

Ngāti Porou Hauora Community Facilities Redevelopment

FEASIBILITY INVESTIGATIONS FOR HOSPITAL AND COMMUNITY FACILITIES
REDEVELOPMENT, TE PUIA SPRINGS, EAST CAPE, NZ

May 2018



Independent Report Prepared by Impact Consulting Ltd

Commissioned by Ngāti Porou Hauora with
support from Lotteries Community Facilities Fund

About this Report

This report is an independent feasibility study for the proposed redevelopment of Iwi / community owned hospital facilities located at Te Puia Springs on NZ's East Cape.

The report has been prepared by Impact Consulting Ltd in order to provide a factual basis for decision making by management, stakeholders and funding partners with regards to the proposed redevelopment. This work has been commissioned by Ngati Porou Hauora with support from the Lotteries Significant Projects Feasibility Fund.

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“The springs at Te Puia have been a place of healing for many generations... a sanctuary of cultural significance...”

- For centuries Te Puia Springs has been a sanctuary of cultural significance and healing for Maori. The site is particularly significant for Ngati Porou, but was also known as a place of peace, where Maori from other tribes and people in conflict, could come to heal in safety.



“From a Maori perspective, health is holistic; meaning that community social, spiritual, mental and economic outcomes are intrinsically tied to physical health. Ngati Porou Hauora’s vision is for a project which improve these overall community health and wellbeing outcomes.”

Executive Summary

Ngāti Porou Hauora have a bold vision to “significantly improve the health of their people within one generation”. This project is an invitation which seeks to draw other significant community stakeholders into this vision.

While this project’s primary focus is on the physical buildings and proposed amenities, it is important to note, that these form only a small part of NPH’s overall vision for regional improvement in health, social and economic outcomes for their community within one generation.

When we think of “health”, most people instantly think of preventing or curing physical sickness ie. a hospital. However, from a Māori perspective health is more about wellbeing. It encompasses much more than our bodies and is intrinsically linked to all we do, including our social interactions with others.

“Ngāti Porou Hauora wishes to redevelop the facilities at Te Puia Springs, including the rural hospital. This redevelopment is not to build a ‘bigger’ hospital, but rather redesign the existing infrastructure to unlock the potential for a more holistic community facility.”

“The facility will reflect Ngāti Poroutanga while serving all those who live in the rohe. It will be a space for supporting community initiatives, connectedness, innovation and enterprise.”

Project Objectives

1. Enhancement of intergenerational health and wellbeing, through improved service configuration and facilities.
2. Leverage of available assets to help support economic development, employment and enterprise, including establishing an enterprise hub / co-working space, establishment of training opportunities and better utilisation of the on-site kitchen.
3. Development of closer ties with Universities to establish a Centre of Excellence for Māori and Rural Health, including teaching, research, innovation and sustainability opportunities.
4. Leverage the unique qualities of the site and its geothermal potential for rehabilitation and enhanced sustainability, as well as surplus land for social enterprise initiatives, community gardens and shared outdoor community spaces.

Key Project Drivers / Motivations

1. **Old Facilities, Expensive to heat and maintain //** Te Whare Hauora (hospital) at Te Puia Springs has facilities that are old, expensive to maintain and although still providing quality care, they are in need of a substantial upgrade.
2. **Service Delivery Efficiencies //** The current hospital facilities are expansive, not suited to their current use and their lack of flexibility means they are not conducive to efficient service delivery. The fact that they are not up to modern standards, also means lower LTC patient numbers and reduced service efficiency.
3. **Community Revitalisation //** From a Māori perspective, health is holistic, meaning that community social and economic outcomes are intrinsically tied to physical health. NPH see this project as an opportunity to improve overall community health and wellbeing outcomes.
4. **Geothermal Resource Potential and Opportunities //** This natural asset is currently significantly underutilised.

Previous Work Undertake

This feasibility study fits within a wider body of work already undertaken. As such a key purpose of this report is to draw together the various strands of research and planning to provide a comprehensive picture and independent assessment of potential steps forward.

The following project stages have already been undertaken.

Completed Project Stages

- 2014-17 extensive stakeholder consultation, including a process of review of sustainability of East Coast Health Services that involved hui up and down the Coast and with staff, and other stakeholders, plus an Expert Group who visited. In addition to consultation with local pakeke (elders) and community members.
- 2014 Preliminary geotechnical assessment and report
- 2014 GNS thermal resource summary
- 2015 GNS review of thermal spring resource potential, possible uses and applications
- 2015 Ngati Porou Hauora Economic Impact Analysis - Berl
- 2016 Chow Hill Architecture Concept Plans
- 2016 health status benchmarking report - Ngati Porou Hauora Dashboard

Hospital Provision

- There is an agreed need for hospital services on the East Coast. As argument can always be made, for service reduction and cost savings on one side, or service provision increases on the other, assessment was made of hospitals in other rural communities with similar population catchments to gain a more independent perspective. Findings showed an average of 9.3 Medical and Maternity Beds, plus an average of 12 LTC beds (9 when excluding larger facilities). These figures are similar to the proposed future service level for Te Puia Springs of 21 beds in total.

Hospital Upgrade Options

Main Options	Explanation and Implications	Preliminary Estimates
Option 1 Full Replacement with a purpose-built facility	This options is not considered realistically achievable without significant funding support.	\$10M-\$15M
Option 2 Replacement with a purpose-built building to deliver only core / minimal hospital services	This option is in line with solution proposed by East Coast Health Services review. However, realistic costs are around \$5.8M rather than the \$2.5M proposed when including professional fees, demolition, contingency (20%) and site preparation. This option does not align with the NPH Board vision or community consultation.	\$5.8M
Option 3 Mixed construction approach. Using new build, renovation and high quality transportable buildings. RECOMMENDED OPTION	Replacement of core hospital services with a purpose-built new build component, renovation of existing office spaces, removal of one wing of the existing building and replacement with x3 new high quality prefabricated transportable buildings. Aligns with NPH Board vision and community consultation, reduces investment risk and increase scalability, maintains current services while increasing efficiency. Gives scope for additional collaboration with other regional stakeholders for mutual benefit.	\$5.9M (Hospital components only. Includes allowance for heating system, but excludes geothermal pool and geothermal resource access costs).

Option 4 Renovation of existing facilities	Extensive renovation of existing facilities to bring them up to a modern standard, improve heat retention and functionality. Similar cost to new build, greater service disruption during construction. High exterior maintenance costs remain and restricted ability to scale services.	\$5M-\$15M (depending on extent of renovation and proportion of the building improved. \$5M would be equivalent to renovation and fit out of less than half the current facility).
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Figure 1

Reasons for the proposed utilisation of transportable buildings for some components

With any project involving significant capital outlay there are risks. In this case the key risks are:

1. Potential changes in service requirements, meaning scalability is important for future proofing. Transportable buildings give the ability to relatively easily scale service capacity up or down depending on future requirements, with minimal financial disadvantage.
2. Land movement. Te Puia Springs township is situated on a large slow moving land form, due to subsurface geothermal activity. While the majority of the hospital site has been deemed safe to build on, it is necessary to take into account the potential for future ground movement. Transportable buildings reduce this risk, as floor levels can be adjusted.
3. Potential cost escalations and service disruptions. Transportable buildings reduce project variables as they are completed at a fixed price, are much less likely to have design changes or variations. They limit the need for onsite labour and travel expenses, while also reducing construction noise and reduce the potential period of service disruption.

Operational Impact

As overall hospital operational funding streams are complex and tied to specific service delivery / staffing requirements, these have not been assessed in depth. These are assumed to remain relatively constant based on a similar capacity facility. NPH are currently looking to complete a separate detailed business case project, in which savings and other service efficiencies would be explored in more depth. The anticipated net cost saving effect of the proposed redevelopment, from an operation cost perspective, is estimated to be around \$100K per annum. Additional savings are likely via staffing efficiencies.

Proposed Partnership – Additional Whole of Project Partnership Inclusions

This project looks to draw together a number of significant community stakeholder organisation for mutual benefit and greater community impact. In doing so it is anticipated that there will be capacity to draw additional external funding than might otherwise be possible.

IMPORTANT NOTE: While preliminary discussions have taken place, the proposed partner organisations are yet to make any form of formal commitment to the project, due to needing to see a complete picture.

Proposed Inclusion	Summary	Rational / Benefits
Hot Pools PARTNERSHIP	Tourism focussed geothermal hot pools operation, utilising multiple stainless steel lined cedar tubs, owned by TRONPnui on Te Puia Springs Hotel land. Plus, upgrade of existing hospital pool.	<ul style="list-style-type: none"> Limited landscaping needed Good scope for collaboration Can be staffed by NPH hospital café staff during the day and Te Puia Springs Hotel staff in evenings Limited financial exposure and infrastructure can be relocated in future if needed Large scope for community and tourism growth / benefit over time
GDC Service Centre PARTNERSHIP	Relocation of the GDC Service Centre to within the redeveloped building	<ul style="list-style-type: none"> Shared reception and office resources enabling savings for both organisations. Reduced requirement to renovate existing earthquake prone building. Decreased chances of the hospital being relocated, and therefore, reduced risk of being expected to financially contribute towards a water treatment system in another location.
GDC Town Plan Inclusions PARTNERSHIP	Implementation of town plan inclusions such as an adventure playground, walking track and improved town signage.	<ul style="list-style-type: none"> Te Puia Springs town plan was scheduled for implementation in the next couple of years. Maximised community benefit and effectiveness of spending through hubbing of activities. Meeting community expectations and needs expressed during community consultation and planning.
Centre of Excellence for Maori and Rural Health PARTNERSHIP	Strengthened partnerships with research institutes and universities, via establishment of a centre of excellence	<ul style="list-style-type: none"> For Māori DNA is intrinsically tied to their Whakapapa and of great cultural importance. The centre will help NPH be kaitiaki of their people's health data. Increased research funding streams. Improved health outcomes for community.
Rongoā Museum and Reference Library PARTNERSHIP	A small Rongoā museum with interactive component where visitors make their own balm. Reference library of all studies NPH have been involved in, plus other Maori health and Rongoā publications.	<ul style="list-style-type: none"> History and interactive components of a Rongoā museum would add considerable strength and authenticity to the hot pools tourism offering. Increase recognition as knowledge centre for Maori Health. NPH strengthen position as kaitiaki of their people's health data and reporting outcomes. Potential for partnership with local Rongoā specialists and Pakeke (elders).
Shared Meeting Space PARTNERSHIP	Shared meeting space with video conferencing ability.	<ul style="list-style-type: none"> Helpful for remote participation in business courses. Helpful for teaching and medical student study activities. Useful for regional connectivity and hosting of small conferences or workshops.
Geothermal Greenhouses PARTNERSHIP	Geothermal capacity assessments, indicated that the water available has capacity to heat the majority of the proposed facility, plus multiple small hot tubs and still have enough surplus energy to heat around 2,000m ² of greenhouse.	<ul style="list-style-type: none"> Note: Development costs for the greenhouses themselves and associated pipework has not been factored into project costs, as it is assumed these would be funded by Hikurangi Enterprises. Inclusion of this component makes use of redundant land, shares geothermal system maintenance costs over a greater number of entities and creates critical mass of activity in the area, potentially opening up additional partnership opportunities.
Primary Sector Partners PARTNERSHIP	Potential for Primary Sector Partners to use the old laundry building as a pack house.	<ul style="list-style-type: none"> Makes use of an existing asset. Opens up possibilities around establishment of an onsite manuka nursery, utilising surplus land. Opens up opportunities for direct product sales via the proposed NPH hospital café and hot pools booking office.

Independent Assessment of Project Feasibility

Inclusion of these elements will enhance NPH's long term operational sustainability, reduce overhead costs and improved overall community outcomes. **The total project cost including the above components is estimated to be \$8.7M +GST.**

It is our view that this project is feasibility and realistically achievable. Additional project components have scope to be removed or added depending on the final position of potential partner organisations.

The key to project success, will ultimately be the level of partnership, effective working relationships and collaboration that can be fostered with key stakeholders such as the Ministry of Health, Hauora Tairāwhiti, Gisborne District Council and TRONPnui.

All these organisations ultimately have the same goal of healthy, prosperous communities and stand to directly benefit from each other's success. Finding common ground and mutually beneficial arrangements will be essential.

General Recommendations

- That consideration is given to reducing the number of proposed long term care beds in order to allow for the inclusion of retirement (non-hospitalised) beds, with capacity to expand if sufficient demand.
- That consideration is given to replacement of health centres in Puhi Kaiti (and potentially Ruatoria) with transportable buildings as part of the overall development project, in order to increase enrolments in Puhi Kaiti and improve service delivery in Ruatoria.
- That consideration is given to funding avenues for extension of the NPH research co-ordinator role to a full-time position.

Next Steps



Proposed Hospital / Community Facilities Redevelopment Approach



Whole Project – Proposed Inclusions

The following image outlines the proposed project inclusions.

IMPORTANT NOTE: While preliminary discussions have been undertaken with representatives from potential stakeholder groups and potential collaborators, **no formal commitments have been made by these parties, at this stage.** Formal confirmations of interest, will be sought in the next stage of development.

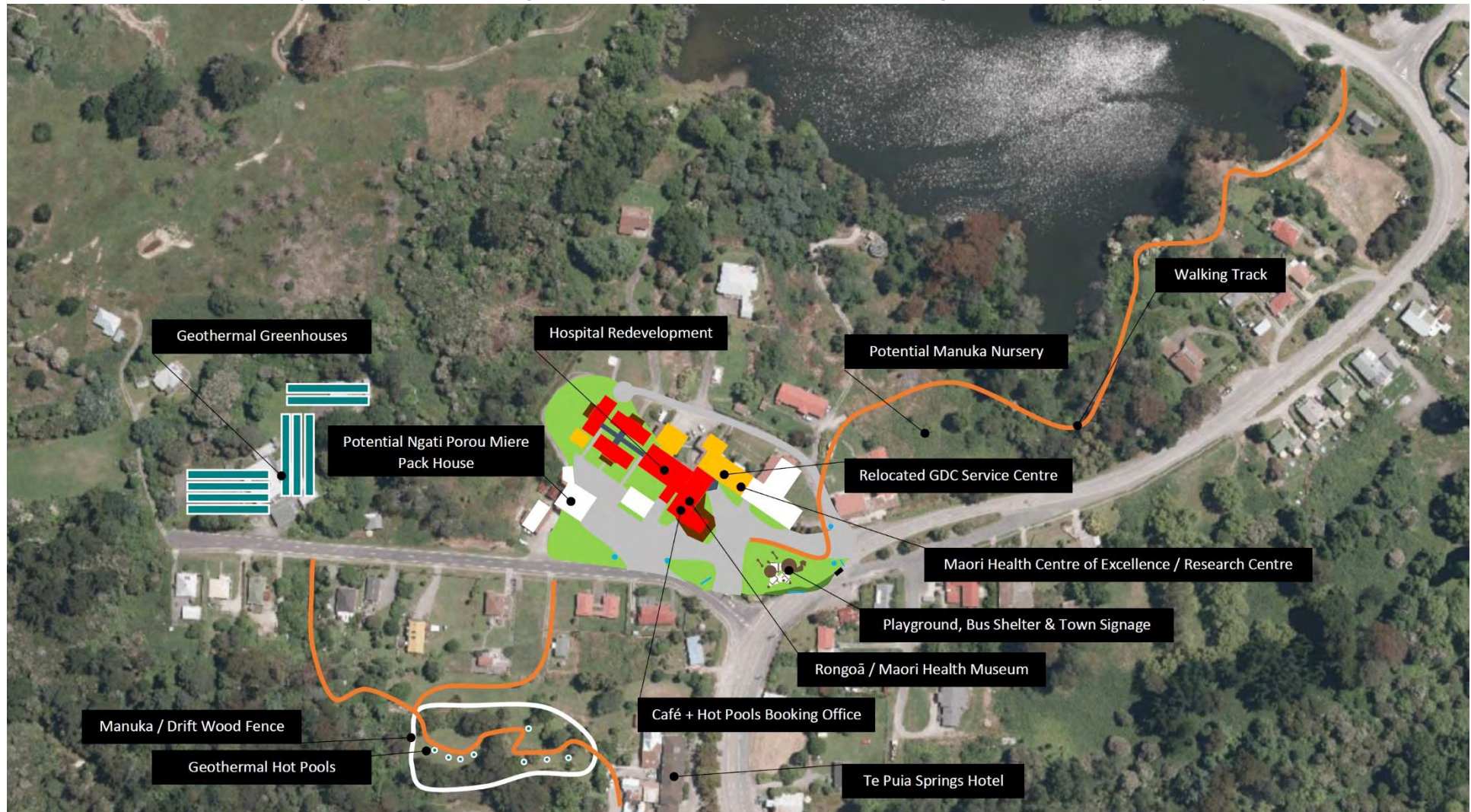


Figure 2

Redevelopment Whole Project – Proposed Inclusions

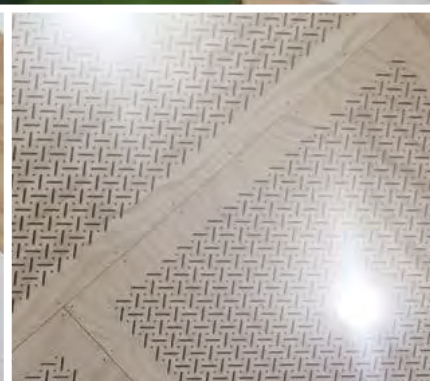
COMBINED NPH, TE PUIA SPRING HOSPITAL, GDC SERVICE CENTRE & TAWHITI CLINIC FOYER & RECEPTION
Proposed Lead Organisations: NPH + GDC



Image: Chow Hill NPH Concept Designs



Image: Chow Hill NPH Concept Designs



Images: GDC Service Centre Gisborne

Redevelopment Whole Project – Proposed Inclusions

NEW BUILD OF BASIC CORE HOSPITAL FACILITIES

Proposed Lead Organisation: NPH



Image: Chow Hill NPH Concept Designs

REHABILITATION, MATERNITY AND ELDERLY CARE + CAFÉ & KITCHEN UTILISING MODULAR HIGH QUALITY TRANSPORTABLE BUILDINGS

Proposed Lead Organisation: NPH (+ TRONPnui input in café development)



Image: www.leisurecom.co.nz

Redevelopment Whole Project – Proposed Inclusions

NPH OFFICE SPACES + CENTRE OF EXCELLENCE FOR MAORI AND RURAL HEALTH RESEARCH (RENOVATED)

Proposed Lead Organisation: NPH + Maurice Wilkins Centre



GDC SERVICE CENTRE + SHARED MEETING SPACE (RENOVATED)

Proposed Lead Organisations: GDC + NPH



Redevelopment Whole Project – Proposed Inclusions

PLAYGROUND AND TOWNSHIP IMPROVEMENTS

Proposed Lead Organisation: GDC



Image: Feasibility Concept Image - Impact Consulting

MAORI HEALTH REFERENCE LIBRARY & RONGOA MUSEUM

Proposed Lead Organisation: NPH



COMMERCIAL HOT POOLS DEVELOPMENT + UPGRADED HOSPITAL POOL

Proposed Lead Organisation: TRONPnui + NPH + Te Puia Springs Hotel + Te Whanau a Iritekura Whenua Topu Trust



Image: Feasibility Concept Image - Impact Consulting



GEOTHERMAL GREENHOUSES *(Note: Greenhouse related costs not included in project totals)*

Proposed Lead Organisation: Hikurangi Enterprises + Te Whanau a Iritekura Whenua Topu Trust



Image source: www.flexitunnel.co.nz

Ngāti Porou Hauora PHO provide primary health care to approximately 9,000 people, with over 56,000 GP consultations per year (including more than 5,000 annually for children under 5 years of age).

From an overall health service provision perspective, NPH show good results, with comparative results across most measures when compared against the Hauora Tairāwhiti DHB overall.

NPH service a much higher need and lower demographic population than the majority of health providers nationally and has outperformed both Tairāwhiti and New Zealand for the high needs populations on a number of measures.

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An Introductory Note from The Ngāti Porou Hauora Board

“Te Puia is a central part of our strategy for the future health and wellness for Ngati Porou on the East Coast. In an isolated region plagued by broken infrastructure and extreme socio-economic deprivation, our role extends far beyond the provision of health services. Given the impact of social determinants upon health status, we are, and must be, a solution provider, alongside other Ngati Porou entities and partners, spanning the spectrum of economic, social, cultural, health and wellness dimensions.”

Mā tōu rourou, mā tōku rourou, ka ora ai te iwi
With your contribution and mine, the people will prosper

Project Endorsements

“One hand on its own, can hold only a very small amount of water, when compared to what two working together have capacity for.”

Chinese Proverb from manager of Te Puia Springs Hotel



Gisborne District Council - TBC



Ministry of Health – TBC



Hauora Tairāwhiti – TBC



Te Wananga o Aotearoa – TBC



Sport Gisborne - TBC



University of Otago - TBC



University of Auckland – TBC

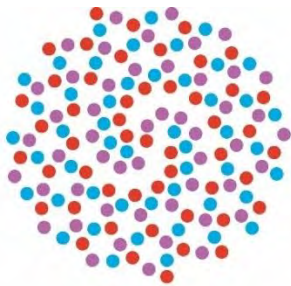
Te Puia Spring Hotel - TBC



Eastern Institute of Technology - TBC



Activate Tairāwhiti - TBC



Maurice Wilkins Centre - TBC

MAURICE WILKINS CENTRE
FOR MOLECULAR BIODISCOVERY



University of Waikato - TBC



Gisborne Chamber of Commerce - TBC



Hikurangi Enterprises - TBC

Ngati Porou Miere - TBC

Te Whanau a Iritekura Whenua Topu Trust - TBC

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Introduction

1. General Context

The geothermal springs at Te Puia Springs have been a place of healing for many generations of local Māori and first became the site of a commercial tourism bathing venture in 1901. In 1907 a major rural hospital was built on in the township, this was later expanded in response to a severe outbreak of Typhoid.

When the NZ Government began closing rural hospitals in the late 90's, Te Runanganui o Ngati Porou saw the need to maintain service levels for their people in isolated communities along the East Cape and in collaboration with hospital staff, set about establishing their own primary health organisation (PHO).

In 2011, the ownership of the public hospital was transferred to Ngāti Porou Hauora Charitable Trust (NPH / The Trust), the PHO health provider arm of Te Runanganui o Ngati Porou.

NPH are one of the largest employers on the East Coast supporting the equivalent of 150 full time jobs and generating an estimated \$14M to regional GDP from a direct health care operating spend of around \$9.6M¹. The Hospital and direct services accounts for around 20% of this funding and also serves as a base for a huge range of related activities, such as community mental health.

NPH falls under the Hauora Tairāwhiti (District Health Board) and is the sole health provider along an isolated 200km stretch of the coastline on the East Coast of NZ. The Trust have a total of six community health clinics along the East Cape, including one located in Gisborne's northern suburbs of Kaiti and one based within their hospital facility at Te Puia Springs.

The existing hospital facilities and potential development options for Te Puia Springs site are the core focus this feasibility report.

2. Proposed Project

NPH wish to redevelop their current facilities at Te Puia Springs in order to better serve their community. This includes better utilisation of the geothermal springs, along with several other key objectives which will see facilities become a space for supporting community initiatives, connectedness, innovation and enterprise, alongside their core health and wellbeing services.

Targeted outcomes include:

5. Enhancement of intergenerational health and wellbeing, through improved service configuration and facilities.
6. Leverage of available assets to help support economic development, employment and enterprise, including establishing an enterprise hub / co-working space, establishment of training opportunities and better utilisation of the on-site kitchen.
7. Development of closer ties with Universities to establish a Centre of Excellence for Māori and Rural Health, including teaching, research, innovation and sustainability opportunities.
8. Leverage the unique qualities of the site and its geothermal potential for rehabilitation and enhanced sustainability, as well as surplus land for social enterprise initiatives, community gardens and shared outdoor community spaces.

