC 0.5 Adv Mkt Cons 0.5	1.00	0.11	1.71	0.19
Flow-ons from supplying sectors	0.63	0.08	1.50	0.17
TOTAL IMPACTS FOR THE WEST COAST ECONOMY	1.63	0.19	3.21	0.36
West Coast Regional Multiplier	1.63	1.73	1.88	1.89

Operations

TABLE 6: OPERATIONAL IMPACTS FOR COMMUNICATIONS FOR THE WEST COAST ECONOMY

Impact Round	Revenue \$ millions	Net Household Income \$ m	Employment Persons	Value Added or GRP \$ m
Direct cost for \$1 m into Advert Mkting & Consulting	1.00	0.07	1.20	0.11
Flow-ons from supplying sectors	0.21	0.02	0.53	0.06
TOTAL IMPACTS FOR THE WEST COAST ECONOMY	1.21	0.09	1.73	0.17
West Coast Regional Multiplier	1.21	1.29	1.44	1.55

COMMUNITY CENTRE

Construction

TABLE 7: CONSTRUCTION IMPACTS FOR THE COMMUNITY CENTRE FOR THE WEST COAST ECONOMY

Impact Round	Revenue \$ millions	Net Household Income \$ m	Employment Persons	Value Added or GRP \$ m
Direct cost for \$1 m into NBC 0.5 & Construct Ser 0.5	1.00	0.17	2.63	0.29
Flow-ons from supplying sectors	0.90	0.11	2.14	0.25
TOTAL IMPACTS FOR THE WEST COAST ECONOMY	1.90	0.28	4.77	0.54
West Coast Regional Multiplier	1.90	1.65	1.81	1.86

Operations

TABLE 8: OPERATIONAL IMPACTS FOR THE COMMUNITY CENTRE FOR THE WEST COAST ECONOMY

Impact Round	Revenue \$ millions	Net Household Income \$ m	Employment Persons	Value Added or GRP \$ m
Direct cost for \$1 m into Travel & Tour Services	1.00	0.31	6.28	0.54
Flow-ons from supplying sectors	1.05	0.16	3.48	0.37
TOTAL IMPACTS FOR THE WEST COAST ECONOMY	2.05	0.47	9.76	0.91
West Coast Regional Multiplier	2.05	1.52	1.55	1.69

COASTAL EROSION MANAGEMENT

For this project, all direct costs go into the Non-Building Construction sector. Thus impacts for both Construction and Operational impacts for a \$1 m direct cost are shown in Table 9.

TABLE 9: CONSTRUCTION & OPERATIONAL IMPACTS FOR COASTAL EROSION FOR THE WEST COAST ECONOMY

Impact Round	Revenue \$ millions	Net Household Income \$ m	Employment Persons	Value Added or GRP \$ m
Direct cost for \$1 m into Non-Building Construction	1.00	0.14	2.23	0.28
Flow-ons from supplying sectors	1.05	0.14	2.46	0.29
TOTAL IMPACTS FOR THE WEST COAST ECONOMY	2.05	0.28	4.69	0.57
West Coast Regional Multiplier	2.05	2.00	2.10	2.04

SERVICING VISITORS

Construction (The Construction template is given in Table 7, the same as for the Community Centre.)

Operations

TABLE 10: OPERATIONAL IMPACTS FOR VISITOR SERVICING FOR THE WEST COAST ECONOMY

Impact Round	Revenue \$ millions	Net Household Income \$ m	Employment Persons	Value Added or GRP \$ m
Direct cost for \$1 m into Accommodation 0.3 Food & Bev 0.3 Road Trnspt 0.2 Sport & Rec 0.2	1.00	0.25	9.77	0.46
Flow-ons from supplying sectors	1.00	0.11	2.50	0.30
TOTAL IMPACTS FOR THE WEST COAST ECONOMY	2.00	0.36	12.27	0.76
West Coast Regional Multiplier	2.00	1.44	1.26	1.65

4. **SUMMARY MULTIPLIERS AND COST/BENEFIT RATIOS BY PROJECT**

TABLE 11: CONSTRUCTION COST/BENEFIT RATIOS

Project	Revenue	Net Income	HH	Employment	Value Added
Water Related	2.01	1.87		2.08	2.08
Transport Roding & Parking	1.98	1.75		1.95	1.93
Communications	1.63	1.73		1.88	1.89
Community Centre& Others	1.90	1.65		1.81	1.86
Coastal Erosion	2.05	2.00		2.10	2.04
Servicing Visitors	1.90	1.65		1.81	1.86

TABLE 12: OPERATIONAL COST/BENEFIT RATIOS

Project	Revenue	Net Income	HH	Employment	Value Added
Water Related	1.87	1.29		1.25	1.46
Transport Roding & Parking	1.59	1.89		1.96	1.73
Communications	1.21	1.29		1.44	1.55
Community Centre& Others	2.05	1.52		1.55	1.69
Coastal Erosion	2.05	2.00		2.10	2.04
Servicing Visitors	2.00	1.44		1.26	1.65

Dr WARREN R HUGHES - AUTHOR PROFILE

The author is Cambridge, NZ born and a graduate of both the University of Auckland and Indiana University in the USA, where he completed his doctorate in Business Economics and Public Policy in 1970.

Since that time, he has taught in the areas of econometrics, forecasting, financial economics and managerial strategy at The University of New South Wales in Sydney (1970 – 1978) and most recently at The University of Waikato (1978 – 2007). At various times, he has taught in MBA programmes at the University of Florida in Gainesville and in the Graduate School of Management at the University of California at Irvine. Dr Hughes retired from the University of Waikato in 2007 and was appointed an Honorary Fellow in Economics in 2008. At the present time, he works as an independent economic consultant based in Auckland.

The author has published extensively, mainly as single-authored articles in international journals such as *Decision Sciences, Theory and Decision, The Journal of Business, Mathematical & Computer Modelling, Environment & Planning, Australian Journal of Management, Forest Science, Australasian Journal of Regional Studies, OMEGA* and the *Chinese Business Review*. Other articles on theoretical and applied economics have been published by the author in *NZ Economic Papers* and *Australia's Economic Record*.

The author has developed a particular expertise in the area of impact and regional analysis. He was the Editor/Manager of the *Regional Economic Bulletin*, which focused on topical issues relevant to the business and wider communities, mainly but not exclusively, in the Waikato and Bay of Plenty regions.

The author has acted as a consulting economist for *Economic Solutions Limited, Environment Waikato, Carter Holt Harvey Limited, Contact Energy, Norske Skog Tasman Limited, Port of Tauranga Limited, Port of Napier, Feltex Carpets Limited, Man'O War Farm Limited, Refining NZ Limited, Zespri International, Waikato Innovation Park, Property Council of NZ, Creative Napier, Katolyst, Priority One BOP, Vision Manawatu, Enterprise Franklin, Venture Taranaki*, various District Councils in the Waikato, Bay of Plenty, Hawkes Bay and other regions and for events such as NZ's *National Fielddays™*, *Tauranga's Montana Jazz Festival, Balloons Over Waikato* and *Napier's Art Deco Weekend*.

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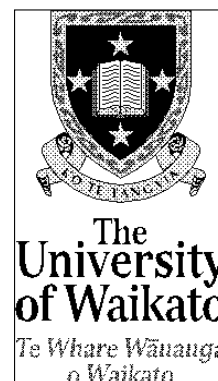
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Appendix D Cost Estimates