¹ Berl, Ngāti Porou Hauora Economic Impact Report 2015

While the current facilities are in the form of a hospital, NPH require adaption and redevelopment of these facilities to better reflect their wider vision, while also improving core services and health outcomes for their community.

The proposed project includes a redevelopment of existing facilities and infrastructure, with consideration for the needs and requirements of anticipated user groups and the NPH's wider objectives.

3. Project Background and Work to Date

The following project stages have already been undertaken.

Completed Project Stages

- *2014-17 extensive stakeholder consultation, including a process of review of sustainability of East Coast Health Services that involved hui up and down the Coast and with staff, and other stakeholders, plus an Expert Group who visited. In addition to consultation with local pakeke (elders) and community members.*
- *2014 Preliminary geotechnical assessment and report*
- *2014 GNS thermal resource summary*
- *2015 GNS review of thermal spring resource potential, possible uses and applications*
- *2015 Ngati Porou Hauora Economic Impact Analysis - Berl*
- *2016 Chow Hill Architecture Concept Plans*
- *2016 health status benchmarking report - Ngati Porou Hauora Dashboard*

Project Stages Planned or In Progress

- *Early 2018 Formal feasibility study including: (CURRENT PROJECT)*
 - *Updated geotechnical and geothermal site evaluation (CURRENT PROJECT)*
 - *Viability assessment, fundraising capacity and financial forecasting*
 - *Development inclusions and development cost assessment (CURRENT PROJECT)*
- *Early 2018 Health care business case development (awaiting Ministry of Health funding)*
- *Early 2018 Philanthropic platform and fundraising commenced.*
- *Late 2018/19 Project initiation.*

4. Project Key Drivers

This project is being led by the Ngāti Porou Hauora Board of Directors, with support of the Hospital CEO, staff and a part-time contracted development project employee. The key drivers for the project are:

1. Current Facilities

Te Whare Hauora (hospital) at Te Puia Springs has facilities that are old, expensive to maintain and although still providing quality care, they are in need of a substantial upgrade.

2. Service Delivery Efficiencies

The current hospital facilities are expansive, not suited to their current use and are not conducive to efficient service delivery.

3. Community Revitalisation

The communities serviced by NPH via their hospital facilities in Te Puia and six community health centres, are isolated rural communities. A lack of investment in rural areas over the post-war period has ultimately meant limited local opportunities and jobs. Added to this is a significant transition in land use, from farming to forestry, over the past 50 years, which has seen a reduction in regional population.

The combined socioeconomic effects, are one of the most significant contributors to poor health outcomes. This being seen in the fact that the East Cape resident population currently have the

highest level of premature mortality and some of the worst health outcomes in New Zealand². Employment options are still very limited, and average income is one-third less than the national average for New Zealand.

From a Māori perspective, health is holistic, meaning that community social and economic outcomes are intrinsically tied to physical health. NPH see this project as an opportunity to improve overall community health and wellbeing outcomes.

4. Geothermal and Health Tourism Opportunities

A unique feature of Te Puia is the natural geothermal hot springs which flow from the hillside surrounding the township and hospital site. This natural asset has historically been an integral part of Te Puia from a health care and therapeutic perspective, but is currently significantly underutilised due to the standard of facilities.

The geothermal resource is seen to hold significant potential for local health and rehabilitation, as well as potential for natural remedy and health tourism. A Chinese businessman has recently bought and refurbished the local hotel and is interested in partnering with NPH and the local community to provide authentic NZ experiences for his guests.

5. Feasibility Objectives

1. **Development plan:** To help NPH refine and clearly articulate their vision for the future development of their hospital facilities and associated physical amenities.
2. **Vision:** To help NPH articulate the linkages between their planned physical development inclusions and their bigger picture vision for regional health, social and economic change.
3. **Needs Assessment:** To collate existing evidence and community needs research findings, with additional stakeholder and anticipated user group consultation where needed, to ensure the proposed facilities will meet expressed community needs.
4. **Risk Minimisation:** To consider opportunities and challenges in relation to the planned development project to ensure its viability and reduce project risk. Including site suitability, development costs, funding capacity and operational sustainability.
5. **Independent Evaluation:** To present a realistic evaluation of possibilities and planned inclusions, while also helping to future proof the facilities for aspirational future developments or potential later stage inclusions.
6. **Recommendations:** Provide recommended next steps to enable NPH to make informed decisions and progress their project.

6. Feasibility Outcomes

- Independent reporting and recommendation based on research findings and evaluation of the available options.
- Ability for the NPH Board to make informed decisions with confidence, in regard to the next step for the redevelopment of their Te Whare Hauora facilities and site. Resulting in facilities which meet the needs of NPH and their patients, as well as those of additional facility user groups and wider stakeholders, as part of NPH's regional development objectives.

² <http://www.ngatiporou.com/sites/default/files/uploads/Dashboard%20Final%20Report%20March%202016.pdf>
Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

NPH Organisational Profile

7. Ngati Porou Hauora Vision, Mission and Values

Vision

“Kia tu pakari kei tua o kapenga” (Stand strong and strive for excellence)

Mission

“Each generation living longer than the last”

Values

“Our values of Ngati Poroutanga, Tikanga, Tiriti o Waitangi, Rangatiratanga, and Whakapakari will be reflected in everything we do. The principles of equity and equality; efficiency and effectiveness; participation and information; and access and affordability; will guide our service delivery.”

8. Brief Overview of Ngati Porou Hauora

Ngāti Porou Hauora (NPH) is the main provider of health services on the East Coast. It is an iconic Māori health institution with a long heritage and strong community support. It was originally established in 1995 as an Incorporated Society to provide an integrated health service for people residing within the Ngāti Porou rohe. At that time NPH was the only Iwi Health organisation in the country to offer hospital care, having inherited the hospital from the Ministry of Health. During the past 18 years NPH has grown to operate 7 community clinics, provide various public and clinical health services and employ over 200 people. From its inception in 1995 until March 2011, NPH was owned and managed by a board of elected community members representing the communities of the East Coast³.

Source: Review of health services on the East Coast

9. Brief Overview of Main Current Programmes

Te Puia Hospital

The hospital services include Medical and Nursing services, Acute Medical, Maternity inpatients, Community Midwifery, Long Stay Elderly Care, 24 hour Accident & Emergency, Specialist Outpatient Clinics, X-ray, Physiotherapy, Medical Records, Kitchen and Cleaning services and Property Maintenance. Te Puia Hospital also provides some specialist clinics, and clinical experience for student and trainee intern doctors.

Community Clinics (Primary Care)

Ngati Porou Hauora operates across a network of 6 clinics serving Ngati Porou communities - Matakaoa, Ruatoria, Tawhiti (at Te Puia), Tokomaru Bay, Tolaga Bay and Kaiti (prior to fire there was also a seventh clinic in Tikitiki). Each clinic offers a wide range of primary health services to whanau in these communities including medical consultations by general practitioners and nurses health promotion and screening programmes. Mama and Pepi programme provides additional support for young parents and their babies. A dental service is based in Ruatoria. Home-based support is provided through home care workers based in each community.

Mental Health and Addictions

A mobile team of psychologists, mental health specialist nurses, counsellors and the team's kaumatua are based at Te Puia but work across all the communities north of Tolaga Bay in the

³ Review of health services on the East Coast, <http://www.tdh.org.nz/assets/Media/Review-of-health-services-on-the-East-Coast.pdf>
Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

areas of adult mental health care, child and youth mental health, alcohol and other drug assessment and treatment, community-based elderly support.

Whanau Ora (Nati and Healthy)

In partnership with whanau, NPH runs a programme to look at longer term aspirations and broader aspects of health and wellbeing, as well as assisting whanau to meet immediate issues affecting their health. In 2016 the Whanau Ora team worked with 65 families and over the next year NPH will strengthen this partnership approach across all services. As part of the Healthy Families East Cape (HFEC) Collective (NPH, Hauiti Hauora, Whanau a Apanui, Ngai Tai, Whakatohea, Midland DHB and Turanga Health) NPH are implementing a systems approach to prevention, focussing on interventions in schools, workplaces and communities, using Māori frameworks specific to the different regions.

Huringa Pai

The Huringa Pai programme is run in partnership with community leaders and mentors, Sport Gisborne, Kaiti Schools, Super Grans, Tau Awhi, Ka Pai Kaiti, Ministry of Health and the Heart Foundation. The programme focuses on whanau who are pre-diabetic to stop the progression toward full blown diabetes. Huringa Pai encourages and facilitates physical activity and focuses on better eating. The Huringa Pai programme has been inspirational, motivational and has gained wider whanau, community and cross sector support. The “#964MoveWhanauHeart framework” is a call for action led and owned by individuals and whanau.

Research

NPH has for many years been involved in a range of research and evaluation initiatives that contribute to improving health outcomes for the people and developing the workforce.

Research and evaluation includes:

- multi-year projects in partnership with universities and other partners;
- short-term contributions to another organisation’s project; and
- internal service improvement projects, needs assessments and evaluations.

Research projects must be of specific benefit to Ngati Porou and contribute to achieving NPH strategic priorities for sustainable health gains and service development. NPH were the first health service to develop its own research policies and procedures, and are now national leaders informing the development of the New Zealand Māori research guidelines.

Source: NPH Draft Strategic Fundraising Plan

10. NPH Staffing

NPH is a major employer and visible symbol of Māori ‘business’ presence on the East Coast. NPH has had a dedicated and resilient team, and has created unique and innovative approaches to promote health and whanau wellbeing. For example, wahakura safe sleeping programme was initiated in Ngati Porou, Ngati & Healthy, Huringa Pai, and world leading genomic research.

Source: NPH Feasibility Project Brief

NPH current employ around 170 people, supporting around 150 full time equivalent jobs⁴.

⁴ Berl, M4king Sen5e of 7he Numbers, Nov 2015

11. Current Position Overview

While funding provision and service demand are constantly changing within the health sector, a preliminary review of NPH annual accounts (2017) shows that the organisation have improving financial health.

NPH Current Service Provision Position

Despite significant challenges, over the last 18 months NPH's quarterly performance results have ranked in the top 5 PHOs more often than any other PHO in New Zealand, particularly for the Minister's health targets for Better Help for Smokers to Quit and More Hearts and Diabetes Checks. NPH have also recently been featured in articles internationally as a leading example of meaningful community participation, power and decision-making in health systems. NPH also has a direct economic impact on local whanau and communities through the employment of 150 local people (105 full time equivalents), and in addition to the direct funding it receives, injects an additional \$5.5 million of GDP (2014) to the local economy.

Source: NPH Draft Strategic Fundraising Plan

NPH Current Financial Position (2017 accounts)

With a cohesive effort from the NPH Board, staff and management over several years, plus an operational loan from Te Runanganui o Ngāti Porou, the PHO has recovered from past financial challenges. While continued diligence is required to ensure an positive operational position is maintained, the PHO is now considered to be in a much sounder financial position.

Entity	2017 Income	2017 Profit (Loss)	Notes
NPH PHO	\$9.47M	\$467K	Total income represents approximately 8% of overall Hauora Tairāwhiti DHB Funding for the Gisborne Region as a whole. 2017 Accounts showed a \$395K loss prior to grants and donations (4% over total available funding) and \$467K profit when capital grants and donations were taken into account.
Te Puia Springs Hospital	\$1.8M (approx. 19% of the above \$9.47M)	(\$207K)	The hospital carries administrative and management costs of around \$350K. These potentially incorporate some costs associated with the management and administration of the PHO as a whole.

Figure 3

- NPH currently hold an interest only \$1.5M operational loan from Te Runanganui o Ngāti Porou (TRONPnui), with repayment of principle due at the end of a 10-year term (expiring April 2026). Interest is charged at 50 basis points above TRONPnui's current borrowing rate.

Note: This loan relates to NPH's overall health service provision, not directly to the hospital or site in question.

Runanga Financial Assistance

[Around 2011-2012] NPH sought assistance from the Te Runanga o Ngāti Porou (TRONPnui) board, as it was experiencing financial difficulties. The Runanga board agreed to provide relief, i.e. loan the organisation funds and provide an overdraft facility. NPH eventually transitioned under the Te Runanga o Ngāti Porou umbrella, as one of its subsidiaries with charitable trust status. When Te Runanga o Ngāti Porou was dissolved on 6 April 2012 after Royal Assent was given to the Ngāti Porou Claims Settlement Act, Ngāti Porou Hauora became part of the Te Runanganui o Ngāti Porou Group (TRONPnui) of subsidiaries⁵.

Source: Review of health services on the East Coast

⁵ Review of health services on the East Coast, <http://www.tdh.org.nz/assets/Media/Review-of-health-services-on-the-East-Coast.pdf>
Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

12. Te Runanga o Ngāti Porou (TRONPnui)

Te Runanga o Ngāti Porou TRONPnui is NPH's parent body. It is the mandated Iwi organization for Ngāti Porou and is made up of 14 elected representatives from 7 Rohenga Tipuna.

The organisation has two arms:

1. **Income earning** – this arm includes commercial entities, including, Ngāti Porou Seafoods, a leader in Māori fisheries. Pakihiroa farms (which includes three large farming stations on the East Coast) and a forestry operation.
2. **Income distribution** – this includes Ngāti Porou Hauora health services as well as social services.



REGIONAL PROFILE | Current Position

Whaowhia te kete mātauranga
Fill the basket of knowledge.

Site History

13. Significance of Te Puia Springs to Māori

For centuries Te Puia Springs has been a sanctuary of cultural significance and healing for Māori. The site is particularly significant for Ngāti Porou, but was also known as a place of peace, where Māori from other tribes and people in conflict, could come to heal in safety.

This powerful narrative and the geothermal springs are part of the reason for the current hospital's location.

14. Regional Significance of the East Cape to Māori

Mount Hikurangi, on the North Island's East Cape is the highest peak in the rugged Raukumara Range, and the highest non-volcanic mountain in the North Island, Mount Hikurangi (1754 metres) is recognised as the first point on the New Zealand mainland to greet the morning sun.

The mountain is sacred to the local Ngāti Porou people, who consider themselves direct descendants of Māui. Māori legend suggests that when the demigod Maui fished up the North Island of New Zealand, Mount Hikurangi was the first point to emerge from the sea. The mountain is also said to be the resting place of the waka (canoe) Nukutaimemeha, which Maui used on that famous fishing trip.

Source: Tourism NZ⁶

15. First European / Māori Encounters

On 8 October 1769, Captain Cook and his party made their historic first landing in New Zealand. Their first encounters and attempts at contact resulted in miss communication, violence from both sides and the deaths of around five Māori warriors. The Endeavour eventually took some prisoners, were able to communicate via a Tahitian chief named Tupaia, who spoke a similar language. As a result of the deaths an hostility Cook was unable to secure the provisions they needed and as a result named the area Poverty Bay.

Sources: NZ History.org⁷ and DOC NZ⁸

16. NZ Government Acquisition of Te Puia Springs

Te Puia Springs is the site of warm thermal springs. The NZ Government, having unsuccessfully attempted to purchase the springs over a 10-year period, passed the Native Townships Act 1895 which made it possible for it to take the land.

An accommodation house for visitors to the springs was established earlier, but it was not until 1934–35 that it was operated on a permanent basis, with springs-supplied pool and bath-houses. The hotel was closed for a number of years, but was renovated and re-opened in the early 2000s. Locally occurring natural gas was used for many years for cooking and heating.

Partly on account of the springs, which were considered to have medicinal qualities, a hospital was built in 1907. It was modernised and a 24-bed tuberculosis block was added in 1949. In 2011 it was a general-purpose hospital, run by Ngāti Porou Hauora – the major health provider for the Ngāti Porou district.

Source: Te Ara, Encyclopaedia of NZ⁹

⁶ <https://www.newzealand.com/ie/feature/mount-hikurangi/>

⁷ <http://history-nz.org/discovery2.html>

⁸ <http://www.doc.govt.nz/parks-and-recreation/places-to-go/east-coast/places/gisborne-area/cook-landing-site/>

⁹ <https://teara.govt.nz/en/east-coast-places/page-3>

17. Te Puia Springs Recent History

A bathing spa was first opened at Te Puia in 1901 as a tourist attraction. Due to the isolation, the spa was not hugely popular to start with. Improved roading and the establishment of the Te Puia Hotel in 1935 made the spa commercially viable.

Te Puia Hospital was erected in 1907, [and modernised in 1949] in response to a severe outbreak of Typhoid. At its peak, it employed over 200 staff and serviced the east coast. The hospital was run by the state until the late 1990's when it was taken over by Te Whare Hauora O Ngati Porou.

Source: Te Puia Springs and Waipiro Bay Township Plan, Gisborne District Council 2011



Figure 4: Te Puia Hospital, showing pool, gardens, hotel and lake Waipiro in the background. ¹⁰

18. Waipiro Bay Recent History

Waipiro Bay is a coastal settlement, 10km toward the coast of Te Puia Springs. Waipiro has a literal meaning of “putrid water” and it was named such by the Chief Paoa who was making reference to its sulphuric properties. It has a population of approximately 96 and was once the largest settlement on the East Coast. Up to 10,000 people lived here at its peak.

Waipiro was a thriving community that boasted a maternity hospital, general store, two hotels and a picture theatre. In the late 1800's, early 1900's, Waipiro was the centre of a largely farming based community. Shipping became highly relied upon with all inwards and outwards goods being “surfed” at Waipiro. Goods and passengers were sent out on lighters before being loaded on the awaiting ship.

Source: Te Puia Springs and Waipiro Bay Township Plan, Gisborne District Council 2011

¹⁰ Te Puia Springs and Waipiro Bay Township Plan 2011

19. Te Puia Springs Today

Te Puia Springs is a small settlement located 103km north of Gisborne. It has a population of approximately 156 and was renowned for its mineral hot springs and mud pools¹¹.

Current township features and facilities:

- A historic hotel (which is owned by an Auckland based Chinese investor and has recently been extensively renovated).
- A hospital, which incorporates a health clinic, elderly care, a diabetes research centre, internal pharmacy and a range of hospital services including maternity care, physiotherapy and A&E.
- A shop and petrol outlet, with public toilets.
- A Gisborne District Council Service Centre.
- A sporting domain with netball courts and playing field.
- A small historic church.
- A Golf Course.
- A Helipad as part of the hospital facilities.

Lost community facilities:

- The Hotel historically had a local pub run from one end. This has yet to reopen under the new ownership and is awaiting liquor licence approval.
- The town hall has been closed for several years.
- Te Puia Springs Primary school was been closed by the Ministry of Education and all buildings and facilities removed from the site, including the swimming pool.
- Housing NZ accommodation, previously run from the old motel (reportedly closed due to maintenance issues).

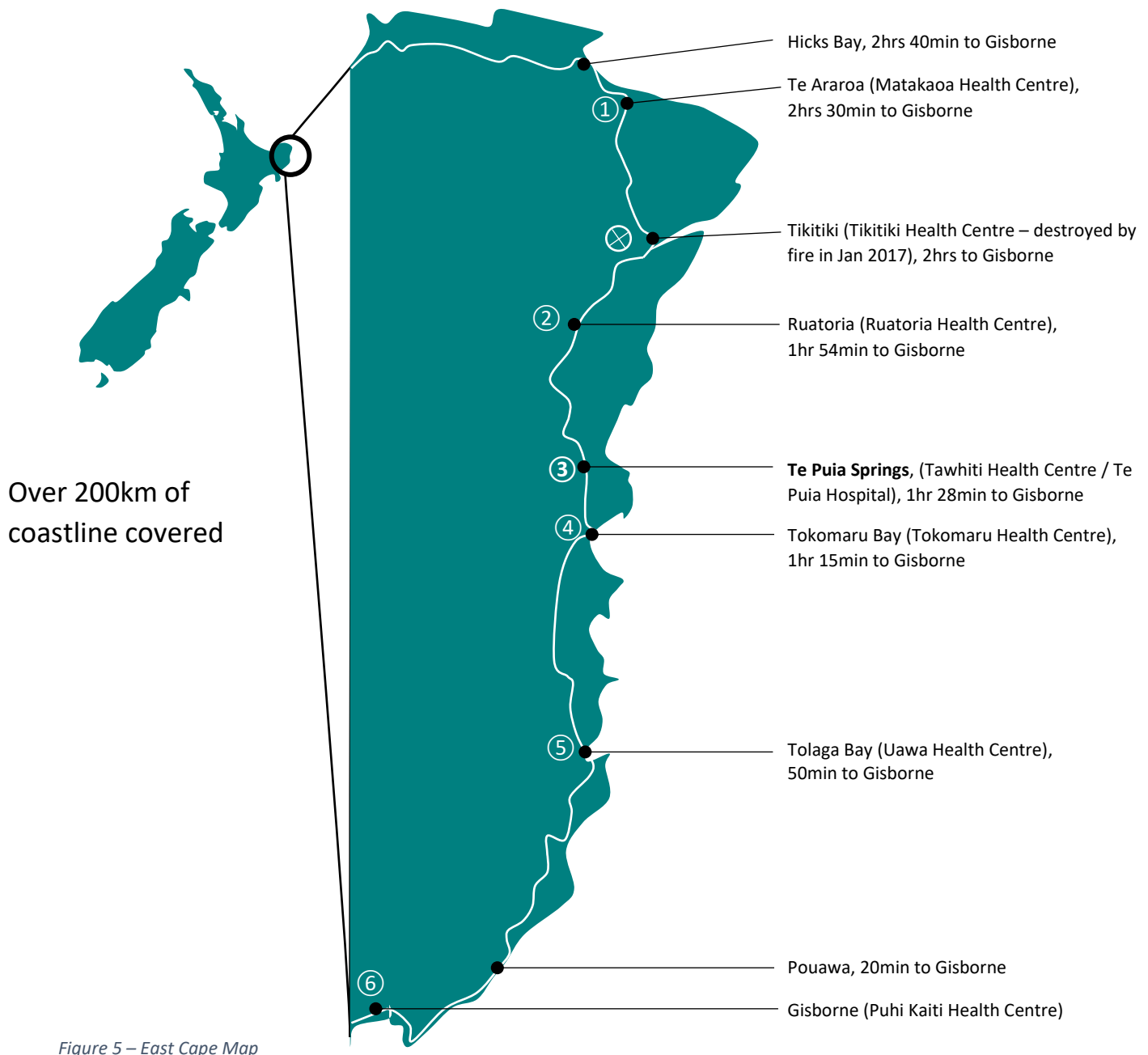
¹¹ Source: *Te Puia Springs and Waipiro Bay Township Plan, Gisborne District Council 2011*

Regional Profile

20. Location

Ngati Porou Hauora Primary Health Organisation (PHO) operate a hospital at Te Puia Springs, along with 6 clinics located along the East Cape of New Zealand. Historically there were 7 clinics, up until January 2017, when the Tikitiki clinic was destroyed by fire. The PHO cover covers approximately 200km of coastline.

The following map shows the East Cape section of State Highway 35 and the main townships situated along it. This section of New Zealand's Coastline is extremely isolated and rural in nature. There is limited additional roading infrastructure, with the majority of the inland area being either farmland or forestry.



21. Gisborne Region Population Structure

Population Structure Trends

Youth (0-19 years old) are forecast to decline by 1,700 persons (10%) over the 25 years from 2018 to 2043. However, as Gisborne has a high proportion of youth compared to all of New Zealand and a high fertility rate, youth are expected to remain a high proportion compared to the New Zealand average. Meanwhile the older population (65+ years old) will increase by 3,280 persons (44%).¹² Those aged 85 years will nearly double between 2018 and 2043 from 766 to 1,514 persons.

Changing age demographics bring changing needs particularly for community facilities. It is likely that we will see increased demand for facilities that support older people's needs while younger people's recreation needs still remain quite high relative to the rest of New Zealand.

Māori are expected to remain a high proportion of the district's population.

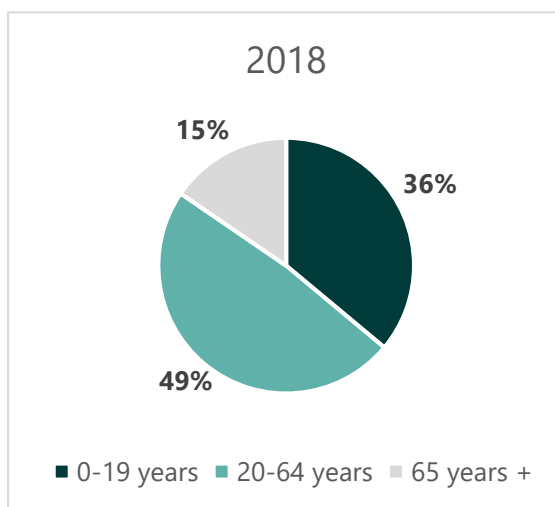


Figure 3 Gisborne Population Age Groups 2018

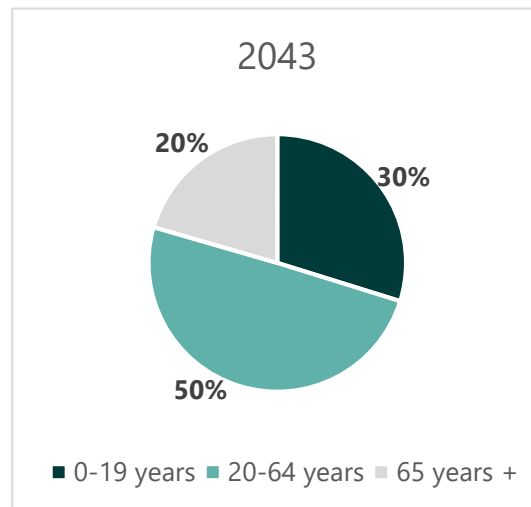


Figure 4 Gisborne Population Age Groups 2043

Source: GDC Draft Infrastructure Strategy 2018

22. East Cape Population Trends

Rural Residential Population Decline

The Gisborne District Rural population is projected to decline by 3.6% over the next 25 years.¹³ However, with growing industries in the East Cape Region, some recovery or growth could reasonably be expected. Potential growth industries are noted below.

Potential East Cape Population Growth Factors

Diaspora

Ngati Porou have very high levels of Iwi identification among those who have moved away from the local area or are descended from the Iwi. Anecdotal reports suggest that many people who grew up on the East Cape would consider moving back should there be suitable employment options. The following are growth industries which may contribute to population growth.

¹² <http://forecast.idnz.co.nz/gisborne>

¹³ GDC Draft Infrastructure Strategy 2018

1. Forestry

Over the last ten years the district has seen a dramatic rise in the transport of logs harvested from plantation forests. Between 2005 and 2016 harvests tripled, from about 0.7 to 2.1 million cubic metres.¹⁴ The most recent forecasts project harvests to more than double again, reaching 4.5 million cubic metres around 2020, then peaking at over 5.5 million cubic metres by about 2029. Volumes are expected to then decline to around current levels before gradually increasing for the next harvest cycle.¹⁵ At the time of publication these figures were under review, particularly the region's capacity to extract logs at the peak volumes forecast, with the resources available.¹⁶

Source: GDC Draft Infrastructure Strategy 2018

At the time of writing this report Activate Tairāwhiti indicated that consideration was currently being given to an additional commercial shipping wharf to potentially be located in the northern end of the East Cape, in order to increase the commercial viability of timber extraction.

2. Hikurangi Enterprises

Hikurangi Enterprises are facilitating a Ministry of Health approved clinical trial crop of pharmaceutical cannabis on the East Cape. This trial now has 5-thousand plants and currently employing 15 growers.

The company have recently signed a conditional \$160M deal with American company, Rhizo Sciences and are awaiting NZ Government legislative changes which would enable export¹⁷.

Their current objective is providing a lower cost alternative to therapeutic products, with some medical grade products currently used in NZ costing \$1,400 per bottle. The company anticipate being able to produce a similar quality hemp based product for around \$150 per bottle by 2019.

The global market for pharmaceutical cannabis is anticipated to be worth an estimated NZ\$82b within five years¹⁸. <https://hikurangi.enterprises/>

3. Manuka Honey

Manuka Honey is a growth industry. "Manuka is the most expensive honey in the world. New Zealand honey exports were worth \$300 million in 2015. Ninety percent of that value is related to manuka. We rank 15th in terms of global honey trade but third in terms of price.¹⁹" In 2015 a collective of Ngati Porou land owners formed an umbrella company called Ngati Porou Miere to facilitate entry into the Manuka Honey industry²⁰.

Pressure over the 2016-17, with a poor spring have significantly impacted profitability²¹. However, the long-term growth potential of the industry as a whole remains. A manuka industry action group, has recently been set up²² and with NZ Government support hope to grow the value of total exports nationally to \$1.2 Billion by 2028²³.

¹⁴ Statistics New Zealand, Forestry by regional council statistics, <http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE7421#> last accessed September 2017

¹⁵ Eastland Port Review of Regional Log Availability, April-May 2016.

¹⁶ GDC Draft Infrastructure Strategy 2018

¹⁷ <https://www.stuff.co.nz/business/industries/101712141/160m-kiwi-cannabis-export-deal-to-us>

¹⁸ <https://www.stuff.co.nz/business/industries/101712141/160m-kiwi-cannabis-export-deal-to-us>

¹⁹ <http://gisborneherald.co.nz/business/2210401-135/huge-potential-in-manuka-honey>

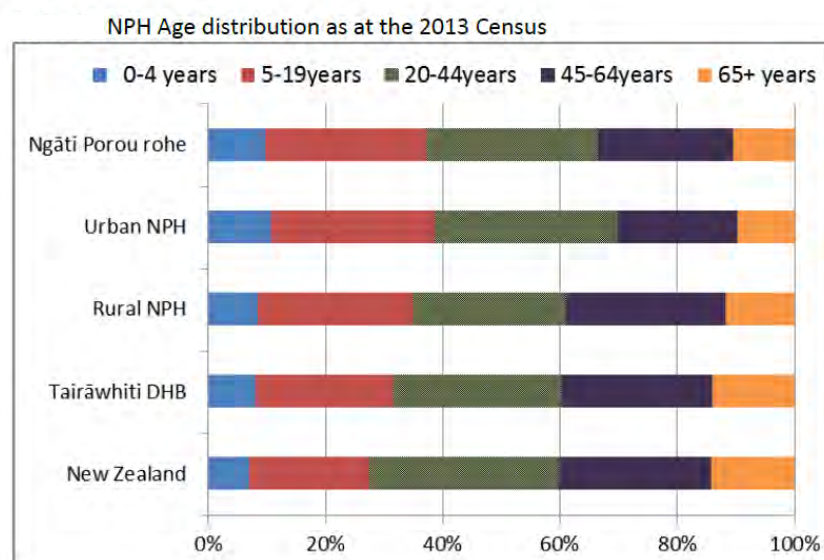
²⁰ <http://www.ngatiporou.com/article/take-honey-not-money>

²¹ <http://www.maoritelevision.com/news/regional/multimillion-dollar-manuka-honey-loss-forecast>

²² http://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11769656

²³ <http://www.scoop.co.nz/stories/BU1712/S00364/manuka-health-welcomes-mpi-efforts-over-honey.htm>

23. NPH Patient Age Distribution 2013



Source: Statistics New Zealand.

Ngāti Porou rohe has a higher proportion of children and adolescents aged 0 to 19 than TDH and NZ. The coastal rural rohe also has a lower proportion of adults aged 20 to 44, while the urban rohe has almost the same proportion of this age group to TDH and NZ. The proportion of older adults (65+) is lower than NZ and TDH, reflecting the lower life expectancy.²⁴

Source: Ngati Porou Hauora PHO Health Dashboard 2016

24. East Cape Population / NPH Catchment

The rural area of the East Cape serviced by NPH has a total population of roughly 4,400²⁵ people, with 98% enrolled with the NPH PHO²⁶. NPH also have an urban clinic in Gisborne which meets the needs of an additional 4,374 residents.

NPH Enrolment Numbers and Trends by Clinics and Locality (2013-15)

Clinics	2013	2014	2015
Matakaoa Health Centre	859	871	844
Tikitiki Health Centre (destroyed by fire in Jan 2017)	420	408	384
Ruatoria Health Centre	1421	1427	1400
Tawhiti Health Centre	284	279	270
Tokomaru Health Centre	463	444	470
Uawa Health Centre	1161	1131	1112
Puhi Kaiti Health Centre	4460	4246	4374
Locality	2013	2014	2015
Rural	4608	4560	4480
Urban	4460	4246	4374
NPH PHO Total	9068	8806	8854

Figure 6²⁷

²⁴ Ngati Porou Hauora PHO Health Dashboard 2016

²⁵ Statistics NZ 2013 Census

²⁶ Ngāti Porou Hauora Health Dashboard, Lee Tan 2016, <http://www.nph.org.nz/nph-news-2/ngati-porou-hauora-health-dashboard-2/>

²⁷ Ngāti Porou Hauora Health Dashboard, Lee Tan 2016, <http://www.nph.org.nz/nph-news-2/ngati-porou-hauora-health-dashboard-2/>

Rural verses Urban

Of all patients enrolled with NPH 51% are Rural.

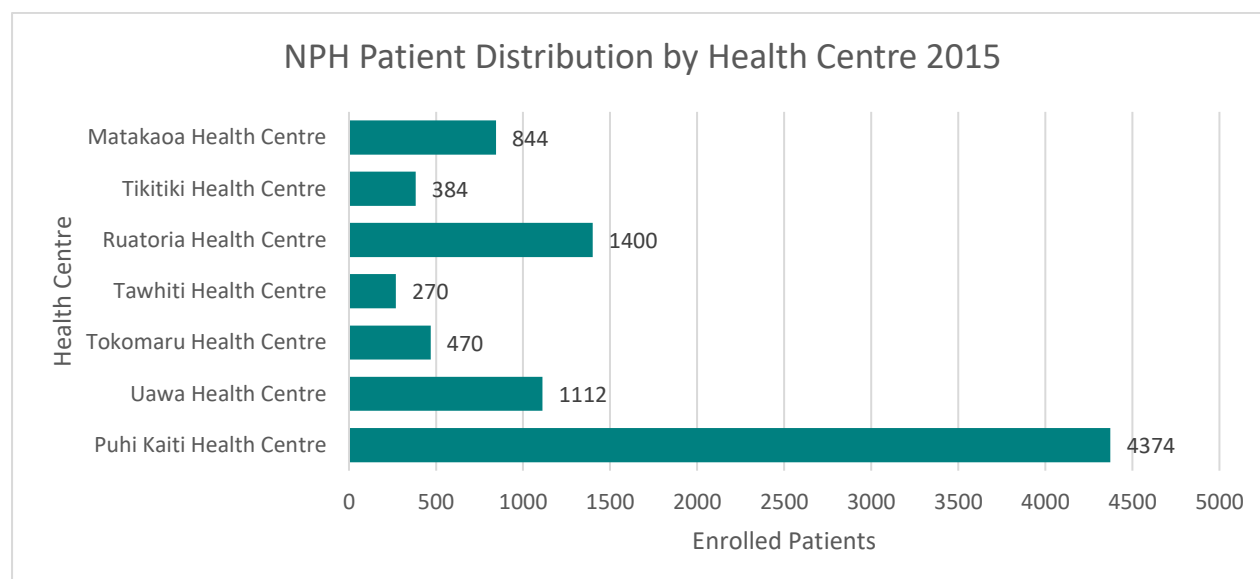


Figure 7²⁸

High Needs Patients

From a health perspective Ngati Porou Hauora services a very high needs community.

- Of all patients enrolled with NPH **90% are classified as high needs patients**, compared to 66% of the Tairāwhiti District Health enrolments and an average of 31% nationally.

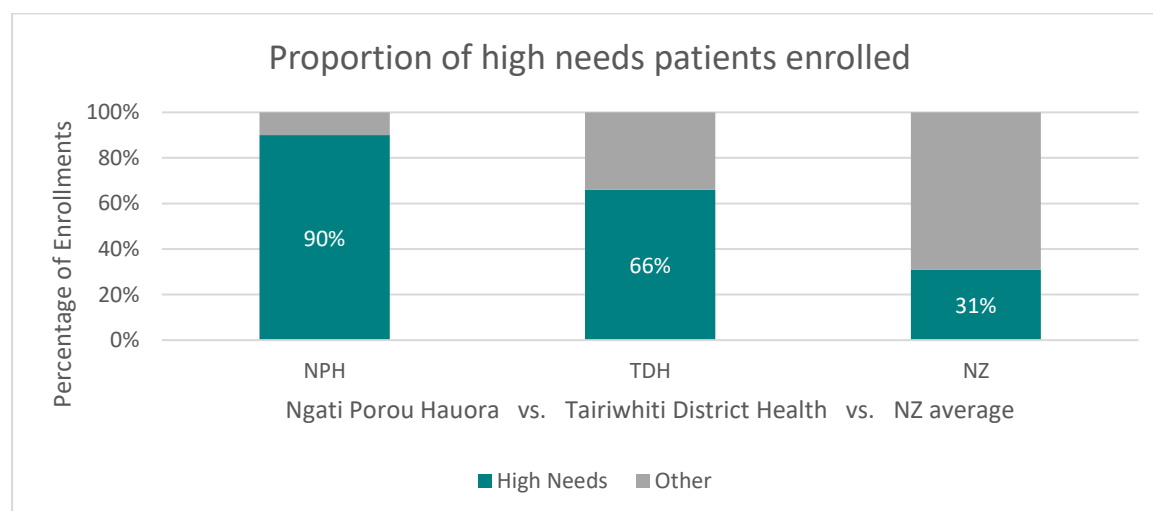


Figure 8²⁹

²⁸ Ngāti Porou Hauora Health Dashboard, Lee Tan 2016, <http://www.nph.org.nz/nph-news-2/ngati-porou-hauora-health-dashboard-2/>

²⁹ Ngāti Porou Hauora Health Dashboard, Lee Tan 2016, <http://www.nph.org.nz/nph-news-2/ngati-porou-hauora-health-dashboard-2/>
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Māori Patients

The region Ngati Porou Hauora services is extremely unique in regard to its cultural make up.

- Of all patients enrolled with NPH 88% identify as Māori, compared to 53% of the Tairāwhiti District Health enrolments and an average of 15% nationally.

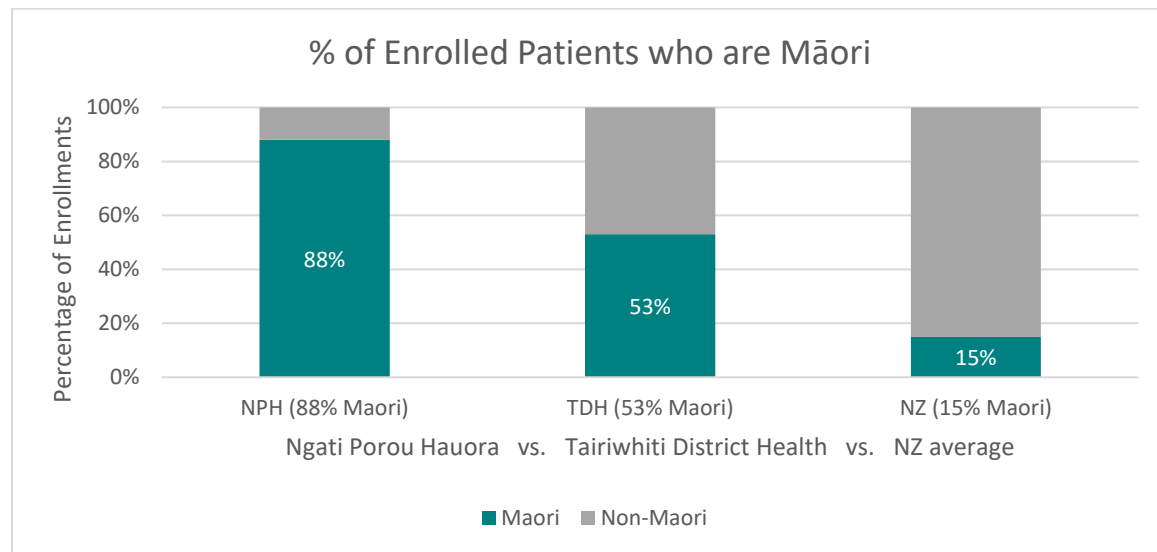


Figure 9³⁰

³⁰ Ngāti Porou Hauora Health Dashboard, Lee Tan 2016, <http://www.nph.org.nz/nph-news-2/ngati-porou-hauora-health-dashboard-2/>
Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

25. Deprivation

The segment below is made up of extracts from the Ngāti Porou Hauora Health Dashboard 2016³¹.

The map below shows the Census 2013 boundary of Ngāti Porou rohe and the concentration of very deprived meshblocks within these boundaries. Census 2013 indicated that 96% of rohe population lives in very deprived areas (NZ Deprivation Decile 9-10, ten being the most deprived) compared with 52% of Tairāwhiti DHB total population and 20% nationally. Of the total rohe, 99% lived in Decile 9-10 in the coastal rural areas followed by 91% in Deciles 9-10 in the urban Gisborne area.

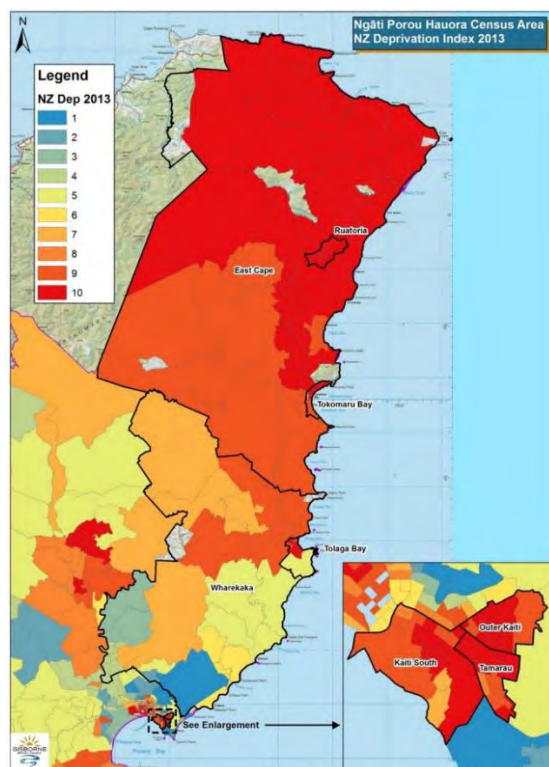


Figure 10

Data on the 2013 NZ Deprivation Index presented in this report combines eight dimensions of deprivation: including access to telecommunications and internet, income, employment, qualifications, home ownership, support, living space, and access to transport. Information on individual social determinants is summarised below.

Socioeconomic Indicators

Indicator	Indicator measure by:	NPH	Tairāwhiti	Total NZ
NZ Deprivation index	Percentage of Meshblocks with high deprivation (9-10)	91%	52%	20%
Income	Annual Equivalised Household Income (\$)	38,700	47,500	57,800
Ethnicity	Proportion of Māori in Ngāti Porou rohe	70%	49%	16%
Housing	Children (under 15 years) living in crowded households	5%	4%	5%
Education¹³	Early childhood education (0-6 y)	94%	95%	93%
	18 year olds with NCEA Level 2 or equivalent	74%	66%	63%
Employment	Unemployed people 15y and over	14%	9%	7%
	Youth not in education, employment or training 15-19y	16%	14%	11%
	Youth not in education, employment or training 20-24y	32%	28%	15%

Sources: Ministry of Health (Deprivation index), Statistics New Zealand (Census 2013), Ministry of Education (Education Counts).

Figure 11

³¹ [Ngāti Porou Hauora Health Dashboard, Lee Tan 2016, pg. 15-17](#)

26. Overall Health

Ngāti Porou Hauora PHO provide primary health care to approximately 9,000 people, with over 56,000 GP consultations per year (including more than 5,000 annually for children under 5 years of age)³².

From an overall health service provision perspective, NPH show good results, with comparative results across most measures when compared against Hauora Tairāwhiti DHB overall results. It must also be taken into account that NPH service a much higher need and lower demographic population than the majority of health providers nationally. NPH PHO has outperformed both Tairāwhiti and New Zealand for the high needs population in a number of performance measures.

The following are key points have been taken from the “Ngāti Porou Hauora Health Dashboard”, published in 2016. Some points have been abbreviated and the full report is available online³³. The findings confirm that the health status of Māori in the Ngāti Porou rohe is significantly worse than that of the rest of the country. The rohe is a high needs population who are at greater risk of sickness, injury and early death.

SOCIAL DETERMINANTS OF HEALTH

1. The Dashboard shows that 91% of Ngāti Porou rohe population lives in very deprived areas (NZDep deciles 9 and 10) compared to 52% of Tairāwhiti DHB, and 20% of NZ.
2. 100% of the coastal NPH population is classified as rural, the majority is classified as highly rural according to the definition of rurality (Statistics New Zealand), and 99% of these areas are very deprived in terms of socio-economic conditions.
3. In Census 2013, Māori made up of 70% of the population in Ngāti Porou rohe.
4. NPH has one of the highest proportions of Māori in the Primary Health Organisations (PHO) enrolments in NZ (88% of NPH patients are Māori compared with 15% Māori in the total New Zealand PHO enrolment).
5. The households in the Ngāti Porou rohe receive a much lower average equivalised income (\$38,700) at about two-thirds of the New Zealand average income level (\$57,800).
6. Young people who are not in education, employment or training are at greater risk of a range of negative outcomes including poorer health, depression or early, unplanned parenthood. The Census 2013 figure for 20-24 year old youth at 32% for Ngāti Porou rohe is more than twice as high as the New Zealand.

ACCESS TO PRIMARY CARE

7. NPH has enrolled the bulk of the population in the East Coast areas (98%).
8. On average, NPH GPs and nurses have provided higher rates of consultation compared with Tairāwhiti and the national average. NPH high needs patients (mostly Māori and people from high deprivation areas) have visited 1.5 times every quarter compared with 1.3 times and 1.2 times respectively in Tairāwhiti and in NZ.

INTERMEDIATE PERFORMANCE OUTCOMES

9. A selection of key PHO performance measures shows that overall NPH PHO is performing on a par with Tairāwhiti's results.

Some of NPH PHO performance achievements include:

- Above the 95% target in childhood immunisations for 2 year olds at around 96% in 2013 and 2015, which was higher than Tairāwhiti and New Zealand.

³² Berl, Ngāti Porou Hauora Economic Impact Report 2015

³³ [Ngati Porou Hauora PHO Health Dashboard 2016](#)

- Improvement in childhood immunisations for 8 months old from 84% in 2013 to 97% in 2015.
- Improvement in breast cancer screening from 61% in 2013 to 71% in 2015.
- Improvement in cardiovascular disease risk assessment from 78% in 2013 to 93% in 2015, which is above the 90% target and outperformed both Tairāwhiti and New Zealand.
- NPH PHO has outperformed both Tairāwhiti and New Zealand for the high needs population in breast cancer screening, childhood immunisations for 2 year olds, and cardiovascular disease risk assessment, and also achieved the programme goal for these indicators.

Overall, there were slightly better results for the high needs population except for infant breast feeding at 3 months, smoking rate, diabetes detection and occasional fluctuations in the 8-months old childhood immunisation.

MORTALITY

10. Ngāti Porou rohe has the highest overall mortality rate in New Zealand (66% above the national rate and 17% above Tairāwhiti).
11. The Dashboard shows that the avoidable death rate in the Ngāti Porou rohe is slightly more than twice 107% higher) the rate in New Zealand as a whole, and about 10% more than Tairāwhiti. It has the highest rate of avoidable death in the country. The avoidable death rate for Māori is higher than the rate for total population in the rohe with 75 more deaths per 100,000.
12. Amenable mortality rates in the Ngāti Porou rohe were more than two times (129% higher) the national rate, about 48% higher than Tairāwhiti, and it has the highest rate of amenable death in the country. The rate for Māori is about 37% higher than national rate and 15% higher than Tairāwhiti.
13. Ngāti Porou rohe's injury mortality rates were nearly 2 times higher (90% higher) than the national rate with a substantial gender difference.
14. Injury mortality rates were 2.5 times higher for Māori males than for Māori females, whereas Tairāwhiti Māori males were 3.6 times more likely to die from injuries than their female counterparts. Furthermore, injury mortality for all males in Ngāti Porou rohe was 3.4 times higher than for females.