Theme	Sub theme	Intervention	Capex	Opex	Core/Optio nal/Desirab le	S/M/L	Capex comment	Opex comment	Owner (BDC, DOC, NZTA, GDC, WCRC)
Water	Source	Potential sourcing from Pororari or Punakaiki River and roof water. Detailed review required.	\$ 200,000.00		Core	Short term	To cover separate study on water supply		BDC
Water	Treatment	Improvements to the existing water treatment including new treatment plant.	\$ 3,200,000.00	\$ 100,000.00	Core	Short term	Assumes filtration plus cartridge plus UV plus chlorine for 400m3/day - \$2.33 mill (John Cocks report 2008) x 1.03 each year	\$1000 per week, plus \$50k mtce and materials and power	BDC
Water	Storage	Increase existing water storage above Hartmount Pl, behind Dolomite Pt, Cattle Reserve & via tanks at each property.	\$ 400,000.00	\$ 20,000.00	Core	Short term	RWTP 1000m3 steel approx \$400k 3 years ago - would be more for concrete and remoteness. A pro-rata estimate for a Greymouth estimate is \$500k, and a low estimate is \$300k excluding site specific constraints, so \$400k mid range.		BDC
Water	Supply	Upgrade existing pipe network & introduce water metering system (user pays).	\$ 500,000.00	\$ 10,000.00	Core	Short term			BDC
Water	Supply	Introduce water conservation initiatives & education.			Core	Short term			
Wastewater	Compliance	Improve compliance of wastewater systems and consider implementing a treatment plant at Village.	\$ 30,000.00	\$ 5,000.00	Core	Short term			BDC
Wastewater	System	Retain individual wastewater systems, implement grey water diversion at Punakaiki Village and pump settled wastewater to new treatment plant.	\$1,400,000	\$100,000	Core	Medium term	Waiting on confirmation from Glenn for waste water preferred option. He was going to talk to the Mayor about the way forward. Glenn has been advised that there may be an obligation that if BDC supplies 1 of the three waters, they may need to provide all 3		BDC
Transport	Parking	Local Punakaiki shuttle service	\$530,000	\$340,000	Core	Short term	Capital cost shuttle \$80k, 6 return trips per day, 7 d/ wk	operational \$2/km, \$300k pa, no fare recovery allowed for.	Local Provider
Transport	Parking	Redesign parking at Dolomite Point			Core	Short term	allow \$100k mainly marking and signage.	\$5k maint	DOC / DPRP
Transport	Parking	More parking at Dolomite Point			Core	Short term	Allow 28 campervans, 6 buses, 3000m2 of pavement construction \$250k	maint \$20k	DOC / DPRP
Transport	Parking	Improve parking area at Truman Track			Desirable	Short Term	allow \$75/m2 for construction, total \$100k,	\$10k maint pa	NZTA
Transport	Parking	No RHS parking			Core	Short term		Maint of road marking / signage \$5k	DOC / DPRP
Transport	Pedestrian safety	Designated crossing points	\$12,720,000	\$650,000	Core	Short term	4 of. \$30k each, \$120k total	Maint.\$2.5k each pa	NZTA
Transport	Pedestrian safety	Introduce off-road pedestrian & cycleway linking communities from Charleston to Barrytown (reinstate existing off-road track from Village to Te Miko) and connecting the new Paparoa Track ends at Punakaiki & Pororari River bridges.			Desirable	Medium term	Allow \$250/m for construction, incl TTM alongside SH. Distance linking communities is 30km. Cost \$7.5m	Maint. \$500k pa	NZTA and Regional Transport Committee
Transport	Pedestrian safety	Footpath from Hartmount Pl to Punakaiki			Desirable	Short term	Dist 2km, allow @ \$250/m + \$500k for clip on to 60 m bridge. \$900k total.	Maint @\$30k pa	NZTA
Transport	Pedestrian safety	Widen shoulder for walking/cycling			Core	Short term	Widen shoulder by 1.5 m each side. Allow \$200/m run each side. Allow for SH TTM. Length 10km. Cost \$4M.	Maint @\$100k pa	NZTA
Transport	Pedestrian safety	Safety improvements at Punakaiki Cavern			Core	Short term	Allow \$200k .	Maint @ \$10k. Pa	NZTA
Transport	Speed limit	Reduce existing speed limit to 50km/h from Pororari River to Razorback Point. (extent TBC)	\$ 30,000.00	\$ 3,000.00	Core	Short term			NZTA
Transport	Speed limit	Reduce speed limit from 100km/h to 80km/h. (extent TBC - south of McMillian?)			Core	Short term	Allow \$20k for assessment & report, \$10k for new signs	\$3k pa for maint of signs and markings	NZTA
Transport	Road	Gateway experience creating a sense of arrival to the Punakaiki area. (to align with geographical features & change in speed limit)	\$11,700,000	\$480,000	Desirable	Short term	\$50k each, allow 4, total \$200k,	Maint @ \$20k pa	BDC
Transport	Road	Develop long term plan for security of SH access between Whitehorse and Motukiekie			Core	Short term	Allow \$100k		NZTA
Transport	Road	Safety improvements to reduce hazard risk (e.g. rockfalls)			Core	Short term	Depends on what required and what the problem is. Allow \$1m.	Maint @ \$100k pa	NZTA
Transport	Road	Signage/linemarking to reinforce visiting driver safety					Allow \$300k ,	Maint @ \$20k pa	NZTA
Transport	Road	Protect road reserve vegetation along SH6			Desirable	Medium term	Allow \$100k,	Maint @ \$50k pa	NZTA
Transport	Road	Cycle connection between Paparoa track ends (Punakaiki to Pororari bridges)			Core	Short term	\$250k/km - 4 km long \$1m.	Maint @ \$40k pa	
Transport	Road	Cycle way to conservation volunteers site			Desirable	Medium term	\$250k/km - 6 km long \$1.5m.	Maint @ \$50k pa	
Transport	Road	Off-road cycle link to proposed Charleston cycleway			Optional	Long Term	\$250k/km - 30 km long \$7.5m.	Maint @ \$200k pa	
Communication	UFB/mobile	Supply UFB & mobile phone coverage by all suppliers to entire site area.	\$ 2,700,000.00	\$ 100,000.00	Core	Short term	Cost estimates based on Chorus information. Estimated number of connections and assumed 2 towers		Crown Fibre NZ.
Communication	Civil defence	Ensure civil defence communications and systems are in place.	\$200,000		Core	Short term			WCRC
Communication	Postal services	Improve postal services including secure parcel collection location.	\$20,000		Core	Short term			NZ Post / BDC
Community centre	Facilities	Community Centre with civil defence capability, including facilities such as a covered market stalls area, local noticeboard, playground & possibly a skate park. (community centre location TBC)	\$500,000	\$30,000	Core	Medium term	Glenn advised \$500k realistic number		BDC / Community / Lotteries
Freedom camping	Permitted locations	Managed freedom camping location at existing Fox River site.	\$100,000	\$10,000	Core	Short term	Feedback from Glenn		BDC / MBIE
Freedom camping	Permitted locations	Managed freedom camping location at McMillan Road and Barrytown. (Nikau Reserve instead?)			Core	Short term			
Freedom camping	Facilities	Provision of information signage & toilet facilities.	\$400,000	\$70,000	Core	Short term			BDC / MBIE
Freedom camping	Excluded locations	Ban freedom camping from Irimahuhero Point to Razorback Ridge and special/natural areas, including river mouths. (extent TBC)	\$20,000		Core	Short term			
Freedom camping	Management	Community warden / compliance officer.	\$200,000	\$60,000	Desirable?	Short term		Actual costs \$60k advised by Glenn	BDC / MBIE