HOSPITAL ADMISSIONS

15. The rates of avoidable admission in the Ngāti Porou rohe were slightly higher (1.2 times or 21% higher) than New Zealand, and Tairāwhiti (1.1 times or 7% higher). However, the Māori avoidable admission rate was nearly the same as New Zealand (2% higher), and Tairāwhiti (4% higher).
16. All-cause admission rates for Ngāti Porou rohe Māori were the same as Tairāwhiti (1% lower), and slightly lower than New Zealand Māori (6% lower).

BIRTHS

17. The Dashboard shows that overall, the prevalence of premature babies and low birthweight in the Ngāti Porou rohe was slightly higher (1.1 times higher) than Tairāwhiti and substantially higher (1.3 times or 31% higher) than national rates.

CANCERS

18. The most common cancers registered for Māori people in the Ngāti Porou rohe were cancers of the digestive organs and lung. The rates of these cancers were also substantially higher for Ngāti Porou rohe population in that the lung cancer rates were 1.4 times (or 42% higher) higher than Tairāwhiti and 2.3 times or 131% higher than the national rates.

27. Gisborne Region GDP by Industry

- **The health sector is an important contributor to the regional economy.** In year to March 2015, Health Care and Social Assistance Services represented 7.2% of the Gisborne Regions GDP, valued at \$123M³⁴ in 2015. Placing it fifth, in terms of GDP behind Forestry and Fishing, Agriculture, GST on Imports and Manufacturing.
 - Spending within the NPH Rohi was \$9.6M in 2015 and represented 8% of the Tairāwhiti DHB health spending³⁵.
 - **The economic impact of this spending is estimated to be a \$14M contribution to local GDP and supporting the equivalent of 150 full time jobs³⁶.**
- The predominance of primary sectors industries including fishing, forestry and farming are likely contributors³⁷ to the high injury rate³⁸ within in the NPH PHO catchment.

Gisborne Region GDP by Industry Sector 2015

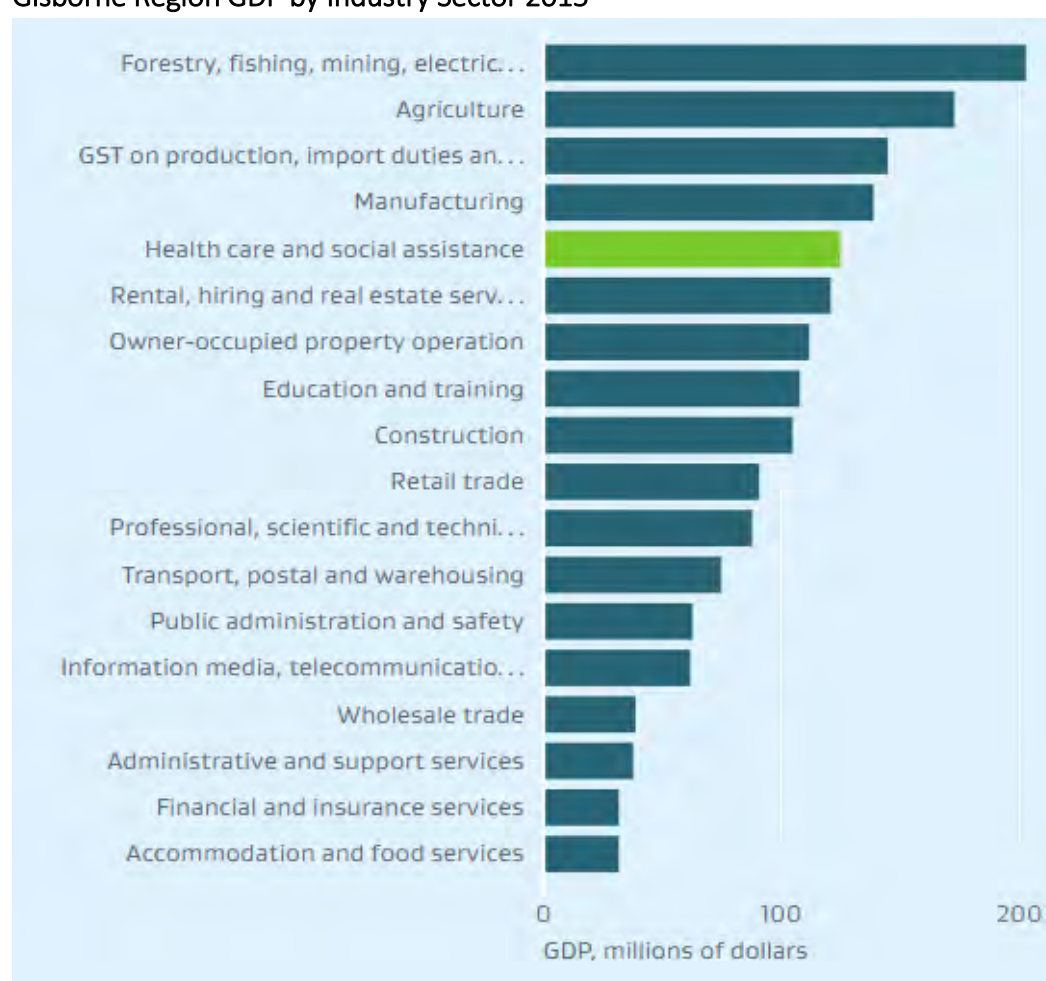


Figure 12 ³⁹

³⁴ [MBIE Regional Economic Activity Report, 2015 figures](#)

³⁵ Berl, Ngāti Porou Hauora Economic Impact Report 2015

³⁶ Berl, Ngāti Porou Hauora Economic Impact Report 2015

³⁷ http://archive.stats.govt.nz/browse_for_stats/health/injuries/InjuryStatistics_MR16.aspx

³⁸ [Ngati Porou Hauora PHO Health Dashboard 2016](#)

³⁹ [MBIE Regional Economic Activity Report, 2015 figures](#)

28. Gisborne Regional Tourism

- For the year ended November 2017 the Gisborne RTO (Regional Tourism Organisation) had an estimated total of 414,489 guest nights⁴⁰.
 - Of these 14% were international (58,000) and the remaining **86% domestic travellers** (356,000). While the proportion of international travellers is still low this figure represents 10% growth on the year ended November 2016 (52,000).
 - Of the domestic travellers, 26.5% visited over the December / January period (110,000).
- The Gisborne region was one of the lowest ranked geographical regions in NZ, for annual tourism spend in 2017, with a total of only \$143M. Compared with neighbours Hawkes Bay \$632M (of which \$341M was spent in Napier City) and Bay of Plenty \$1,835M (including Rotorua \$806M, Tauranga \$773M and Whakatane District \$126M).⁴¹
- Accommodation occupancy rates were at 57.4% in 2017⁴²

Gisborne Region Tourism Spend by Product, 2017 year

Sector	Tourism Spend	%
Retail Sales (Retail alcohol, food, beverages, fuel, automotive and other retail)	\$86M	60%
Food and beverage services	\$20M	14%
Accommodation	\$15M	10%
Other Tourism Products	\$13M	9%
Other Passenger Transport	\$7M	5%
Cultural, Recreation and Gambling	\$3M	2%
Totals	\$143M	100%

Figure 13 ⁴³

29. East Cape Tourism

Limited records or accurate counts are available regarding tourist numbers on the East Cape. Activate Tairāwhiti estimate that 35,000 people per year visit the East Cape Lighthouse (the world's most easterly lighthouse). Road usage counts give an approximate seasonal increase estimate.

Road Usage as a Visitor Indicator

The New Zealand Transport Agency (NZTA) record traffic movements for different areas of NZ. Readings from a site North of Tolaga Bay in 2016 (for both sides of the road), show daily traffic movement of 1,133 vehicles of which 204 are heavy vehicles⁴⁴.

While full year data is not recorded, seasonal variations in the available data show an influx of around 300 vehicle movements per day over summer months. This indicates that around 9,000 vehicle movements per month, between December and February, are most likely related to holiday activities.

“NZTA traffic movement counters indicate an estimate 27,000 domestic and international tourist vehicle movements along the East Cape over summer months.”

⁴⁰ [MBIE, CAM by RTO](#)

⁴¹ [MBIE, Annual spend grouped by Territorial Authority \(TA\), region, country of origin, and product category](#)

⁴² [MBIE Regional Economic Activity Tool](#)

⁴³ [MBIE, Annual spend grouped by Territorial Authority \(TA\), region, country of origin, and product category](#)

⁴⁴ <https://nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/2012-2016-national-telemetry-site-profiles.pdf>

30. Forestry Industry Growth & Impact on Health Service Provision

Forestry is a major industry sector for the East Cape. Wood production is anticipated to exceed 3.0 million cubic metres per year by 2020⁴⁵. Based on volume to truck ratios presented in other reports⁴⁶ this would equate to approximately 135,000 truck movements per year.

- During stakeholder consultation, the NPH board conveyed that road damage, due to trucks and weather events, were a major contributor to road accidents in the region. With x15 accidents over the 2017-18 holiday period attributed to the condition of roads on the East Cape.
- Forestry is a high risk work environment and, with expansion, represents a potential health service demand increase. The NPH population catchment already have higher accidental death rates than other areas of NZ, with a rate almost twice that of the national average⁴⁷. In 2016, ACC recorded injuries from agriculture, forestry and fishing as the second highest rate of injury of all industry sectors. With 176 injuries per 1,000 full time equivalent staff⁴⁸.

At present timber prices on the global market fluctuate significantly. Commentary from stakeholder consultation indicates that at times when prices are low it is uneconomical to harvest trees situated more than 50km from Gisborne, due to road transport costs. This means that major stakeholders are currently considering significant investment in a dedicated wharf for logging ships on the East Cape.

- Should a commercial shipping wharf be developed on the coast, it is likely that the resident population of the surrounding area would increase as a direct result. Both from construction workers, wharf staff and additional truck drivers. This potential population increase, has a potential service demand increase impact for health services.

⁴⁵ <https://www.mpi.govt.nz/dmsdocument/854-east-coast-forest-industry-and-wood-availability-forecasts-2008>

⁴⁶ <https://www.boprc.govt.nz/media/448345/east-cape-forestry-transport-study.pdf>

⁴⁷ [Ngati Porou Hauora PHO Health Dashboard 2016](#)

⁴⁸ http://archive.stats.govt.nz/browse_for_stats/health/injuries/InjuryStatistics_MR16.aspx



NEEDS ASSESSMENT | Listening to the people

He aha te mea nui o te ao? He tangata, he tangata, he tangata.

What is the most important thing in the world? It is the people, it is the people, it is the people.

Stakeholder General Position Summary

The following are a brief summary of the general position of stakeholders based on preliminary stakeholder consultation undertaken as part of the feasibility process.

Note: *In many cases, formal responses and position statements have been reserved until the scope of the proposed project is confirmed.*

31. NPH Board

The NPH Board are supportive of the proposed development and are seeking to create a sustainable facility with low maintenance costs, high standard of care and long-term financial sustainability. They are open to how this might be achieved.

The Board also have a vision that the site and facilities would be better utilised by the wider community, council and other organisations in order to help provide collective rejuvenation of the region. They see the proposed redevelopment project as a catalyst for improvements in holistic community health outcomes, including social and economic outcomes, which are proven to have a huge impact on physical and mental health.

- Their current objective is to retain hospital services on the coast at Te Puia Springs, while also exploring other services that might be integrated into the facility in order to maximise its community benefit and financial sustainability. They are open to possibilities around how this might be achieved, but resolved on physical location and a desire to maintain services as far as possible.

32. Te Runanganui o Ngati Porou (TRONPnui)

Te Runanganui o Ngati Porou are the parent organisation for NPH.

- Management are supportive of initiatives which will see improved health and community outcomes. While there are multiple views on how this might be achieved, TRONPnui are committed to the health of their people and ultimately want to see health services financially self-sustaining.
- TRONPnui are currently developing a social outcomes measurement tool under Toitu Ngati Porou. This tool will encompass a range of different indicators and includes some that will be complimentary to existing health sector measures.
- Additional activities such as geothermal hot pools or extension of Ngati Porou Miere have been briefly discussed in the past by various parties, but no firm concepts have been explored in detail.

33. Te Whanau a Iritekura Whenua Topu Trust

The Whenua Topu Trust are the Māori land ownership entity for the Te Puia Springs area and are subgroup of the Ngati Porou Rūnanga representing local iwi and hapu Treaty of Waitangi claimants.

The Trust have a governance, representation and strategic management role in relation to land in the local area including the historic Te Puia Springs primary school site, ministry of works yard and the Te Puia Hospital site.

The Trust is supportive of current health related activities, have undertaken preliminary investigations into geothermal potential in the past and are supportive of anything which will improve the overall position, outcomes and health of their people.

- The key requirement of this stakeholder group, regardless of the development inclusions, is formal / legal recognition of land ownership to ensure it is protected and retained for future generations.

34. Te Puia Springs Hotel

The historic Te Puia Springs Hotel has recently been fully renovated by a Chinese investor who lives in Auckland and offers a range of good quality single, double and twin rooms.

- Discussions with management indicate a very strong desire for collaboration with Te Puia Springs Hospital and other community stakeholders. Hotel management at this stage have not pursued the redevelopment of their small existing geothermal pool or extensive section to the rear of the property, due to perceived resource consent challenges and expense.
- Discussions with management indicate they are open to partnership opportunities, which will see regional growth and contribute to the long-term success of their business. At present, they support other local businesses by redirecting guests to a local pub for most meals and are considering a partnership arrangement for the management of their own bar when it reopens.

35. Gisborne District Council

Gisborne District Council describe their mission as being to “Lead and support, the social, cultural and economic development of our communities – Mō tātou te Tairāwhiti”⁴⁹. Preliminary discussions with Yvette Kinsella (principal strategy advisor for the Gisborne District Council) indicate a willingness to look at collaborative options, as well as support local initiatives via policy and planning considerations, such as the GDC resource management plan.

Te Puia Springs GDC Service Centre

- Gisborne District Council are currently reviewing the potential costs associated with renovation of their existing council service centre in Te Puia Springs, due to identified earthquake risk. The Service Centre currently houses six staff including animal control, GDC staff, East Coast Officer, as well as other team members such as building consent staff who are present on certain days of the week. Preliminary indications are that the council would be open to exploration of collaborative options for co-housing of services as part of the proposed hospital redevelopment. Additional GDC service facility sharing opportunities include a library.

GDC Resource Management Plan

- Gisborne District Council are currently reviewing their resource management plan. This means that consideration could be given to establishment of special zones with permitted activities to help enable the proposed development from a resource management perspective.

36. Hauora Tairāwhiti (Tairāwhiti District Health Board)

Hauora Tairāwhiti are responsible for overseeing health provision in the Tairāwhiti district, which covers the same area geographic area as the Gisborne District Local and Territorial authorities (a total geographic area of 8,300km²).

High Need Population

From a health service provision perspective, Hauora Tairāwhiti face similar challenges to NPH as outlined below, although for the NPH rohe these proportions are even higher.

Tairāwhiti has the highest level of deprivation than any other district, with two thirds of the population (65%) living in Decile 8-10 (highly deprived areas). This trend is further exacerbated when split by ethnicity, with 77% of Māori in Te Tairāwhiti living within deciles 8-10, and 78% of Māori children under 10 living in Deciles 8-10. This remains the most important determinant of

⁴⁹ Gisborne District Annual Plan 2014/15

health for Tairāwhiti and its continuing inequity poses the biggest challenge in improving health and reducing inequality.

As a result of our population make-up, Tairāwhiti has the worst health burden nationally. We have the highest rates of overall avoidable mortality and morbidity, and high rates of ambulatory sensitive hospitalisations. Our access to some health services are the poorest nationally, for instance access to some cardiac treatment services and renal services.⁵⁰

Iwi PHO provider vs. Crown Owned Entity

As NPH are an Iwi provider and standalone entity, their facilities and services are not owned by the Crown or DHB. Capital investment, is therefore a step removed from the Hauora Tairāwhiti who act as an agent for the Crown / Ministry of Health, with capital funding arrangements most likely to be directly negotiated between the Crown / Ministry of Health and the Iwi.

Future Service Provision / General Position

From a Hauora Tairāwhiti perspective, the health board are keen to see continued high quality service provision for the region as a whole. In the past year, management have taken intentional steps to rebuild a quality working relationship with NPH (which has been strained in the past due to financial pressures).

Hauora Tairāwhiti primarily fund hospital services at Te Puia Spring on a bed day basis. In order to ensure the future and long term viability of these services they strongly recommend that NPH develop a robust business case with regard to service delivery (including looking at specific cost centres, potential service delivery efficiencies, what else could be provided from Te Puia Springs and potential alternative uses for surplus facilities). This recommendation is not in regard to service reduction, but reflects the simple fact that NPH need to ensure that income and expenditure are balanced in order to ensure long term sustainability.

NOTE: NPH currently have a proposal with the Ministry of Health for preparation of a detailed business.

Nicola Ehau, GM of Planning, Funding & Population Health for Hauora Tairāwhiti indicated that there are potential opportunities for additional or alternative services from Te Puia Springs. Which services and how these arrangements are structured will largely depend on, NPH capacity and ensuring that they can meet the staffing, certification and other requirements that would accompany the respective services. Once these are evaluated, NPH would need to go back to Hauora Tairāwhiti with a proposed service offering and structure, for more detailed conversations. This is not specifically a facility issue, but is more closely related to meeting other Ministry of Health requirements.

Hauora Tairāwhiti are keen to see NPH take the lead in regard to determining the level of services provided from Te Puia Springs and their approach to provision of these services. They are open to discussions around mutually beneficial arrangements and partnerships going forward.

⁵⁰ <http://www.tdh.org.nz/about-us/tairawhiti-our-region/>

Health Service Needs

37. East Coast Health Services Review

As part of a review of health services on the East Coast in November 2013, two rounds of detailed community consultation hui were held at multiple townships along the East Coast. The following are key findings from these hui⁵¹.

Location of Facility

Te Puia was the preferred Central location for future services, with the majority of community hui participants supporting this site, provided the land was shown to be stable. This finding was also supported by the findings of a wide-ranging review of Health Services on the East Coast⁵².

Reasons for Te Puia Springs as a preferred location included:

- Te Puia's spiritual and historical significance.
- Te Puia Springs has over \$1M worth of water and waste infrastructure, which would need to be replicated / developed at another site should the hospital be relocated.
- Te Puia's physical centrality, as people tended to come down the Coast rather than travel further up.
- Te Puia's ability to retain critical mass and acknowledges the importance of Te Puia as a hub.
- GPs identified that it would be very difficult to find, establish and hold a clinical workforce in Ruatoria due to the additional distance and it was much more possible to support a small hospital in Te Puia than further north⁵³.
- Te Puia's geo-thermal potential was also seen as an influential factor in that it was seen as having heating, healing and tourism potential.

Services and Facility Type Community Consultation Summary Points

- The majority of participants were in favour of a purpose built integrated facility with a small number of beds, (nine beds frequently mooted).
- There was a strong and collective view across all hui that the facility should provide a 24/7 service; one that covered emergency, palliative, acute medical and respite care.
- A relatively small number suggested investigation of the potential for the redesign and refurbishment of some of the existing buildings at Te Puia or leaving them as they are with a limited upgrade.
- While the communities all wanted the retention of aged care and maternity services, there was also the recognition that services, particular in the maternity discussions, had to be sustainable, (noting the impact of locum costs) and a quality service, one that incorporated tikanga.

⁵¹ 2013-Nov. East Coast Health Review - Summary of Themes - from Community Consultation Hui

⁵² Review of health services on the East Coast, <http://www.tdh.org.nz/assets/Media/Review-of-health-services-on-the-East-Coast.pdf>

⁵³ Review of health services on the East Coast, <http://www.tdh.org.nz/assets/Media/Review-of-health-services-on-the-East-Coast.pdf>

Hospital Service Provision Needs Assessment

While few other regions have a population catchment with the same high health needs and isolation challenges as the NPH rohe (which has only one major arterial road), many other regions of NZ have similar population bases and rural health facility requirements. The following table⁵⁴ summarises the hospital bed numbers of a sample of rural hospitals in NZ.

RURAL HOSPITAL EXAMPLES, NZ	Distance from main hospital	Approx. Pop. (Town / Area)	All Beds	Hospital / Retirement Beds		Hospital Beds Breakdown (where available)				Development Info (where available)
South Island Examples			Total Beds	Retirement Home Beds	Hospital Beds	In-Patient Care Beds	Elderly LTC	Assessment, Palliative, Rehab	Maternity	
Murchison Hospital	1hr 45min	1,100	8		8		6	2		
Akaroa Health Hub	1hr 30min	1,350	12		12	4	8			\$4.5M development planned 2019
Maniototo	1hr 45min	2,000	31	16	15	6	7		2	\$7M currently fundraising
Reefton	1hr	2,000	26	20	6		5	1		
Darfield Hospital	35min	3,000	10		10	8			2	
Kaikoura hospital	2hrs 40min	3,500	21		21	6	14		1	\$13.4M built in 2016
Golden Bay	2hrs	3,700	29		29	5	24			\$9M 2013
Oxford	50min	3,900	15		15	3	8	4		
Buller	1hr 20min	10,000	29		29	8	17		4	
Balclutha	1hr	17,000	17		17	14		1	2	\$2.6M redevelopment 2013
Gore	1hr	21,000	20		20	12		4	4	Built in 1999
Queenstown	2hrs	23,000	21		21	10	6		5	
Dunstan	2hr 45min	25,000	24		24	24				
North Island Examples			Total Beds	Retirement Home Beds	Hospital Beds	In-Patient Care Beds	Elderly LTC	Assessment, Palliative, Rehab	Maternity	Development Info (where available)
Whangaroa	1hr 40min	3,000	24	10	14		14			
Te Aroha	1hr	4,000	46	22	24		24			
Te Kuiti Hospital	1hr	4,200	10		10	10				
Dargaville Hospital	50min	4,200	16		16	12			4	
Taumarunui Hospital	2hrs	4,500	14		14	-	-	-	-	
Dannevirke	1hr	6,000	11		11	8			3	
Hokianga Hospital	1hr 40min	6,300	26		26		10			\$2.2M upgrade started 2018
Wairoa	1hr 40min	8,000	14		14	9		2	3	\$2.4M upgrade proposed in 2010
Opotiki	40min	8,500	6		6	4			2	
Hawera	1hr	12,000	26		26	21		1	4	\$7.9M built in 2002
Tokaroa Hospital	1hr	13,600	21		21	-	-	-	-	
Kawakawa	45min	-	23		23	-	-	-	-	
Kaitaia Hospital	2hrs	21,000	26		26	-	-	-	-	\$11.9M redevelopment 2007

⁵⁴ **Note:** The data in this table was sourced from a combination of DHB and hospital websites. It is intended to give an 'indicative' assessment of hospital service provision in other areas. Detailed consultation with individual Health Boards and confirmation of official population catchments was not possible within the scope of this project.

38. Assessment of Hospital Medical and Maternity Bed Requirements

Analysis of a sample of bed numbers for other rural hospitals throughout NZ indicate that hospitals with a similar population catchment and distance from a main hospital generally have around **9-10 medical beds when including maternity**, but excluding Long Term Care (LTC) and retirement bed provision.

As argument can always be made, for service reduction and cost savings on one side, or service provision increases on the other, the following table has been used to gain an slightly more independent assessment of likely bed number requirements, based on provision in other rural areas of NZ.

The follow table includes only identified NZ rural hospitals with a population catchment of between 3,000 and 5,000 people. Figures exclude long term care bed provision and elderly care services.

NZ Rural Hospital Medical Bed Provision (pop. Catchment 3,000-5,000 people)

Location	Medical & Maternity Beds
Darfield	10
Kaikoura	7
Golden Bay	5
Oxford	7
Te Kuiti	10
Dargaville	12
Taumarunui	14
Total Beds	65
Average	9.3 Beds

Figure 14

Maternity Note: As maternity service provision varies by region depending on other services available (such as dedicated birthing units) this service has not been separated out as a separate element and is included in the above figures where these beds are part of the hospital facility.

39. Assessment of LTC and Retirement Bed Requirements

Consultation and anecdotal evidence indicated that many people from the East Cape are sending their elderly to care facilities in Gisborne, due to having higher quality facilities available. It is anticipated that demand for beds would increase, should facilities at Te Puia Springs Hospital be improved and a retirement (non-hospitalised) care option was available.

The following table includes example of Long Term Care (LTC) bed numbers and Retirement facility bed numbers for identified Rural NZ hospitals with population catchments of less than 6,500 people. **The average provision of LTC is 12 beds (or 9 beds, when excluding larger Te Aroha and Golden Bay sites).**

Location	LTC Beds	Retirement Beds
Murchison	6	
Akaroa	8	
Maniototo	7	16
Reefton	5	20
Kaikoura	14	
Golden Bay	24	
Oxford	8	
Whangaroa	14	10
Te Aroha	24	22
Hokianga	10	
Total	120	68
Average	12 Beds	17 Beds

Figure 15

40. Current Provision and Bed Number Requirement Projections

The table below summaries current bed provision, average occupancy for the 2017 calendar year and anticipated future requirement. Projections take into account future proofing and increased usage with improved facilities.

Important Notes:

- Average occupancy is over the entire year and does not reflect seasonal demand changes.
- Average bed occupancy should not be confused with maximum bed occupancy or demand. As at times more beds will be required.
- Occupancy is measured at mid-night and does not reflect part-day bed usage or day patients.
- As a Tikanga Māori / whanau centric hospital, spare beds are at times used for whanau who have travelled as support people for maternity and emergency patients.
- As there is no clear evidence for what is 'viable' in a mixed rural Māori setting, the future provision figures have been prepared by the NPH board's clinical representative and are based on the following factors:
 - A detailed understanding of current provision and what is used.
 - Likely changes as a result of building redevelopment, population shifts and facility improvements, particularly in regard to increased interest in residential care.
 - A review of other comparative rural hospital bed numbers.

Service	Current Number of Beds	2017 Average Overnight Occupancy	Future Bed Provision
Medical beds including: Emergency / A&E, In-Patients Care Ward, Rehab, Post-Operative Care, Palliative Care	6	2.23 beds (37%)	8
Maternity	3	0.13 beds (4%)	3
Flexible beds / Respite Care	2	0.5 beds (25%)	2
Long Term Care	11	4.7 beds (43%)	8
Retirement			Potential for future provision
TOTAL	22		21

Figure 16

41. Anticipated Flexible use of Beds

NPH anticipate a flexible approach to bed use to maximise utilisation and community benefit including:

Short Stay Admissions

- Treatment where distance or circumstances preclude daily review.
 - For example, asthma, pneumonias, wound infections etc.

Rehabilitation & Step Down Beds (exact services yet to be determined)

- Rehabilitation and step down beds to enable patients to recover closer to home.
 - For example, recovery after surgery, cardiac recovery, stroke recovery etc.

Short Stay 'Ambulatory'

- Short stays for ambulatory procedures where long term admission is not necessary.
 - For example, transfusions, chemotherapy, visiting specialists undertaking procedures etc.

Respite Care

- Well-designed facilities, to allow for appropriate level of care, staffing and activity areas.

42. Independent Assessment of Future Bed Provision

The above future provision requirements assessment, is deemed to be realistic in terms of both:

- Future proofing the facility for population changes and likely expansion of the forestry industry;
- As well as being aligned to the level of provision for comparative rural community hospitals, which have on average 9-10 medical beds when including maternity and 9-12 long term care beds.

43. Additional Researcher Observations and Notes

Maternity

- Based on occupancy it is possible that the number of maternity beds could be reduced to x2 beds in a higher quality birthing centre, however the whanau centric and tikanga Māori kaupapa of the hospital, must also be taken into account. Where offering hospitality to patient support people is an important part of child birth and the culture of care set by the hospital. At present whanau who have travelled a long distance are often housed in a small cottage on site.

Elderly Retirement Care

- Non-hospitalised retirement care is a strong possibility. However, more detailed demand projects or presale of spaces is recommended in order to ensure viability.

Examples such as the Maniototo (Central Otago) and Whangaroa (Northland) show that this service, when done well, can be both sustainable and profitable even in remote or isolated areas.

- Maniototo Hospital in Central Otago, which has 7 LTC beds and 16 retirement beds, has managed to accumulate \$2M in development funds for their replacement hospital. This fact points towards a well-run profitable model of care, which has allowed for reserves to be put aside to cover depreciation and facility replacement.
- Whangaroa Hospital in Northland, which has a similar remote rural Māori population catchment and strong focus on elderly care, have had 100% occupancy of their 24 beds (14 LTC and 10 retirement beds) for the past 6 months and have a 3-month waiting list. They have also developed a 1,000m² vegetable garden which supplies their facilities. This indicates that a similar model is possible within an East Cape context and validates assumptions that demand will increase with improved facilities and structures.

Post-operative Care

- Oxford Hospital in North Canterbury have a strong focus on step-up and step-down beds, with x4 beds allocated to post-operative care. This frees up beds in Christchurch Hospital and enables care closer to home. A similar structure and closer collaboration with Gisborne Hospital in this regard, should be considered by NPH.

NOTE: The level of demand for this type of care and identification of which services would be most beneficial to Gisborne Hospital, requires additional discussion with Hauora Tairāwhiti.

Respite Care

- With a strong range of specialist expertise in elderly care as well as mental health, drug and alcohol services, Te Puia Hospital holds significant potential for expansion of respite services for these sectors.
- The NPH team are already exploring collaboration possibilities with the neighbouring Bay of Plenty District Health Board who have recently issued a tender for expressions of interest for provision of respite care, with a strong cultural understanding and tikanga Māori approach.

Community Needs

The following community needs are taken directly from consultation undertaken by the GDC and included in the Te Puia Township Plan. Consultation was undertaken in 2011 with a view to inform development and investment for the 20 years following.

Many of these themes and elements are complimentary to the activities proposed by Ngati Porou Hauora as part of their proposed redevelopment project, which will see some of the hospital facilities, repurposed for more holistic community wellbeing activities.

At the time of the township plan consultation each township or region was to be allocated \$500K⁵⁵, with the five separate plans to be progressively implemented over a 10-year period, with different townships the focus each year.

To date Te Puia / Waipiro Bay Township plan has received no known investment and the GDC Township plan is scheduled to be implemented in 2021⁵⁶.

44. Children's recreation and Community Spaces

- Indoor activity centre/gymnasium. Activity centre for evening activities for kids.
- **Children's recreation adventure playground**, with skate park (\$30K to be allocated by GDC).
- Car park area at hotel spruced up as community uses it as a public area (safer). Area by the hotel could be fixed up to have a community event e.g. boot sales, farmers market.
- **Bus stop should be updated.**

45. Walkway and Lake

- **Walkway behind the hotel that encompasses kids learning needs.**
- Would like to be able to access and swim in the lake, confidence around its cleanliness. Pontoon proposed.
- **Manuka planting to hold erosion areas, native beautification, restoration of walkways.**
- Raised interconnected walkways along the coast ie. between beaches and up to the maunga.
- Clean and beautify the lake area and develop a local heritage trail (Funds to be allocated by GDC and DOC).

46. Tourism

- **Good signage that says what Te Puia is about. Town service directory and story board signage** (\$1K to be allocated by GDC).
- Hot water from geothermal pools – stronger local hapu control over hot water use.
- **Hot Springs reopened** – bring in business – with natural look and feel, bring tourists. Whole community can take pride and embrace.
- Install a 'Hospital' sign (tourists don't know what Hauora is).

47. Community Services

- **Important to keep Hauora and Service Centre.**
- More doctors at the hospital.

48. A community which...

- Has togetherness and collaboration, growing with enthusiasm.
- Works hand and hand together with Council to improve the township.
- Has a thriving multi sector economy.

⁵⁵ <http://www.gdc.govt.nz/assets/Files/2016-17-Annual-Plan/Final/Annual-Plan-2016-17.pdf> page 7.

⁵⁶ GDC Longterm Plan 2015-2025

49. Hydrotherapy

Hydrotherapy pool

Water-based exercise can help people with chronic diseases that affect the joints. For people with arthritis, it improves use of affected joints without worsening symptoms and eases pain. People with arthritis have more health improvements after participating in hydrotherapy than with other activities. In the Gisborne region, there are a significant number of people with arthritis. In 2013, of the 35,310 people in the Gisborne district, **more than 5,000 people (approximately 15%) had some form of joint condition, which would benefit from hydrotherapy.** It is anticipated that this figure will grow to an estimated 17%, (over 6,000 people) by 2028.⁵⁷

When considering that Te Puia Springs is within a day trip driving distance of Gisborne and the added health benefits of Geothermal mineral water bathing, **there is significant potential for a geothermal hot pool development to appeal to a large portion of Gisborne residents for health and recreational purposes.**

It is anticipated that promotion of multi-visit concession cards via local Gisborne sports clubs (as a fundraiser) would further encourage use from a wider population segment.

50. Water and Waste

Utilities such as water and sewerage reticulation contributed historically towards large improvements in population health in New Zealand. Maintenance of these services, which should not be taken for granted, is essential to protecting population health and should be a high priority⁵⁸.

Ngati Porou Hauora current provide reticulated water and sewage services for much of the Te Puia Springs township. In general terms and a NZ context, water and waste service provision are largely a council responsibility. Ngati Porou Hauora currently receive very little compensation, other than a small fee from local businesses – which does not cover the cost of these activities. They continue to provide services, due to the historic precedent and a belief that it is important for the township and health of the local people.

While the current water treatment system is in very good condition having had \$1M of investment, identified needs include:

- Replacement of the old distribution pipe network which is prone to leaks and ruptures and frequently needs fixed, at Ngati Porou Hauora expense, to prevent water loss.
- An additional storage tank to enable uninterrupted water supply during flood events. Removing the need to pump water while the catchment is still muddy and reducing maintenance and cost of having to replace filters and scrubbers.
- Resource consent for water use. While arrangements with the forestry company have been made giving a clear right of way and section of land ownership for water pipe access, it is our understanding that resource consent for the actual water use was never finalised, due to changes in staff and insufficient budget allowance for this activity. Consultation indicated that resource consent existed for a different catchment, but had never been updated to reflect changes in water source. NOTE: Detailed investigation into this issue was not undertaken as part of the scope of this project.

⁵⁷ GDC Olympic Pool Business Case <file:///C:/Users/Impact/Downloads/17-152-X1-Appendix-Olympic-Pool-Business-Case.pdf>

⁵⁸ <https://www.health.govt.nz/system/files/documents/publications/det-health.pdf>

Identified Community Needs Summary

51. Community Needs

The following table summarises identified community needs which could potentially be addressed in association with the proposed development.

Needs	Summary
1. Retention of GDC Service Centre	Community consultation and town planning indicated a clear need to retain the GDC Service Centre within the township. Potential relocation and incorporation of the GDC service centre within the proposed redeveloped hospital building would reduce duplication of reception services, enable shared office resources and reduced operational costs such as heating.
2. Retention of health services	The preference of the NPH Board and community is for retention of hospital services in Te Puia over other options.
3. Adventure playground	The Te Puia Springs Hospital site lends itself well to the establishment of an adventure playground and youth facilities, which are easily visible from the road and creates a natural stopping point for visitors.
4. Improved town signage	Improved town and hospital signage
5. Manuka Planting to prevent erosion	Community have expressed a desire to see Manuka planting increased to prevent erosion throughout the district. With around 10 hectares of unused land holdings associated with Te Puia Springs Hospital and houses, there is potential for establishment of a manuka nursery.
6. Replacement Bus Stop	Removal of trees and unused buildings would create space for an adventure playground while also improving space available for the Te Puia Springs bus stop.

Economic Development Needs

52. Commissionable Tourism Product Offerings Needed

Consultation with Activate Tairāwhiti (Economic Development Agency for Gisborne and the East Cape) indicated that a major challenge to development or growth of the tourism sector for the East Cape is the lack of commissionable tourism product offerings. At present, there are a limited number of products available, but essentially visitor can currently drive the length of the East Cape in a day and spend virtually no money on route.

Additional product offerings are needed in order to slow travellers, add bed nights and increase the value of tourism spend for the local economy. These offerings need to help reinforce and tell the story of the region.

Geothermal Spa Attraction

Activate Tairāwhiti's tourism team are supportive of the concept of a hot pools attraction. Having considerable experience in this sector and the management of hot spring facilities their recommendations were:

1. Location
Te Puia Springs is considered an ideal location as it is a driveable distance from Gisborne for a day trip and has potential to become a destination attraction.
2. Story
The offering needs a story wrapped around it including, the remote rugged beauty, the first place to see the sun, the healing properties, cultural tradition and energy of the water.
3. Air Transport
Ability for air transport / helicopter to location and local golf course also offer additional possibilities.
4. High End Offerings
Once numbers are viable incorporation of high end well packaged offerings centred around slow living, rehab and transformation are suggested. These may include Māori yoga, massage and digital detox offerings.
5. Accessible to Locals
It is also suggested that the price point needs to be accessible to locals and day visitors from Gisborne, with high repeat visitation via a concession card, in order to enable sustainability while tourism numbers are growing.
6. Sustainable growth
It was noted that a venture of this nature will need time to establish itself on the map and become profitable. While high end luxury offerings are possible, a base level product needs to be established to provide sustainable revenue first.

Local Economic Development Partnership Possibilities

53. Hikurangi Enterprises Geothermal Greenhouses

Organisational Overview

Hikurangi Enterprises⁵⁹ are facilitating a Ministry of Health approved clinical trial crop of pharmaceutical cannabis on the East Cape. This trial now has 5-thousand plants and currently employing 15 growers.

The company have recently signed a conditional \$160M deal with American company, Rhizo Sciences and are awaiting NZ Government legislative changes which would enable export. The global market for pharmaceutical cannabis is anticipated to worth an estimated NZ\$82b within five years⁶⁰.

Their current objective is providing a lower cost alternative to therapeutic products, with some medical grade products currently used in NZ costing \$1,400 per bottle. The company anticipate being able to produce a similar quality hemp based product for around \$150 per bottle by 2019.

Perceived Partnership Opportunities for Further Exploration

1. Geothermal - Potential collaboration in regard to access to, and utilisation of, geothermal water resource.
2. Greenhouses - Potential for development of secure, climate controlled greenhouses (using geothermal heating), on the old primary school site in Te Puia Springs, adjacent to the hospital site on McKenzie Street. This site falls under the Te Whanau a Iritekura Whenua Topu Trust treaty claim.
3. Laboratory - If an independent commercial testing laboratory was incorporated into the proposed redevelopment, Hikurangi Enterprises would be a potential user (although would most likely still develop their own in-house research facility).

54. Pack House & Manuka Nursery

Organisational Overview

Manuka Honey is a growth industry. “Manuka is the most expensive honey in the world. New Zealand honey exports were worth \$300 million in 2015. Ninety percent of that value is related to manuka. We rank 15th in terms of global honey trade but third in terms of price.⁶¹” In 2015 a collective of Ngati Porou land owners formed an umbrella company called Ngati Porou Miere to facilitate entry into the Manuka Honey industry⁶². Additional potential collaborators include the NZ Manuka Industry Action Group, and the New Zealand Manuka Group. Facilities at Te Puia Springs could be used by these or other Primary Sector Partners.

Perceived Partnership Opportunities for Further Exploration

1. Packing Facility - Potential for development of a primary sector pack-house operation within the now unused hospital laundry building at Te Puia Springs. Meaning better utilisation of facilities and land already within the TRONPnui umbrella of organisations.
2. Manuka Nursery - Potential for establishment of a Manuka plant nursery on unutilised areas of the Te Puia Springs Hospital site, as well as other Te Whanau a Iritekura Whenua Topu Trust land. It is envisaged that this nursery could supply Manuka bushes for additional planting and growth of the Primary Sector Partnersoperation, as well as for forestry and road verge planting and erosion control projects. Minginui Nursery⁶³ and Tanes Trees Trust⁶⁴ are examples of similar operations.

⁵⁹ <https://hikurangi.enterprises/>

⁶⁰ <https://www.stuff.co.nz/business/industries/101712141/160m-kiwi-cannabis-export-deal-to-us>

⁶¹ <http://gisborneherald.co.nz/business/2210401-135/huge-potential-in-manuka-honey>

⁶² <http://www.ngatiporou.com/article/take-honey-not-money>

⁶³ <http://www.minginuinursery.nz/nursery/>

⁶⁴ <http://www.tanestrees.org.nz/>

55. Geothermal Spa Attraction

Organisational Overview

Anticipated Lead Organisation:	TRONPnui
Anticipated Supporting Organisations:	NPH, Te Puia Spring Hotel, Te Whanau a Iritekura Whenua Topu Trust, Activate Tairāwhiti, GDC

It is anticipated that if a commercial geothermal spa tourism development was to be undertaken, that this would be in collaboration with, and led by, TRONPnui. It is anticipated that NPH and the Te Puia Springs Hotel would be supporting partner organisations, who would provide reception and maintenance staffing. Leading to cost efficiencies for all organisations.

Perceived Partnership Opportunities for Further Exploration

1. Development and Promotion – It is anticipated that any development would need the support and partnership of TRONPnui, Activate Tairāwhiti, the Te Whanau a Iritekura Whenua Topu Trust and the GDC.
2. Staffing – It is anticipated that reception and maintenance staffing for a hot pools operation could be provided by NPH, via an annual salaries contribution from the hot pools entity. This avoids the need for hiring of dedicated staff, avoids duplication and removes staff management challenges for the hot pools. It is suggested that in the evenings when the hospital is closed to the general public (other than emergencies), that the pools and ticket sales could be managed in collaboration with Te Puia Springs Hotel, via a baseline service retainer fee and sales commission over and above an agreed level of sales.
3. Value Added Services – Once operational, it is anticipated that there is opportunity for a huge range of value added services to be provided under a NPH holistic health umbrella, including:
 - Massage
 - Beauty services
 - Injury rehabilitation programmes
 - Yoga and contemplative or faith based retreats
 - Mental health retreats and workshops
 - Digital detox retreats and workshops

As well as traditional healing options, such as:

- Consultation with a Rongoā expert could be incorporated into spa healing packages
- Rongoā Māori (healing with native plants)
- Romiromi and Mirimiri (traditional forms of massage)

The availability of accommodation (Te Puia Springs Hotel), the rugged remote location, day-trip driving distance to Gisborne and the onsite helipad, are all factors which could help to support the development of added value services once geothermal pools were operational.

4. Conferences and workshops – Partnership with the Te Puia Springs Hotel would enable small conferences and courses to be hosted in Te Puia, with the hot pools acting as a destination draw card.
5. Sports Fundraising – It is perceived that there would be opportunity to support local sports teams from Gisborne in fundraising for their activities, via sale of multi-trip or group booking concession cards for the hot pools. For every card sold and paid for online a commission would be paid back to the relative club. A partnership of this nature would enhance day trip visitors and regional promotion while also supporting other community groups.

56. Café and Health Products Store

There is potential for a café which caters for both travellers, as well as hospital staff and patients to be established within the redeveloped hospital / community facilities. This café would serve as a visitor focal point and in association with a playground visible from the road, would encourage travellers to stop in Te Puia. When open, the café would also act as the booking office for the hot pools (if developed).

Perceived Partnership Opportunities for Further Exploration

1. Health Products Outlet – The café could potentially serve as an outlet store for high quality NZ made natural medicines, manuka honey and specialist Rongoā treatments.

57. Cultural Opportunities

The development of a commercial hot pools operation opens up a number of possibilities in regard to differentiating Te Puia Springs as a destination. Nationally, there is currently a growing interest in Māori language⁶⁵. The fact that Te Reo is still very much alive as a language on the East Cape presents a cultural capital opportunity to share this with others.

Perceived Partnership Opportunities for Further Exploration

1. Te Reo Immersion Multi-Day Retreat – Potential exists for partnership between the Te Puia Springs Hotel and local Marae to establish a Te Reo Immersion multi-day course. With the location, proposed geothermal hot pools and affordable quality hotel accommodation providing points of differentiation. While a noho marae stay may still be a part of the course, the collaboration would provide engagement opportunities for older people and those to whom a traditional marae stay may not be suited or appealing.

58. Business Incubation and Mentoring

Potential exists for a business incubation and mentoring programme to be run from Te Puia Springs. Consultation with local elders indicated that small businesses on the East Coast (especially independent forestry contractors) often fail due to lack of education and support around business administration, compliance and tax. With these factors, including unpaid tax debt often forcing operators out of business after a couple of years.

Perceived Partnership Opportunities for Further Exploration

1. Business Support – It is perceived that there may be opportunity in collaboration with TRONPnui, Activate Tairāwhiti and local accounting firms, to provide business support and mentoring service via a regular group programme delivered from Te Puia Springs.

59. Additional Local Economic Development Opportunities

See Appendix 3 for a list of additional potential partners, opportunities and links to entities and models from other parts of NZ.

⁶⁵ <https://www.stuff.co.nz/national/99662946/massive-upsurge-in-white-new-zealand-wanting-to-learn-te-reo>



LEADERSHIP



Collaborative Success

He ora te whakapiri

There is strength in unity.

The bigger Picture

60. Holistic Community Health and Regional Social Change

While this project's primary focus is on the physical buildings and proposed amenities, it is important to note, that these form only a small part of NPH's overall vision for regional improvement in health, social and economic outcomes for their community within one generation.

When we think of "health", most people instantly think of preventing or curing physical sickness ie. a hospital. However, from a Māori perspective health is more about wellbeing. It encompasses much more than our bodies and is intrinsically linked to all we do, including our social interactions with others.

One of the most widely acknowledged Māori models of health, Te Whare Tapa Whā (the four cornerstones of Māori Health), includes four key elements 1) Taha tinana (physical health), 2) Taha wairua (spiritual health), 3) Taha whānau (family or social health) and 4) Taha hinengaro (mental health).

From this perspective, it is clear that, if NPH are to improve regional "health" outcomes for a rural community with 95% Māori population, they need to have a vision that stretches well beyond the standard definition of a hospital.

It is through a return to their roots and application of traditional wisdom (which considers health as an ecosystem) to current and future issues, that NPH see the greatest potential for positive social change for their community.

"It's all connected. There are young mums with depression trying to look after their kids and men who have lost their jobs, or their businesses have failed because they haven't got a full education or learnt about saving for tax and how to run their business... When things go badly our young people get up to things they shouldn't and then we end up with drug and addiction problems. Our people need education and chances to work... We need to keep the hospital and help bring more jobs to the coast." Elder (Local Kaumatua / Pakeke | Regional Co-ordinator for the Wānanga o Aotearoa)

Potential Scope of NPH Community Leadership Role

61. Importance of Local Economic Development for Health

The importance of local economic development and socioeconomic determinants for health is highlighted in the NPH Health Dashboard 2016.

The multiple effects of a high number of Māori living in very high deprivation areas, constitute *the most important determinant of health* for the rohe and the continuing inequity of income and resource distribution poses the biggest challenge for NPH in improving health and reducing inequality⁶⁶.

Source: Ngati Porou Hauora PHO Health Dashboard 2016

⁶⁶ [Ngati Porou Hauora PHO Health Dashboard 2016](#)

62. NZ Treasury Living Standards Framework

By 2019, the New Zealand government aims to be the first country to assess bids for budget spending against new measures, that determine not just how our spending will impact on GDP, but also on natural, social, human, and possibly cultural capital too⁶⁷. The NZ Treasury Living Standards Framework encourages a holistic view of policy decisions.

Describing living standards as much more than just income or GDP: they include a broad range of factors which impact on well-being (such as trust, education, health and environmental quality). This diagram summarises what Treasury thinks are the important factors to consider for achieving the goal of higher living standards.