Theme	Sub theme	Intervention	Capex	Opex	Core/Optional/Desirable	S/M/L	Capex comment	Opex comment	Owner (BDC, DOC, NZTA, GDC, WCRC)
Freedom Camping	Management	Provide designated parking bays at permitted sites to manage numbers.			Core	Short term			
Freedom Camping	Management	Engage with Motor Home association to achieve a consistent solution for the Punakaiki area and along Coast Road.			Core	Short term			
Manage Access	Vehicle access	Ban vehicle access (including motorcycles) on beaches where birds nest & areas where habitats are under pressure.	\$ 5,000.00	\$ 1,000.00	Core	Short term	Advised by Glenn	Advised by Glenn	BDC / MBIE
Manage Access	Vehicle access	Restrict access to LINZ land near Pororari River to allow for regeneration.			Core	Short term			
Natural Environment	Management	Revise District plan provisions to prioritise protection of the environment. Develop visibility guidelines including controls of height & colour sympathetic to the surrounding national park context.	\$10,000		Desirable	Medium term			BDC
Natural Environment	Preserve habitat	Preserve habitat by protecting significant trees, limiting clear felling & ensuring management plans are enforced for road works.	\$30,000	\$5,000	Core	Short term			One District Plan (BDC, GDC, WCRC)
Natural Environment	Preserve habitat	Provide community transparency of rock quarry sources.			Core	Short term			
Natural Environment	Preserve habitat	Introduce community & visitor trapping programme.			Desirable	Medium term			
Residential growth	zoning	Allow for more permissive rural zoning to support residential growth	\$30,000		Desirable	Short term			One District Plan (BDC, GDC, WCRC)
Residential growth	Location	Limit development near petrel colony	\$20,000		Core	Short term			One District Plan (BDC, GDC, WCRC)
Coastal erosion	Manage	Maintain & expand seawall to protect road from coastal erosion.	\$5,000,000	\$100,000	Core	Medium term		Estimate \$500k every 5 years	WCRC / NZTA
Coastal erosion	Manage	Culverts under road for penguin habitat erosion			Core	Medium term			
Coastal erosion	Retreat	Following residential retreat of low-lying areas, consider temporary, eco-friendly accommodation (i.e. glamping) as an interim use until the land is eventually inundated.	\$12,000,000		Optional	Long term		Not sure how this works, but MAJOR ongoing costs to implement this - working with residents, developing new area, assisting with relocation, community info, etc	Private investors
Coastal erosion	Retreat	Undertake a needs analysis for relocation alongside a long-term evacuation plan. Budget has assumed relocate via swap to public land elsewhere in Punakaiki (Cattle Reserve). Potential cost to government as per 'red zone' example in Christchurch where land purchased by government and insurers pay for house repairs over \$100k (EQC).			Core	Medium term			WCRC
Servicing visitor demand	Facilities	DOC service hub at new Paparoa track ends (existing Pororari River track & Waikori Rd track) including cycle parking, toilet facilities, waste/rubbish disposal, shelter structures, drinking water fountains and visitor interpretation/information signage. Most costs assumed DOC because on DOC land. However \$15k Council (luggage storage, local information board, free wifi).	\$800,000	\$150,000	Core	Short term	J5/DOC basis est - toilet block at Dolomite, and somewhere else	Includes upkeep of facilities	DOC
Servicing visitor demand	Facilities	Improvements to existing facilities and services including toilets, waste/rubbish disposal & drinking water (DOC - on DOC land).			Desirable	Medium term			
Servicing visitor demand	Facilities	New/enhanced visitor centre with civil defence capability, to support education, postal services & provide visitor information, bookings etc. Additional offers such as free WiFi, luggage storage & phone charging (DOC).	\$25,600,000	\$100,000	Core	Medium term		Guess - mtce, cleaning, admin	DOC
Servicing visitor demand	Manage Visitor Demand	Winter concessions for Great Walk.	\$ 50,000.00		Optional	Short term			DOC, TWC, BDC and local businesses
Servicing visitor demand	Manage Visitor Demand	Broader range of activities during winter.			Desirable	Short term			
Servicing visitor demand	Manage Visitor Demand	Marketing to promote other attractions.			Desirable	Short term			
Total			\$ 78,395,000.00	\$ 2,334,000.00					

Appendix E NZTA Letter to Buller District Council Punakaiki Master Plan

6 December 2018

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Dear Glen

Re: Greater Punakaiki Community Master Plan Feedback

Thank you for the opportunity to provide feed on the Punakaiki Community Master Plan (GPMP). We support the work that has been done and applaud the effort that has gone into the development of the plan and look forward to working with all parties involved to progress the plan.

NZTA has reviewed the plan and the proposed funding splits for the GPMP. With the limited project detail provided, we provide the following general comments as to the funding implications for consideration under the national land transport fund (NLTF);

- The “core” short term work as proposed is an appropriate targeted investment and aligns well with the Government Policy Statement.
- NZTA will require further detail on the “medium” term walking and cycling projects to understand if they meet the criteria set out in the Investment Assessment Framework (IAF).
- The proposed funding splits for the GPMP need to be worked through in detail to understand if they are appropriate.
- The parking improvements at Truman Track are not likely to be eligible for NLTF.
- NZTA understand that some of the proposed projects have applied for Provincial growth funds and would seek that the proposed funding splits are updated to reflect this.
- Projects with total costs of less than \$1 million can likely proceed at pace through Low Cost Low Risk Programmes provided sufficient local share is available.

It should also be noted that any projects that will seek NLTF and over a total cost of \$1 million will be required to go through the business case approach and investment processes. Buller District Council is encouraged to engage with NZTA to work through this process early.

I would like to propose a set up a meeting to work through the outstanding issues to be able to provide more certainty going forward, to help progress the GPMP and provide guidance on what projects may be eligible to receive an enhanced FAR. This will enable the funding partners to be able to plan future budgets with certainty.

I suggest that you contact Andrew Washington, Principal Advisor, Partnership Investments on 03 966 7817 to arrange this.

Yours sincerely



Jim Harland
Director Regional Relationships South Island

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