- In relation to these measures, retention of a hospital on the East Coast is a positive influence for financial, physical, social and human capital, while the potential development of geothermal resource would aid in enhancing the natural capital of the area.

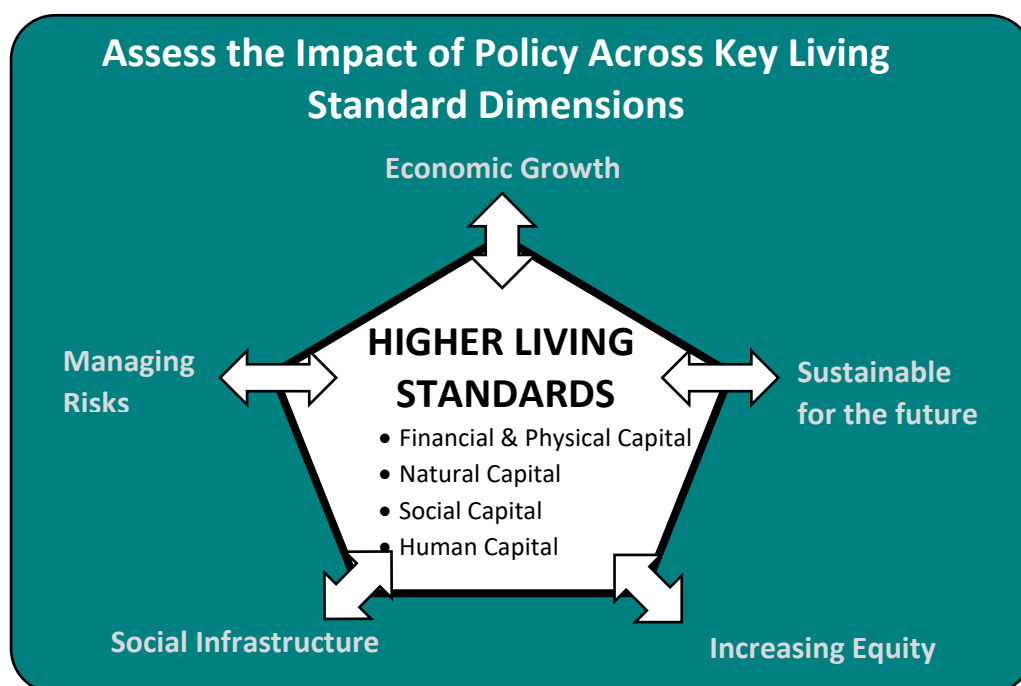


Figure 17 – NZ Treasury Living Standards Framework⁶⁸

63. Social, cultural and economic determinants of health

From a Māori perspective health is about holistic wellbeing rather than just physical health.

From as early as 1998 (and before) the NZ Ministry of Health has recognised that social, cultural and economic factors are the “most important determinants of good health⁶⁹”. With the key factors identified included the following: 1) Housing, 2) Education, 3) Employment, 4) Income, 5) Culture and Ethnicity, 6) Social Cohesion 7) Services and facilities⁷⁰.

These are still key topics within the health sector, as well as within resilient community strategies and discussions. Consultation with the NPH Board reinforced this point and is part of their rationale for viewing health, the proposed facility redevelopment at Te Puia Springs from a wider community health and well-being perspective, including opportunities to act as a catalyst for economic and employment opportunities.

⁶⁷ <https://www.stuff.co.nz/national/politics/101066981/nz-government-to-lead-world-in-measuring-success-with-wellbeing-measures>

⁶⁸ <http://livingstandardsnz.org>

⁶⁹ <https://www.health.govt.nz/system/files/documents/publications/det-health.pdf>

⁷⁰ <https://www.health.govt.nz/system/files/documents/publications/det-health.pdf>

64. Ngati Porou Hauora Board Vision

The Ngati Porou Hauora Board see potential for the proposed redevelopment project to be a catalyst for change on the East Cape, via partnership and linkages to multiple sectors of the community to create critical mass.

Health Leadership

- Establish a new, or significantly upgraded, whanau-centric green-hospital.
- Establishment of a Centre of Excellence for Māori and Rural health incorporating traditional Māori healing and partnerships with top NZ Universities. With ability to become a national training hospital for our next generation of rural health professionals, and international flagship example of indigenous health and wellbeing, and community participation in health.

“The Ngati Porou region is a rare and precious, untouched part of New Zealand where Māori traditions and true rural living has been preserved, and NPH is vital for keeping this community alive. NPH’s new facility will put Ngati Porou on the map, offering a world-leading service where the community owns their own health and wellbeing.” – Source: Ngati Porou Hauora Draft Strategic Fundraising Plan

Community Engagement Partnership

- Partnership with GDC to bring the Council’s Te Puia Service Centre into the redeveloped building with a shared reception and office resources enabling savings for both organisations.
- Potential to hub Te Puia Town plan facilities, such as an adventure playground on site.
- Establishment of bush link walking track in association with the Department of Conservation and GDC, from lake to hospital, hot pools and hotel.

“Ngāti Porou Hauora wishes to redevelop the facilities at Te Puia Springs, including the rural hospital. This redevelopment is not to build a ‘bigger’ hospital, but rather redesign the existing infrastructure to unlock the potential for a more holistic community facility.” – Source: Feasibility Project Brief

“NPH’s overall community engagement is significantly higher than most health providers, and they have been internationally recognised as an example of “meaningful community participation, power and decision-making in health systems”.” – Source: Ngati Porou Hauora Draft Strategic Fundraising Plan

Economic Development Partnerships

- Partnership with Te Whanau a Iritekura Whenua Topu Trust, TRONPnui and Hikurangi Enterprises to establish a collective case for funding support for geothermal resource development.
- Support of Hikurangi Enterprises in discussions around potential establishment of geothermally heated green houses on the historic primary school site, adjacent to hospital grounds.
- Support of TRONPnui, Te Whanau a Iritekura Whenua Topu Trust and Te Puia Springs Hotel in establishing a commercial hot pools tourism venture. Making Te Puia Springs a destination location for day travellers from Gisborne and extending the stay lengths of travellers
- Discussions around the possibility of using surplus buildings as a potential pack house or operational space for Primary Sector Partners and potential to establish Manuka Nursery on unused areas of the hospital grounds.
- Potential to incorporate good quality shared meeting and video conference facilities into the building, enabling greater public access to Activate Tairāwhiti courses, as well as meeting space for visiting professionals.

“The facility will reflect Ngāti Poroutanga while serving all those who live in the rohe. It will be a space for supporting community initiatives, connectedness, innovation and enterprise.” – Source: Feasibility Project Brief



DEVELOPMENT OPTIONS | Balancing Old and New

Titiro whakamuri, kokiri whaka mua.

Look back and reflect, so you can move forward.

Te Puia Springs Township and Site Details

65. Proposed Site

As this project potentially involves the collaboration of multiple entities the following site images are provided to give a geographic context to the potential elements.

66. Te Puia Springs Hospital Site (and partial view of township)



Figure 18 – Source GDC Tairāwhiti Maps

67. Te Puia Springs Hospital - Site Overview / Zoning Info

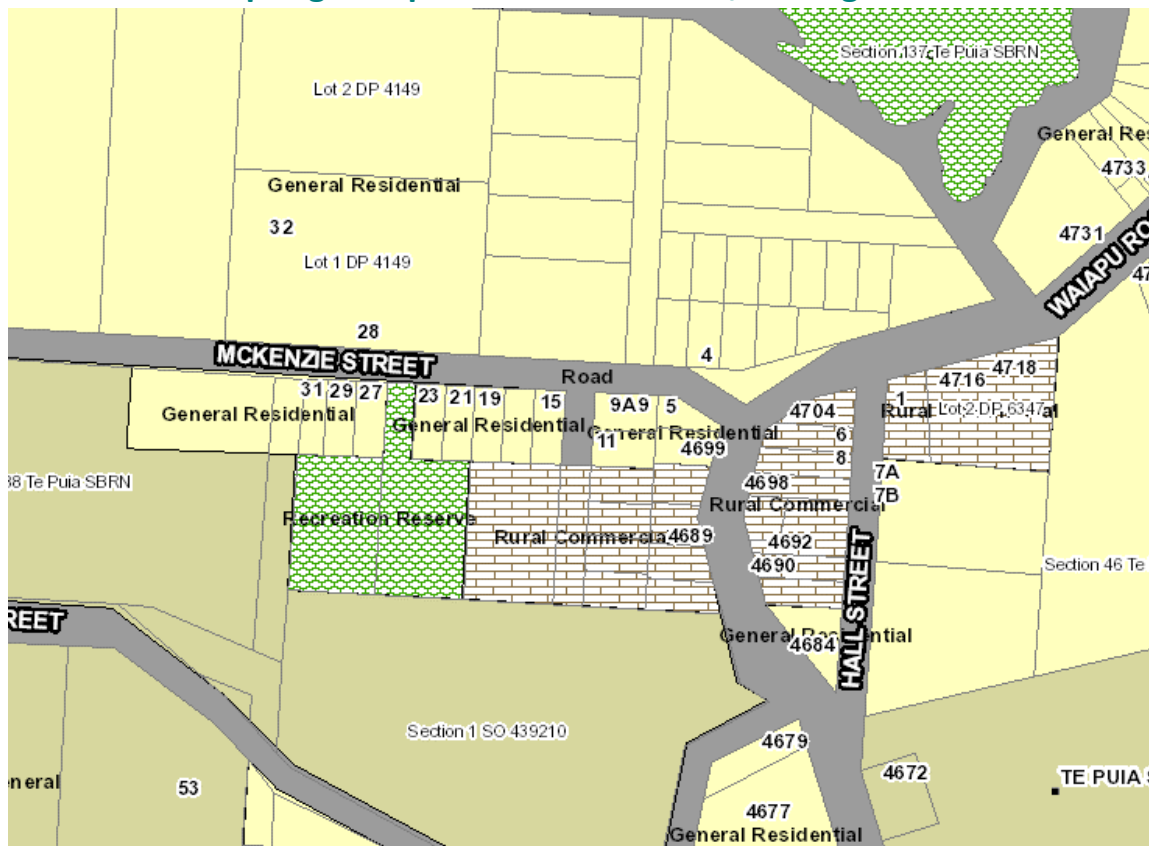


Figure 19 – Source GDC Tairāwhiti Maps

68. Hospital Site

Land

There are significant unused land holdings (over 10 hectares) associated with the houses in Te Puia and Te Puia hospital. However, under NPH Inc. ownership Land Title had a caveat which effectively put NPH Inc as kaitiaki until such time that the beneficial owners proved through a Treaty claim their ownership. How this affects the future use of the land needs to be determined so that the full benefit of the asset can be achieved for the owners be that NPH or others.⁷¹

While part of this land is not suitable for construction and the remainder is of limited commercial value, exploration of commercial partnerships such as a nursery or organic food operation are recommended.

Other possibilities include partnership with Housing NZ (or similar) to build social housing units on suitable unused portions of the site, utilising transportable buildings.

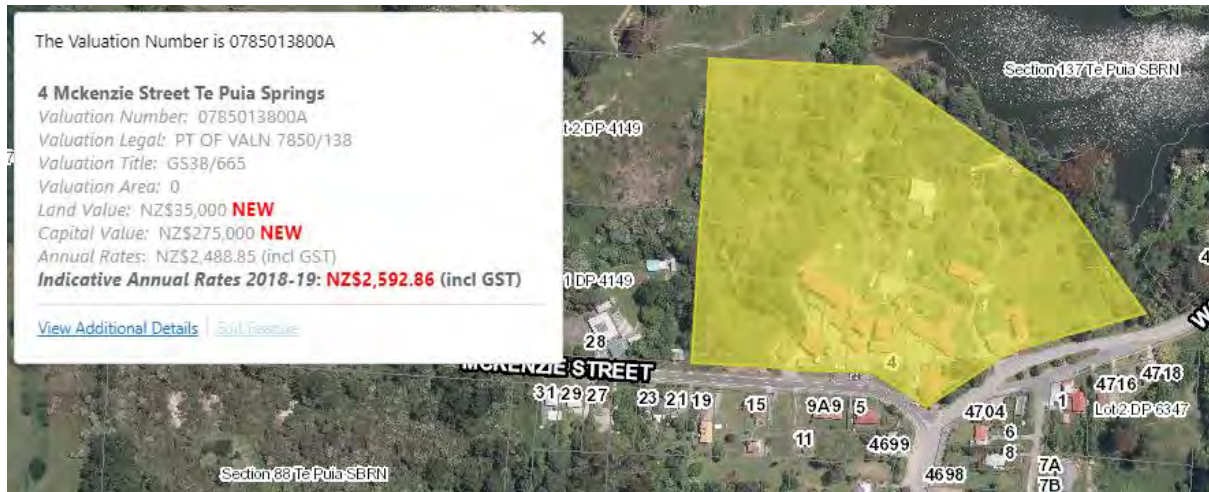


Figure 20 – Source GDC Tairāwhiti Maps

Owner on title: Ngati Porou Hauora Charitable Trust Board



Figure 21 – Source GDC Tairāwhiti Maps

Owner on title: Ngati Porou Hauora Charitable Trust Board

⁷¹ Review of health services on the East Coast - Public Report, Sapere Research Group, 2013
Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

69. Te Puia Springs Hotel



Figure 22 – Source GDC Tairāwhiti Maps

Owner on title: Bright Home Trading Limited (Te Puia Springs Hotel)

Hotel Images

Top left: Historic image. Others: Show the current hotel with aged exterior and fully renovated interior.



Figure 23 – Source Booking.com

70. Section Behind / Adjacent to Hotel (Potential pools site)



Figure 24 – Source GDC Tairāwhiti Maps

Owner on title: Bright Home Trading Limited (Te Puia Springs Hotel)

Section Behind / Adjacent to Hotel – Images

The section behind the hotel is well kept and features natural slopes, with multiple lawn areas and tree groves and a sunny aspect, surrounded by bush. This area is the historic site of large hot pools. The overflow from the Hotel's existing small hot pool flows through the site.



Figure 25

71. Reserve Land



Figure 26 – Source GDC Tairāwhiti Maps

Owner on title: Gisborne District Council (Recreation Reserve Land)

72. Old School Site (Potential geothermal greenhouse or pools site)



Figure 27 – Source GDC Tairāwhiti Maps

Owner on title: Her Majesty the Queen (no-longer required for education purposes)

Although possible to use this site for hot pools, it would require significant planting and landscaping investment for outdoor pools in park setting. Site is much better suited to greenhouse or nursery use.

School site Images



Figure 28

73. Geothermal Catchment and Location of Water Supply Storage Tanks



Figure 29 – Source GDC Tairāwhiti Maps

Owner on title: Te Runanganui o Ngati Porou Trustee Limited

Storage Tanks

Treated / Filtered Fresh Water Storage Tanks.



74. Water Treatment Station and Storage Tanks



Figure 30 – Source GDC Tairāwhiti Maps

75. Fresh Water Supply Catchment

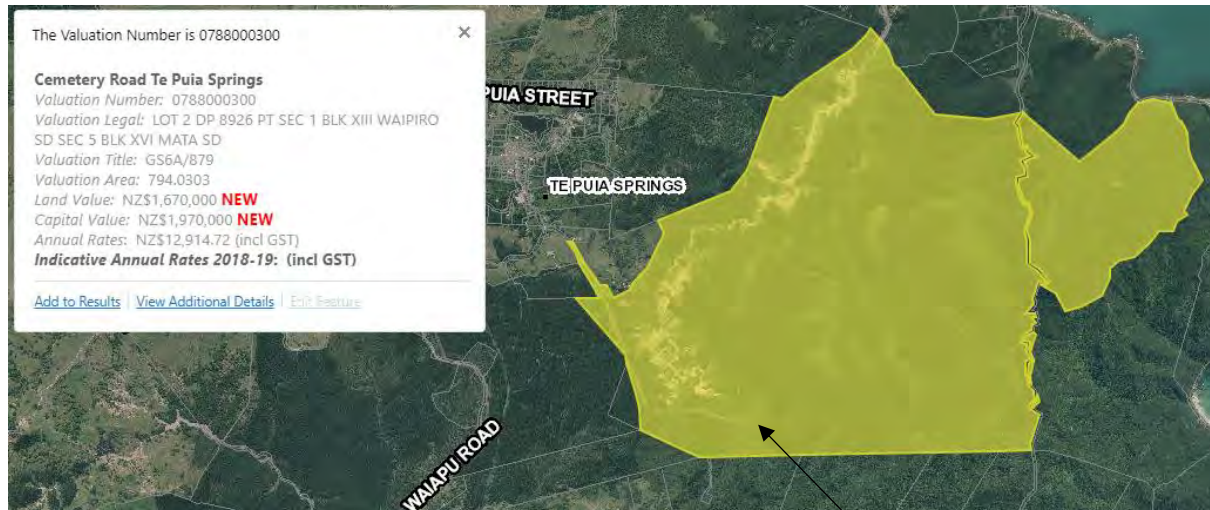


Figure 31 – Source GDC Tairāwhiti Maps

Owner on title: Karen Tangi McClutchie

Pumping Station and Water Intake Point.

Commentary from NPH staff indicated that a legal agreement was put in place with owners of the forestry block allowing for the water pipe line, power supply and road access as needed. Water is sourced from a stream which flows in from an adjacent block of native bush, which according to LINZ land parcel info is owned by Steven Paul Ryland.



76. Water Intake Pumping Station



Figure 32

77. Site Stability Considerations

KGA Geotechnical undertook a preliminary site review and geotechnical assessment report, based on observations and existing evidence in September 2014. The footprint of the existing building is considered to fall within the intact portion of the site and suitable for construction.

Their findings as summarised in their executive summary are as follows.

“The Te Puia Springs township is located on a large scale, deep seated, active landslide which is moving in a north-easterly direction towards the coast. Buildings located towards the east of the site [unused buildings] have undergone distortion as a result of ground movement associated with this landslide. The land in this area is considered unstable. In contrast, the structures located centrally and to the west of the site are performing well, given they are approximately 65 years old. While this area is moving as part of the global land movement, it has remained intact. As a result of this, we have designated a line of instability dividing the unstable and intact portions of the site.

Based on the performance of the current buildings, while still possible over the design life of the buildings, we consider the risk of the intact zone to be distorted to be low. In terms of geotechnical constraints, we consider that it would be possible to reuse the existing buildings in this zone, or construct new buildings in the same area.”

Source: KGA Geotechnical - Geotechnical Engineering Site Appraisal, Proposed Hospital Upgrade, 30 Sept 2014

Key point summary of site related findings recorded in the KGA report:

- Construction is considered possible on the central and western portions of the existing site including the existing building platform, with low risk of land distortion.
- Previous reports have identified that the progress of the large township wide landform movement is approximately 60 – 100mm per year. With vertical movement of approximately 1/3 of the horizontal movement.⁷²
- Site investigations for a Ministry of Works depot site south of the hospital (accessed directly off Waiapu Road), recommended foundations to a depth of 2.1m⁷³ (NOTE: as building structure and footprint is yet to be confirmed, site based bore holes have not yet been undertaken for the hospital site).

Designated Areas - Intact (Safe) and Unstable (new construction not recommended)

The following image outlines the areas considered suitable for construction and those deemed less stable.

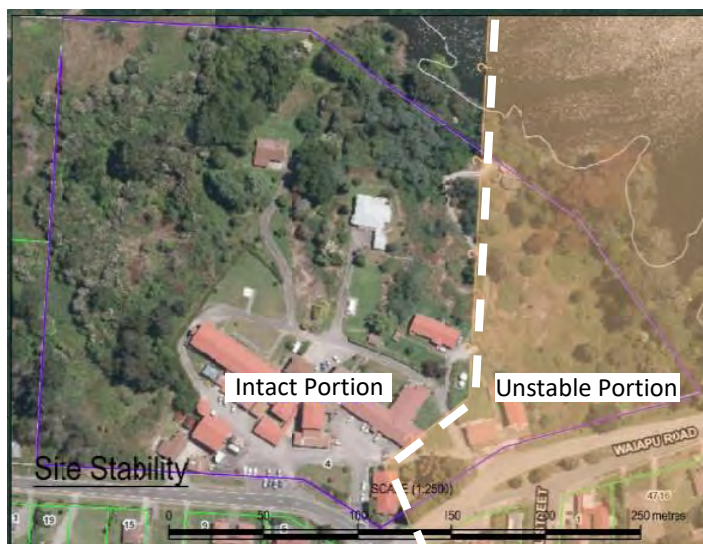


Figure 33 - KGA Geotechnical - Geotechnical Engineering Site Appraisal, Proposed Hospital Upgrade, 30 Sept 2014

⁷² Aorangi Surveys Report, 2003 and 2007

⁷³ Opus Report 2001

78. Alternative Site Options Consideration

The NPH board are agreed that the best future hospital health service provision site is Te Puia Springs. This decision is supported by rational reasoning and analysis, as well as the majority view from extensive public consultation.

In 2003 a report⁷⁴ commissioned by the Hauora Tairāwhiti (District Health Board) and NPH considered site options as part of an extensive review of health services on the East Coast. In regard to site / location, the findings of this report recommended Te Puia Springs as the most appropriate location for future hospital and central health hub services. The other main site option considered as part of the health service review was Ruatoria.

While Te Puia may not be a first-choice location with regard to residential population base, it does have a number of significant strategic advantages over Ruatoria and other potential locations, which make it the preferred location for future service provision. These include (but are not limited to):

1. Infrastructure: Te Puia has a water supply, housing, parking and other existing infrastructure that other locations don't have and would be problematic to provide in the likes of Ruatoria.
2. Water Supply: There is no town water supply in Ruatoria. Everyone relies on rainwater. In the middle of summer most residents are faced with buying in water. In contrast Te Puia Springs has a good town water supply (treated), which is maintained by the hospital. The water treatment and pumping systems alone, represent over \$1M in existing infrastructure investment. If a new site was selected it is unlikely that the Ministry of Health would duplicate their investment, hence this requirement would likely fall back to the GDC or local community.
3. Dust and Pollen: Dust from the Waiapu River is an issue in Ruatoria; in the summer the river almost dries up and in the hot afternoons the wind blows down the river bed and creates a mini dust storm. Pollen from the pine forests and prevailing winds, is linked to the very high incidence of respiratory problems in the district. These are not issues in Te Puia Springs.
4. Sewage: Ruatoria and other locations do not have existing sewage treatment plants and systems. There is no town sewage treatment plant in Ruatoria. All dwellings have their own septic tank. In contrast Te Puia Springs Hospital has its own sewage treatment plant which would be costly to replicate in another location.
5. Existing building stock: While the buildings at Te Puia are dated, and in some respects not fit for purpose or as functional as they could be, they are in general clean and well maintained to comply with Local Council and Government standards. 90% of the roof has been replaced with colour steel. The site also has additional auxiliary buildings such as maintenance workshops, which would need to be duplicated in some form at any alternative site.
6. Geothermal Pools: Te Puia Springs has the potential for establishment of geothermal pools.
7. Cultural Significance: The Te Puia Springs site has important cultural and historical significance as a place of healing for many generations.
8. Central Location: The detailed 2003 service review, found that retaining the Te Puia Springs site maintains coverage and access (care closest to home), retains critical mass and acknowledges the importance of Te Puia as a hub.
9. Travel Distance: Consultation with a wide range of GP's in the 2003 health services review, indicated that the extra distance from Gisborne (for a Ruatoria site - 30min extra drive) would be telling, and that it would be much harder to gain / maintain clinical support services and staffing.

⁷⁴ Review of health services on the East Coast - Public Report, Sapere Research Group, 2013
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Existing Facilities

The existing hospital building stock is extensive, with several auxiliary buildings, houses and additional buildings.

79. Main Hospital Buildings

Basic Condition Summary

The main hospital buildings are primarily of single storied weather board construction, with reasonably new colour steel roofing (90%). Overall the main buildings are in good condition and have been well painted and maintained.

Identified Key Facility Issues

1. Expensive to heat and maintain. The current facilities are expensive to heat and maintain, due to size, construction type and layout. While current maintenance costs are relatively low for a building of this age and size, it is noted that does not reflect significant future scheduled maintenance costs such as painting (which alone could cost \$150-200K).
2. Expansive and spread out - leading to inefficiencies. The current building design and layout are not congruent with efficient service delivery. For example, the distance between the pharmacy or kitchen, and the long-term care and short stay beds, cumulatively adds many hours of walking and transporting of supplies for all care staff. Thus, reducing the number of patients they can effectively and safely, care for.
3. Not up to modern standards – leading to lower patient numbers and reduced economies of scale. While clean and functional at a basic level the current facilities are not up to modern standards and, particularly in regard to aged or long term care, do not meet whanau expectations. Issues such as distance to bathrooms and no ensuites for people with specific conditions, add to these impressions. This leads to families choosing to send their elderly to other locations and reduces the economies of scale and financial viability of long term care.
4. Privacy / confidentiality compromised. Thin walls in some of the clinic areas mean that conversations can be heard from adjoining rooms.
5. Pipework and heating system issues. There are some known issues with the radiator pipe work, due to its age, which will need addressed or replaced in future.
6. Lack of flexibility. Current facilities lack flexibility that can be design into modern hospitals, to improve efficiency of care, patient experience and ability to cater for different situations.
7. Dark corridors with limited natural light. If renovated rather than rebuilt, there is a need for additional internal windows and glass doors (frosted and double glazed where necessary for privacy) in order to improve natural light.

80. Existing Site Main Buildings Layout



Hospital Care Wing
Tawhiti Clinic
Management and admin offices
Main entry
Research Wing
Mental Health Offices Wing
Existing Meeting Room
Old accommodation (unusable / to be removed)

Kitchen / Cafeteria
X-ray
Supplies Store
Ambulance bay
Maternity wing
Physio room / small gym
Workshop downstairs, underutilised storage space above
Small Geothermal Pool
Old mortuary (to be removed)
Additional Workshop storage

Figure 34

81. Existing Building Exterior Example Photos

Left Below: Main Entrance

Right Below: Maternity wing and ambulance entrance



Figure 35

Left Below: Cafeteria and Kitchen area

Right Below: Tawhiti Clinic with LPG system and parking below.



Figure 36

82. Existing X-ray facilities

Below: Existing X-ray facilities



83. Unused historic laundry above workshop

The Te Puia Springs Hospital site features a large (now unused) laundry facility, which has the hospital maintenance workshop in a basement area below (still in use). The top / ground level of the building is in reasonable condition and features a truck loading dock, plus a high ceiling storage space with ample natural light. It is envisaged that this area could in the future function as a pack house for Primary Sector Partners or be used for an alternative enterprise focussed use such as a carving workshop.



Figure 37

84. Existing Care Ward

Below: Care ward. Functional but not conducive to efficient service delivery due to current layout and limited flexibility of spaces.



Figure 38

85. Existing LTC Communal Space and Bathrooms

Below: Long Term Care Communal Space and Bathrooms. These are not up to the standard of modern facilities or comparative facilities in Gisborne. No direct outdoor access due to floor to ground height differential.



Figure 39

86. Existing Specialists / Tawhiti Clinic Area

Below: Visiting specialist and Tawhiti Clinic areas of the existing facilities. Reasonable condition, but in need of renovation to increase natural light and sound proofing.



Figure 40

87. Existing Pharmacy Storage / Laundry Storage / Cafeteria

Below: Service support spaces. Cafeteria a long way from staff and patient areas and down a narrow corridor.



Figure 41

88. Maternity Ward

Below: Maternity ward (currently 3 beds and includes bath tubs but no water birth pool)



Figure 42

89. Corridor Examples

Below (top to bottom): Entrance area corridors, mental health wing corridors, research wing corridors. While very clean and tidy, most corridors in the existing building are dark and lacking natural light.



Figure 43

Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

90. Existing Meeting and Research Space

Below (top and bottom left): Existing Meeting Space

Below (bottom right): Research space – renovation in progress in association with Maurice Wilkin Centre



Key Issues and Challenges Summary

91. Key Challenges Summary Table

Key Challenges	Summary
1. Old Buildings	<p>Old Buildings which are expensive to maintain and inefficient to heat.</p> <p>The existing hospital building is almost entirely painted weatherboard cladding. The hospital is around 3,000m² in total (excluding axillary buildings) and runs an LPG boiler to heat the facilities.</p> <p>Light, power and heating currently account for \$177K of total operational expenses per annum⁷⁵ of this \$66,000 is attributed to LPG heating. Approximately \$35K per annum is currently invested in building maintenance, excluding staff costs.</p>
2. Community deprivation and limited employment opportunities	<p>The East Cape is one of the most socially and economically deprived regions of NZ, with high community health needs. 91% of Ngāti Porou rohe population lives in very deprived areas, compared to 52% of Tairāwhiti DHB, and 20% of NZ. Research indicates that a large proportion of health outcomes can be traced to social determinants, such as income.</p> <p>There are both, limited employment opportunities and challenges retaining skilled staff. Within the tourism segment there is a lack of commissionable product offerings and attractions on the East Cape.</p>
3. Isolation	<p>Ngati Porou Hauora serve multiple isolated rural communities. There is a single arterial main road link to Gisborne. This road is prone to washout after major rain events. Transporting patients via helicopter is costly and this service is not guaranteed, due to potential availability or demand issues and weather conditions.</p>
4. High Injury Mortality Rate	<p>Ngāti Porou rohe's injury mortality rates are nearly 2 times higher (90% higher) than the national rate with higher rates for males.</p> <p>The high prevalence of forestry on the East Cape is a likely explanation for this disparity, with a proportionally high level of workplace and road injury risk⁷⁶.</p>
5. Limited Water Supply and Infrastructure	<p>The East Coast has very limited water reticulation infrastructure. Te Puia Springs is one of the few townships with reticulated water to most of the community, supplied via the hospital's pumping and filtration system. However, the pipe network in the township has never been maintained by council, it often leaks and requires repair by hospital staff to prevent water loss. A historic Ministry of Health project to upgrade the in-ground pipe infrastructure never eventuated.</p> <p>While the current water system is very good from a pumping and filtration perspective, there is need for an additional storage tank, in order to maintain supply during flood events without damaging filtration systems.</p>
6. Land Movement	<p>Te Puia Springs township is located on a large slow moving land form, due to subsurface geothermal activity. While the majority of the existing building footprint / site is considered stable and suitable for building, the potential for future movement needs to be taken into account within the facility design.</p>

⁷⁵ Ngati Porou Hauora Charitable Trust 2017 Annual Accounts

⁷⁶ http://archive.stats.govt.nz/browse_for_stats/health/injuries/InjuryStatistics_MR16.aspx

Core Hospital Requirements Summary

The following table summarises the core service requirements of NPH in regard to hospital facilities which align with their future service delivery plan.

Requirements	Requirements / Notes
Reception	Open welcoming reception with waiting area, lounge space, kids space and sufficient area for pōwhiri and formal welcomes.
24hr A&E Services	1 Bed
Additional Medical Beds	7 Beds. Short Stay Admissions, rehabilitation, post-operative and palliative care.
Maternity	3 Beds
Flexible Elderly Care	8 Beds
Flexible Respite Care	2 Beds
Office Space	13 permanent office spaces, 3 flexible / hot desk spaces, including admin, management, community and mental health teams.
Mental Health Team	Resources and storage space.
Procedures / Minor Surgery Room	Fracture clinic space and storage. Space for minor surgeries.
Telemedicine	Quiet space with appropriate technology, close enough to other staff to gain support when needed.
Tawhiti Primary Care Clinic	Sufficient space for consultations and waiting patients.
Pharmacy	Secure storage of medical supplies and deliveries. Close to care areas where application may be required.
Medical, Screening and Dental Bus Parking	Visible Bus Parking Space
Diagnostics	Radiology room and associated services, sufficient space for required equipment and storage.
Kitchen	Improved commercial standard kitchen space closer to patients. Potentially also servicing a café.
Maintenance	Retention of existing spaces facilities or equivalent.
Whanau Accommodation	Consideration of partnership arrangement with Te Puia Springs Hotel or on site option.
Mortuary	Identified community need, however potential cost burden if expenses associated with burial or processing not met by whanau.
Transport	Covered ambulance entry with access to A&E. Helipad with access to A&E. Staff parking.
Bathrooms	Accessible bathrooms with baby changing facilities. Staff bathrooms and shower facilities.
Research	Retention of Maurice Wilkins Research Centre and expansion to include a centre of excellence for Rural and Māori Health.

Figure 44

In addition, the NPH Board wish their facilities to be:

- Effective layout, to enable service efficiencies and improvements.
- Flexible, loose fit and future proofed.
- Long-life, with low maintenance and heating costs.
- Eco-friendly, green / sustainable buildings.
- Culturally grounded, incorporating important elements of the hospital's history, origins and reflecting Ngāti Poroutanga, cultural values and Tikanga (practices or protocol).
- A catalyst for change, supporting community initiatives, connectedness, innovation and enterprise. To help realise their vision of significantly better regionwide health and community outcomes, within one generation.

Anticipated Future Hospital Service Provision

The following future service provision summary has been drawn from a working paper developed by NPH after a period of intensive community consultation.

Core Service Components	Summary
24 Hour A&E Services ED, stabilisation unit; observation beds.	<p>Te Puia is a rural hospital with 24-hour service and doctor availability. It is the view of NPH Board and wider community that this needs to continue.</p> <ul style="list-style-type: none"> • The ED facility and stabilisation room is used relatively frequently, and often at night or in the weekends. • Accidents and acute illness patients often arrive in the weekends and evening/nights when symptoms worsen. Car accidents/alcohol-related injury is also more likely at night or in the weekends. • There is a steady flow (volume varies, increasing with the population influx in summer) of more straightforward ED type presentations: fractures/suspected fractures; sports injuries; work-related injuries; lacerations; acute abdominal pain; exacerbations of asthma; acute chest pain; febrile children.
Short Stay Admissions Post-operative recovery and step down beds	<p><i>Management and observation of illness / injury, where distance or circumstances preclude daily review, for example:</i></p> <ul style="list-style-type: none"> • Cellulitis treatment • Asthma exacerbations • Pneumonias • Wound infections <p><i>Management of long term conditions/chronic care, with input from specialists. For example, people with:</i></p> <ul style="list-style-type: none"> • Diabetes mellitus • Renal impairment • Hypertension • Gout • Heart failure • Several other conditions could be incorporated in this list and co-morbidity (or presentation of multiple conditions) is common. <p><i>Post-operative Recovery and Rehabilitation</i></p> <ul style="list-style-type: none"> • Short stay post-operative admissions free up secondary care beds and enables care closer to home and whanau. • In a rural context, post-operative recovery and rehabilitation care is important as many homes do not have easy access from the road, access to bathrooms and other facilities can often be challenging especially for elderly patients in older homes. A period of recovery and rehabilitation post operatively is often needed. <p><i>Short stays for 'ambulatory' procedures, for example:</i></p> <ul style="list-style-type: none"> • Transfusions • Chemotherapy • Visiting proceduralists - could also be managed more frequently at Te Puia, saving patient travel to Gisborne. For many patients, it is not feasible to get back home the same day, and the ability to have treatment locally and be discharged the following day makes sense. A growing number of procedures previously managed in central hospitals can be managed by specialists supporting clinical staff in rural settings or where the proceduralist is mobile, rather than the patients.

Rehabilitation and ‘slow stream’ post-operative care	<p><i>With additional staff training, and appropriate visiting or resident allied health staff, much more rehabilitation and post-operative recovery care could be undertaken from Te Puia Springs Hospital, for example:</i></p> <ul style="list-style-type: none"> • Cardiac rehabilitation • Post stroke rehabilitation • Post injury rehabilitation <p>Because of the distances and quality/facilities of many homes, home-based care needs to be planned and managed more carefully than in urban areas. Even getting the right equipment for home-based care can take days. There is scope for Te Puia to have staff skilled in rehabilitation, and in transitioning people to their home environments safely for the best outcomes.</p>
Flexible Elderly and Respite Care Facilities	<p><i>Respite Care - There is community interest from local whānau in having their kuia and koroua cared for at home, with respite care available at Te Puia, rest home care options and hospital level care near whānau and familiar communities. Appropriate facilities are needed, including:</i></p> <ul style="list-style-type: none"> • Rooms with en-suite facilities • Ability for resident elderly to be active participants in the local community • Suitable recreational space, and opportunities for integration through local, tailored community-based activities. <p><i>Supported Living - There is potential for supported living units to be provided on site, so that the spectrum of care (except dementia care) can be provided for those no longer able to live at home.</i></p> <ul style="list-style-type: none"> • The rebuild would need to be designed with flexibility in mind • Respite care for families caring for whānau members with significant disability could also be managed using some of these rooms.
Palliative Care	<p><i>Te Puia provides excellent palliative care, and there is an opportunity to enhance this via:</i></p> <ul style="list-style-type: none"> • A redeveloped facility that has sufficient flexibility and suitable space for palliative care, including quieter rooms where 24 hour whānau involvement can be readily accommodated.
Culturally Aware Maternity and Post-natal Care	<p>Te Puia offer midwifery-led services. The communities value this service, and the importance of good whanau, practical and professional support throughout pregnancy, birth and in the early postnatal period is well recognised^{77,78}.</p> <p>It is well documented that Māori women are less likely to attend antenatal education, less likely to experience satisfactory maternity care and outcomes, and that they value quality, culturally safe and whanau-respectful practice and environments for their maternity care^{79,80}. Research with consumers of the Midland rural maternity services observes: “Māori women want to be able to enjoy their pregnancy and birth in a respectful and culturally appropriate way and to be able to have the support of their whānau throughout”⁸¹.</p>

⁷⁷ Glover M, Manaen-Biddle H, Waldon J. Influences that affect Maori breastfeeding.

⁷⁸ Moewaka Barnes H, Moewaka Barnes A, Baxter J et al. Hapū Ora: Wellbeing in the Early Stages of Life. Auckland: Massey University. 2013

⁷⁹ Moewaka Barnes H, Moewaka Barnes A, Baxter J et al. Hapū Ora: Wellbeing in the Early Stages of Life. Auckland: Massey University. 2013

⁷⁹ Abel, S., Finau, S., Tipene-Leach, D., Lennan, M., & Park, J. (2003). Infant care practices amongst Maori, Pacificans, and Pakeha: Implications for maternity and well child services in New Zealand. (IPHR and SPHPC Working Paper No 5). Suva: Institute of Pacific Health Research, Fiji School of Medicine.

⁸⁰ Ratima M, Crengle S. Antenatal, labour and delivery care for Māori. Experiences, location within a lifecourse approach and knowledge gaps. J Aboriginal & Indigenous Community Health. 10(3) 353-365 2013.

⁸¹ Lancaster G, Gosman K, Lawrenson R, & Gibbons V. (New Zealand Institute of Rural Health). Midland Region Rural Maternity Services Consumer Engagement Study. New Zealand Institute of Rural Health. Cambridge, New Zealand. 2014.

<p><i>Culturally Aware Maternity and Post-natal Care</i> (continued...)</p>	<p><i>Ensuring locally accessible, culturally and clinically safe services, with adequate staff and appropriate facilities, is therefore an important consideration in planning for the Te Puia Springs Redevelopment. Opportunities include:</i></p> <ul style="list-style-type: none"> • Build modern birthing rooms, with a degree of separation from other clinical areas and a facility designed to accommodate this special function. • Having a flexible model for antenatal, delivery and post-natal care, that meets the needs of women wanting to have their babies on the East Coast (where it is clinically safe to plan this).
<p>Mental Health, Alcohol and Drug Services</p>	<p>While the majority of mental health and AoD (Alcohol and Other Drug assessment and treatment) services are provided through community-based outreach and clinics, there is value in having the mental health/AoD team co-located at Te Puia to enhance collegial support and the medical backup.</p> <ul style="list-style-type: none"> • A voucher for a service based in Gisborne, or intermittent visits from external agencies do not work for most East Coast whānau. • Timely, confidential and flexible responses by suitably trained staff who understand the environment and can develop trust are required to gain the rapport necessary for an effective therapeutic relationship. • Rural mental health teams can offer an extensive range of interventions, particularly with relevant supports such as telehealth and visiting specialists. • For some, the anonymity and confidentiality of a Gisborne-based service is an advantage, and where this is preferred and the resources to access it are available, this choice should also be available. <p><i>Potential Service Extensions:</i></p> <ul style="list-style-type: none"> • Supervised detoxification and sub-acute care could be provided at Te Puia if the facility had flexible, appropriate space and staff were confident and skilled in these areas. • A wider range of mental health services on the East Coast, particularly for rangatahi, to ensure earlier recognition and support where there is depression, anxiety, adjustment disorders, unresolved grief, serious family stress and family violence are factors. Including, locally-based primary mental health services, (e.g. in-reach into schools, self-referral options, positive youth development and prevention work) and innovative, whānau-centred approaches to intergenerational AoD and mental health problems.
<p>Procedures / Minor Surgery</p>	<p><i>More and more procedures are being performed away from large hospitals. In Australia, minor surgery by rural generalists (GPs with special interest and nurse specialists) are becoming more common.</i></p> <ul style="list-style-type: none"> • A dedicated space for procedures and minor surgery is needed. • Plaster room and regular fracture clinic with visiting orthopaedic support. • Visiting specialists/surgical bus can provide procedures such as vasectomies, IUD insertion, colonoscopies, minor surgical procedures.
<p>Telemedicine</p>	<p><i>Private telemedicine consultation space:</i></p> <p>Although telemedicine equipment is becoming more portable, privacy and suitable space are required to be able to use this technology to full advantage - not just acutely but for a variety of local consultations (hospital to clinic or home), specialist follow-up consultations and case discussions.</p>

Primary Care Clinic Space	<p><i>Tawhiti Clinic</i></p> <ul style="list-style-type: none"> • Consideration is needed to ensure that there is appropriate space for the primary care clinical functions that Tawhiti Clinic now provides. • The design needs to delineate the primary care function while optimising the work flow and efficient utilisation of Te Puia-based doctors, nurses and other staff.
Pharmacy	<p><i>Pharmacy, drug storage and other future functions need to be considered when designing this area.</i></p> <ul style="list-style-type: none"> • A suitable area for the safe storage of medicines, and located to make sense in terms of the work flow. • A wider range of medications, including chemotherapeutic agents, is being delivered remotely.
Dental Services	<p>At present Te Puia Springs is the base from which the mobile dental services are organised, and where there is secure space for the vehicle. The mobile surgical bus may also offer additional dental procedures.</p> <ul style="list-style-type: none"> • There is value in discussing whether future dental services include facilities at Te Puia, or whether an upgraded facility at Ruatoria Clinic is preferable.
Diagnostics	<p><i>Increased radiology services, ultrasonography with support from TDH.</i></p> <ul style="list-style-type: none"> • Xray facilities, ultrasound and other equipment (eg. slit lamp, point of care testing) are needed to support service provision.
Support Services	<p><i>Reception, administration, offices:</i></p> <ul style="list-style-type: none"> • The reception and entrance need to be welcoming and reflect Ngāti Porou cultural components. • Suitable space for administrative staff, on-site managers, offices and support staff. <p><i>Kitchen</i></p> <ul style="list-style-type: none"> • Food preparation spaces appropriate for the volume of patients. • Potential for expansion to incorporate an onsite café / dining space. • Consideration of role in respect to potential civil defence emergency catering. <p><i>Maintenance</i></p> <ul style="list-style-type: none"> • Retention or provision of suitable space for equipment and maintenance functions. Back-up generators, fuel supplies, tools and materials.
Whānau Accommodation	<p>Te Puia has always been a 'whānau hospital' and has not gone down the path of a 'whānau room' in the hospital. This reflects the culture of the current health service, and is a strength.</p> <ul style="list-style-type: none"> • The small cottage across from the hospital has provided extra accommodation at times. • Consideration of whānau accommodation is needed, whether this is a dedicated space or a referral discounted arrangement with the Te Puia Springs Hotel.
Mortuary	<p><i>Mortuary</i></p> <ul style="list-style-type: none"> • Consideration of a mortuary space and suitable facilities for whānau, police, funeral directors. • The nearest funeral director is based in Gisborne. • In the past families of deceased are reported to have left bodies at local Marae.

Figure 45 - Anticipated Future Service Provision (Summarised from Working Paper for Te Puia Springs Hospital Redevelopment Oct 2014)

Basic Hospital Health Services Facility Options Summary

92. Option 1: A Minimalist New Build Approach

Summary [Not supported by the NPH Board or wider community]

In 2003 a review of health services on the East Coast⁸² suggested full replacement of the existing facility with a smaller purpose built hospital with only minimal bed provision, no maternity care and no long-term elderly care beds. This option is not supported by the NPH Board or the wider community.

Costs / Additional Considerations

Basic estimations of cost were undertaken utilising a square metre construction cost of \$2,500 per metre squared and an additional \$1,500 per metre squared for fit out. Using these figures and a facility size of 571m² plus outdoor areas of 160m² (including helipad and ambulance bay) a construction cost of around \$2.5M was proposed. This cost however excludes, site prep, demolition, professional fees and contingency sums, which when included bring the total realistic cost of the project to around \$5.8M.

Full rebuild of existing facilities to accommodate all existing services would likely cost around \$10M-\$13M based on a similar scale project in Kaikora, completed in 2016. This would be considered a significant financial stretch and would be challenging without significant funding commitment from Government or Health Board sources.

93. Option 2: Renovation of Existing Facilities

Summary

Renovation of existing facilities to a modern standard, to accommodate current services and NPH Boards proposed future service provision plan.

Costs / Additional Considerations

Renovation of existing facilities is possible, however due to the nature of renovation projects, the need for careful demolition, wall straightening, floor levelling, additional design cost and unforeseen construction challenges, the resulting total construction costs can often be similar to those of a new build project, while still having high maintenance cladding. Preliminary estimate is \$5-15M depending on scope.

Additional considerations include service interruption and an extended period of construction noise. While potentially possible, it is harder to adjust, relocate or scale (up or down - if needed in future) service provision and spaces within the existing building, than it would be if purpose built transportable modules were incorporated.

94. Option 3: New Build Central Hub + Renovation + Transportables

[Recommended Option]

Summary

New build, of a small central building hub to accommodate reception and core hospital emergency services, with some of space shared with Tawhiti Clinic and potentially a relocated GDC Service Centre. Renovation of some spaces within the existing building and utilisation of high quality transportable buildings to accommodate additional services.

Costs / Additional Considerations

This option gives the greatest flexibility for future service provision, ability to scale up or down with limited financial implication and a total estimated construction cost of \$5.8M (for hospital only inclusions). This cost is comparative to option 1, but incorporates a much wider spectrum of services and aligns with both the NPH Board and community vision.

⁸² Review of health services on the East Coast - Public Report, Sapere Research Group, 2013
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Hospital Redevelopment Options Summary

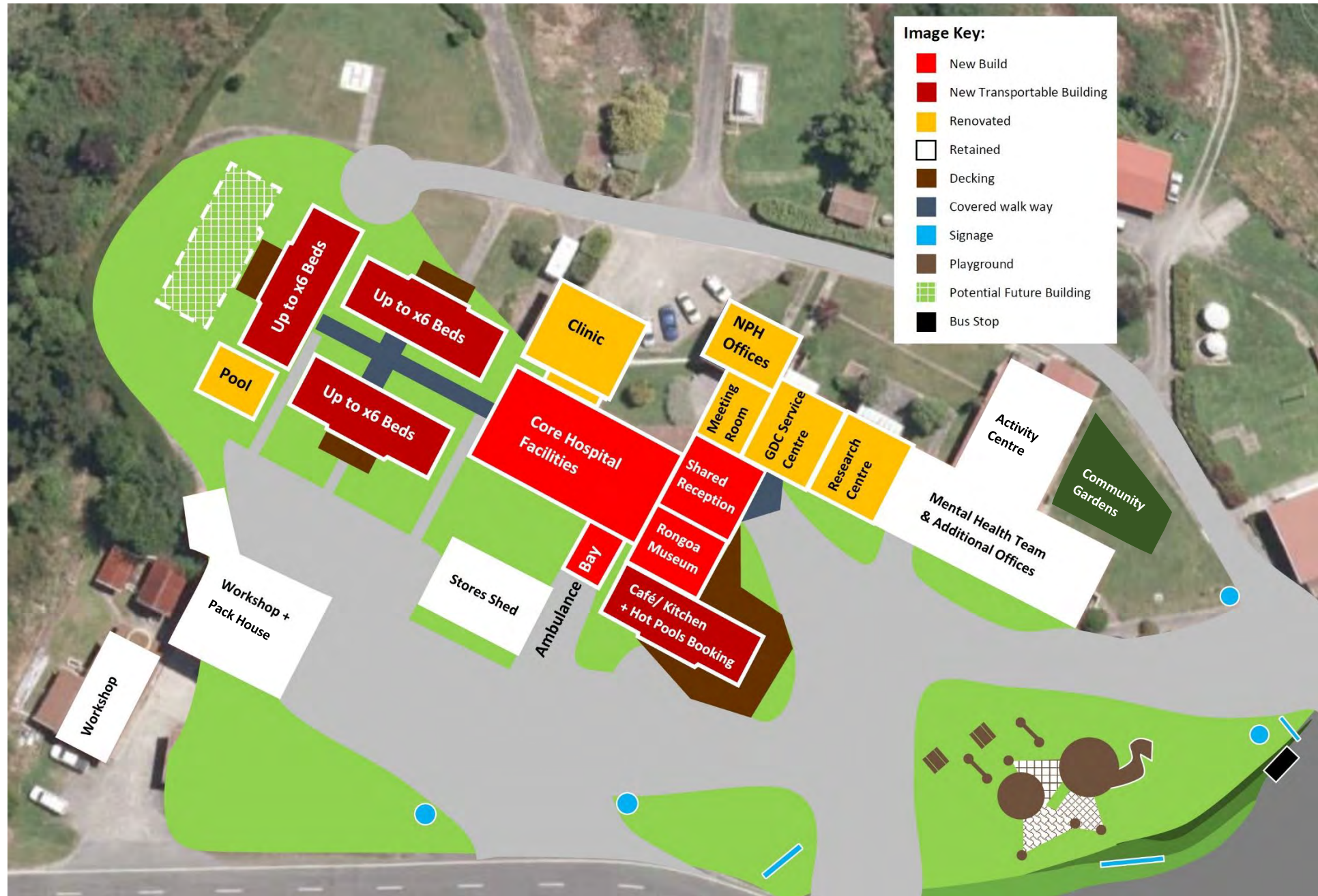
Main Options	Explanation and Implications	Preliminary Cost Estimates
<p>Option 1</p> <p>Full Replacement with a purpose-built facility</p>	<p>Full Replacement of existing facilities with a purpose-built building to deliver existing services or equivalent services to a similar level.</p> <p>This option is not considered realistically achievable without significant funding support.</p>	\$10M-\$15M
<p>Option 2</p> <p>Replacement with a purpose-built building to deliver only core / minimal hospital services</p>	<p>This option is in line with solution proposed by East Coast Health Services review. However, realistic costs are around \$5.8M rather than the \$2.5M proposed when including professional fees, demolition, contingency (20%) and site preparation.</p> <p>This option does not align with the NPH Board vision or community consultation.</p>	\$5.8M
<p>Option 3</p> <p>Mixed construction approach. Using new build, renovation and high quality transportable buildings.</p> <p>RECOMMENDED OPTION</p>	<p>Replacement of core hospital services with a purpose-built new build component, renovation of existing office spaces, removal of one wing of the existing building and replacement with x3 new high quality prefabricated transportable buildings.</p> <p>Aligns with NPH Board vision and community consultation, reduces investment risk and increase scalability, maintains current services while increasing efficiency. Gives scope for additional collaboration with other regional stakeholders for mutual benefit.</p>	\$5.9M (Hospital components only. Includes allowance for heating system, but excludes geothermal pool and geothermal resource access costs).
<p>Option 4</p> <p>Renovation of existing facilities</p>	<p>Extensive renovation of existing facilities to bring them up to a modern standard, improve heat retention and functionality.</p> <p>Similar cost to new build, greater service disruption during construction. High exterior maintenance costs remain and restricted ability to scale services.</p>	\$5M-\$15M (depending on extent of renovation and proportion of the building improved. \$5M would be equivalent to renovation and fit out of less than half the current facility).

Figure 46

Table Notes:

- Figures are exclusive of GST and are considered best estimates based on available information
 - More detailed Quantity Surveyor costings will be possible once concept design and redevelopment approach are confirmed.
 - A 20% contingency margin has been included to account for uncertainties.
- Figures exclude other project costs and potential inclusions.

Proposed Hospital / Community Facilities Redevelopment Approach



95. Proposed Transportable Building Style and Advantages

Figure 47

Cost Effective, High Quality Relocatable Buildings Transportable Prefabricated Buildings

- Significantly reduced construction time and service disruption.
- Piled, so can be adjusted to account for land movements.
- Relocatable if needed (reduced investment risk).
- Scalable, modular expansion with additional units as necessary.
- High quality construction at lower construction cost.
- Fully insulated.
- Transported to site fully fitted out and ready for use once services are connected. No travel premiums for builders.

Image sourced from: www.leisurecom.co.nz



Figure 48

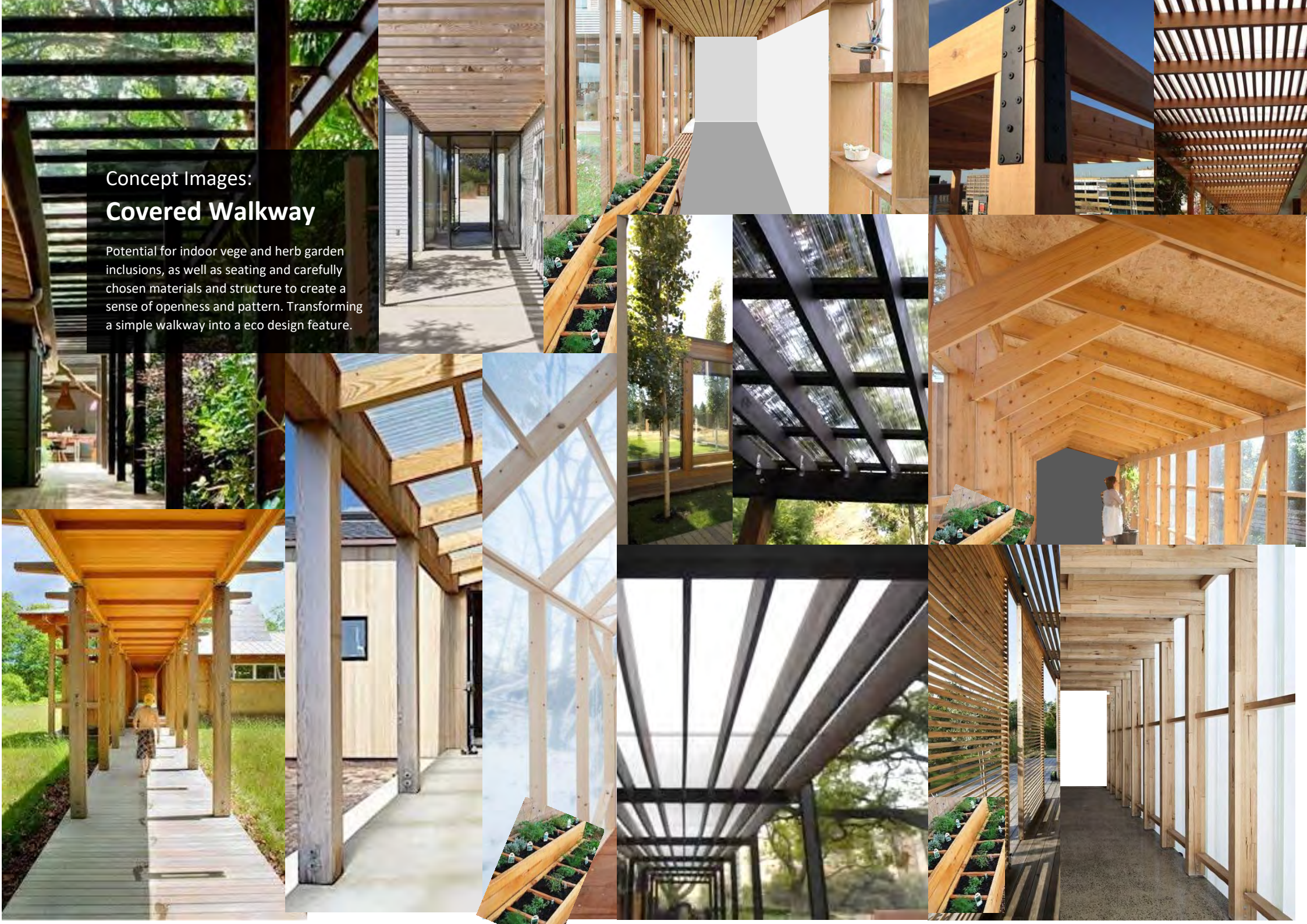
LONG TERM / RESPITE CARE UNITS CONCEPT

Rough conceptual layout for Long Term Care Unit and respite care beds. A similar layout could be adjusted for a maternity and rehab building (including en-suite unit with birthing pool).



Concept Images: **Covered Walkway**

Potential for indoor vege and herb garden inclusions, as well as seating and carefully chosen materials and structure to create a sense of openness and pattern. Transforming a simple walkway into a eco design feature.





ADDITIONAL ELEMENTS | Collaboration/Partnership

Nau te rourou, naku te rourou, ka ora te manuhiri

With your food basket and my food basket, the visitors will be fed.



Centre of Excellence for Māori & Rural Health Research + Aotearoa Rongoa Museum & Reference Library

96. Centre of Excellence for Māori & Rural Health for Research & Teaching

Background

NPH have significant research relationships with a number of New Zealand's universities and top research entities, spanning almost two decades.

In order to manage the endless requests the PHO had for research participation, NPH are believed to have been one of the first PHO's in NZ to create a formal research coordinator role within their organisation. They are also believed to be the first Māori Health provider to take a proactive rather than reactive approach to medical research and some of the systemic health issues facing their people.

Existing research relationships:

- University of Otago, Dunedin
- University of Otago, Wellington
- University of Waikato
- University of Auckland
- Maurice Wilkins Centre (currently establishing a base within Te Puia Springs Hospital)

Demand

At present NPH field around 12-18 requests per year for participation in research projects. Some of these are one off projects or population comparisons, while others are multi-year projects spanning 5-10 years and incorporating multiple conditions and variables.

Centre of Excellence

Desktop research indicates that there are other hospitals and health boards in NZ who claim the status of "Rural Health Centre of Excellence". While there are already some other contributors in the rural health sector, it is our assessment that Te Puia Springs and NPH has strong potential to become recognised as a national (and potentially world leader) in regard to Māori and indigenusness health. This is in part due to strong existing relationships and research partnerships with New Zealand's leading medical training and research Universities, as well as specialist research institutes such as the Maurice Wilkins Centre (who have recently established a base within the existing Te Puia Springs Hospital facilities).

Kaitiaki DNA Agreement

For Māori DNA is intrinsically tied to their Whakapapa and of great cultural importance. As some of the research undertaken has involved DNA sampling and digitisation of DNA data, the University of Otago in association with NPH have put in place agreements which regulate the storage, protection, consent and use of personal data held. These agreements and ethical boundary discussions form an important part of NPH research involvement.

Required Research Facilities

As most research is undertaken in the field, facility requirements for the centre of excellence are limited to servers, computers, office and meeting space. The resourcing critical for success is more heavily

related to staffing, than facilities. At present NPH employ one part-time research manager who work x3 days per week. In reality, given the scope of work required this needs to be a full-time role.

- A research office and meeting space in Te Puia Springs.
- A research office or hot desk in Gisborne.
- A secure / independent server to hold copies of research literature and digitised DNA data on site at Te Puia Springs.

Required Teaching Facilities

A number of facilities are required, in order to effectively host medical students, who want exposure to rural and Māori health. These largely relate to having a warm and appropriately resourced study space, meeting facilities with ability to video conference and appropriate accommodation.

- Study space
- Video conferencing / meeting room
- Suitable accommodation (while surplus land is available at Te Puia Springs, a mutually beneficial relationship with the Te Puia Springs Hotel would seem a more effective use of existing resources)

97. Aotearoa Rongoa Museum & Reference Library

Te Puia Springs has a long history of being a place of healing, both in the traditional sense and also in terms of modern medical research. Addition of a Rongoa museum and indigenous / Māori health and Rongoa reference library, would add significant value to the propose facilities redevelopment.

Rongoa Museum

There is currently no known Rongoa Museum in NZ. Holistic health and traditional medicine are becoming more mainstream and of interest to the general population as well as travellers.

While there are various artefacts and books held by museums throughout NZ. None of them (as far as is known) have displays committed to showing the Māori healing heritage or upholding the significant medical expertise that were present within Aotearoa prior to European arrival.

The closest examples to the proposed museum space, would be:

1. Te Hikoi Museum in Riverton (a small coastal town on the South Coast of the South Island with a population of just around 1,400 people). The museum has approximately 22,000 visitors per year is frequently noted as one of NZ's best museums based on visitor feedback.
2. A small museum dedicated to the life of Sister Mary Joseph / Suzanne Aubert, situated in the recently renovated, home of compassion, in Wellington. Suzanne Aubert was a Catholic nun who combined western medicine and traditional Māori Rongoa. She founded Jerusalem on the Whanganui River, plus two hospitals in Wellington and is believed to have been the first person known to grow cannabis in New Zealand⁸³.

Reference Library

A reader's comment on a newspaper article relating to a recent research project on the East Coast said, "...we have been researched to death (quite literally), but research doesn't change the facts...". This sentiment reflects a view point that the East Coast, with its high percentage of Māori residents has been the site of numerous research projects, with many of the participants never seeing the end outcomes of the research and body of knowledge they have contributed to.

Establishment of a reference library committed to holding physical and digital copies of all research projects undertaken within the region, as well as those related specifically to Māori or rural health and

⁸³ https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11972527

Rongoa, would be invaluable, in ensuring findings are not lost and creating a central reference hub for future literature reviews and research projects. It would also empower Ngati Porou to be Kaitiaki of a body of knowledge that they have actively and willingly contributed to over many years.

98. Museum and Reference Library Requirements

While it is acknowledged that collection of Rongoa artefacts may take time the follow points address this potential barrier.

- It is believed that publicity of the project would see a high level of local and general public support for the project and donation of family held artefacts.
- With appropriate storage / conservation facilities, it is foreseeable that major museums throughout NZ would collectively have artefacts in storage, that are currently not on display and which could be provided on a long-term loan basis.
- It is acknowledged that many Rongoa recipes are passed on orally and held as closely guarded secrets. This fact means that much of the knowledge needed is held by the people themselves. This fact could be honoured via video interviews and story snippets.
- Native plants form a significant part of Rongoa medicine. While much of this information is already available online, presenting it in an interactive format would add significant value to the proposed museum. For example:
 - Visitors pay a set fee to cover costs. They then follow a series of video instructions on a series of mounted tablets, at different stations along a recycled native timber work bench, to create their own basic Kawakawa and Manuka Honey healing balm or similar. The instructions would include, and help to educate people about, Tikangia Māori principals and be voiced by a local Rongoa expert.
 - Added value offerings could eventually be added including hot pools and professional Rongoa consultation.

A small museum and reference library of the nature proposed would require:

- Around 60-100m² of space
- Constant temperature of around 21°C
- Humidity of 55%
- Interactive displays including video content and plant samples

Operation:

- It is envisaged that research fees and museum entry donations / charges would cover staffing and operational costs.
- It is anticipated that reception would be staffed by café staff who would also manage hot pool ticket sales during the day.

Geothermal Energy Assessment

99. 2018 Dobbie Engineering Geothermal Energy & Applications Assessment

As part of the current feasibility project an updated assessment of the localised geothermal resource and potential applications was commissioned⁸⁴. This assessment was undertaken in April 2018, by Rotorua based geothermal specialists, Dobbie Engineering, with site based input from GNS Science.

Following is an abbreviated summary of key findings:

- A total of 8 major geothermal features with flowing springs were identified within the assessed area. The identified features had surface water temperatures of between 45°C and 77°C and flow rates ranging from 0.48 litres per second to 1.68 litres per second.
- A realistic evaluation of the resource indicates that up to 6.5 l/s of fluid could be collected with an average temperature of 64°C. To allow for contingencies, application evaluations have been based on a flow rate of 5 l/s.
- Recommendations include a large 250m³ buffer tank, being used to store and maximise the geothermal energy available when it is required.
- Potential Viable Applications:
 - Greenhouse heating to maintain minimum temperatures of 21°C on the coldest days.
 - Aquaculture to maintain water temperatures at 29°C on the coldest days.
 - Geothermal bathing experience at 37-40°C
 - Fresh water swimming pools (indoor and outdoor)
 - Space heating via underfloor heating or forced air systems

⁸⁴ Te Puia Springs, Ngati Porou Hauora, Geothermal Resource and End Use Applications, Dobbie Engineers, April 2018
Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

100. Potential Geothermal Resource End Uses Options Table⁸⁵

The following table shows the potential capacity of the available resource if applied exclusively to each potential end use application.

Option No.	End User	Operating condition	Area or Volume	Comments
1	Fish farming	29°C Water	500-600m ² x 2.4 deep	
2	Outdoor Pool	37°C Water	300m ² x 1-1.5m deep	More if covered at night
3	Outdoor Pool	28°C Water	450m ² x 1-1.5m deep	More if covered at night
4	Indoor Leisure Pool	37°C Water	750m ² x 1-1.5m deep	
5	Indoor Competition Pool	28°C Water	1200m ² x 1-1.5m deep	Olympic pool 750m ²
6	Space Heating	22°C Indoors	7,000m ²	New build under floor heating
7	Space Heating	22°C Indoors	3,000m ²	Older building, less insulation hot air heating via underfloor ducts
8	Glass House	21°C Indoors	3,400m ²	Hot air system
9	Bathing in Geothermal Water	37 - 39°C	75 - 110m ²	75m ² x 1.2m or 110m ² x 0.8m Complies to NZS 5826 geothermal bathing
Notes: <ul style="list-style-type: none"> • Total geothermal fluid available at 62°C - 45°C at 5 l/s • Secondary closed systems operate at 55°C - 40°C at a flow of 5.7 l/s • Glass house with fan coil units and ducted warm air distribution • Space heating in a new build via under floor heating in concrete slab • Space heating existing buildings via fan coil units and ducted warm air underfloor. • Average winter temperatures of 9°C • All options assume geothermal water is stored to a tank (up to 250m³) to maximise fluid available • Bathing in mineral water as per Option 9 can be achieved on its own or in conjunction with any items 1-8 				

Figure 49 – Source: Te Puia Springs, Ngati Porou Hauora, Geothermal Resource and End Use Applications, Dobbie Engineers, April 2018

101. Anticipated / Proposed Application

The table below outlines the anticipated / proposed application of the available geothermal resource.

Geothermal Heat Use	Volume / Area	% of available capacity	Annual maintenance cost contribution
X10 geothermal pools + upgraded hospital pool of similar size	16,320 ltr	18%	\$7,500
Space heating	1,420 m ²	20%	\$12,500
Green Houses	2,100 m ²	62%	\$35,000
		100%	\$55,000

Figure 50

⁸⁵ Te Puia Springs, Ngati Porou Hauora, Geothermal Resource and End Use Applications, Dobbie Engineers, April 2018
Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

102. Geothermal Resource Access Costs

The following estimates are drawn from the 2018 Dobbie Engineering Geothermal Resource and End Use Applications report⁸⁶.

Fluid capture and reticulation system costs

	Cost for Heat Source.	Cost	Rate	Notes
1	Capture fluid at 12 sources	\$60,000	\$5,000 each	Allows for a lined wooden structure with light weight roof cover
2	Piping from source to holding tank	\$180,000	\$170/m	Insulated polybutylene pipe with support system
3	Chamber, pump and power supply for Feature 1	\$10,000		
4	Main Storage tank (250m ³)	\$110,000	Tank \$75,000	Tasman tank quote. Foundation \$25,000 Insulation \$10,000
5	Primary pumping set (Pu01A &1B) including valving and power	\$35,000		Estimate only
6	Primary heat exchanger set HEX01A &01B	\$40,000		Estimate only, shell and tube but could be plate heat exchangers
7	Control system (minimum controls)	\$10,000		Main temperature control loop only
8	Secondary heating reticulation to end use (within 50m)	\$35,000	\$200/m for piping	Includes pump, power supply and makeup system
9	Consent application	\$10,000		Estimate
10	Engineering and project management	\$70,000		Estimate at 15% of capital exp.
	Sub total for heat source	\$560,000		Supply cost for heat source

Figure 51 – Costs are exclusive of GST

Geothermal Bathing Note: Geothermal bathing would not require items 4-8, however would require its own storage tank, as below, giving a total cost of \$460,000 if not used concurrently with other uses. The scale of the water catchment system needed would also be smaller. Reducing overall costs. If concurrently with other applications establishment costs would be \$690K.

Anticipated additional end use costs

Individual End Use System Costs	Cost	Rate	Notes
Space Heating, Option 1 new build under floor piped in concrete slab	\$36,000	\$80	Allows for 450m ² @ \$80/m ²
Space Heating, Option 2 new build under floor ducted warm air	\$68,640	\$120-150/m ²	Allows for 572m ² @ \$120/m ²
Space Heating, Option 3 older building under floor ducted warm air	\$47,400	\$120-150/m ²	Allows for 395m ² @ \$120/m ²
Geothermal Bathing concurrently with above end uses (includes storage tank)	\$130,000		Complying with NZS5826 for geothermal bathing. Allows for 250m ³ storage tank
Glass house heating system, warm air system via PVC ducting*	\$150,000*	\$80/m ²	Estimated based on x8 green housed 49m x 5m

Figure 52 – Estimates are exclusive of GST

* Note this cost has not currently be factored into overall project costs, as it is anticipated that this expense would covered as part of Hikurangi Enterprises business development costs.

⁸⁶ Te Puia Springs, Ngati Porou Hauora, Geothermal Resource and End Use Applications, Dobbie Engineers, April 2018
Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

103. Existing Pools / Geothermal Water Use

The following summary of current geothermal water use is an extract from the Geothermal Resource and End Use Applications report⁸⁷ prepared in 2018 by Dobbie Engineering.

3. CURRENT USE

Two facilities currently use the geothermal fluids at Te Puia Springs. Neither of these currently hold a consent for their use.

3.1 Te Puia Hospital- Te Whare Hauora O Ngati Porou

The hospital currently runs a small bathing pool approximately 2m x 4m x 1m deep. It is supplied with approximately 0.55 l/s of fluid from Feature 3 (see figure 1)

Feature 3 includes a number of smaller features and fluid is at present captured from 3. The total flow from Feature 3 is estimated at 2.0 litres/sec and the hospital is using about 25% of this flow or 0.5 l/s.

It should be noted that this flowrate (0.55 l/s) approximately corresponds to the minimum flow required by NZS 5826 to maintain pool water quality in a pool of this size (i.e 8m³).

3.2 Te Puia Springs Hotel

The Hotel currently operates a small bathing pool approximately 1.2m x 3.0m x 1.2m deep. It is supplied with up to 0.6 l/s from Feature 2. The total flow from Feature 2 is estimated at 1.3 l/s and the remaining flow is lost at the spring collection point, at a water fall feature located to the hotel boundary and at the pool overflow structure.

This flow (0.6 l/s) is approximately 200% of that required by NZS 5826 to maintain water quality in a pool of this size (4m³). A total flow of 0.3 l/s would satisfy the minimum code requirement and provide a similar level of benefit.



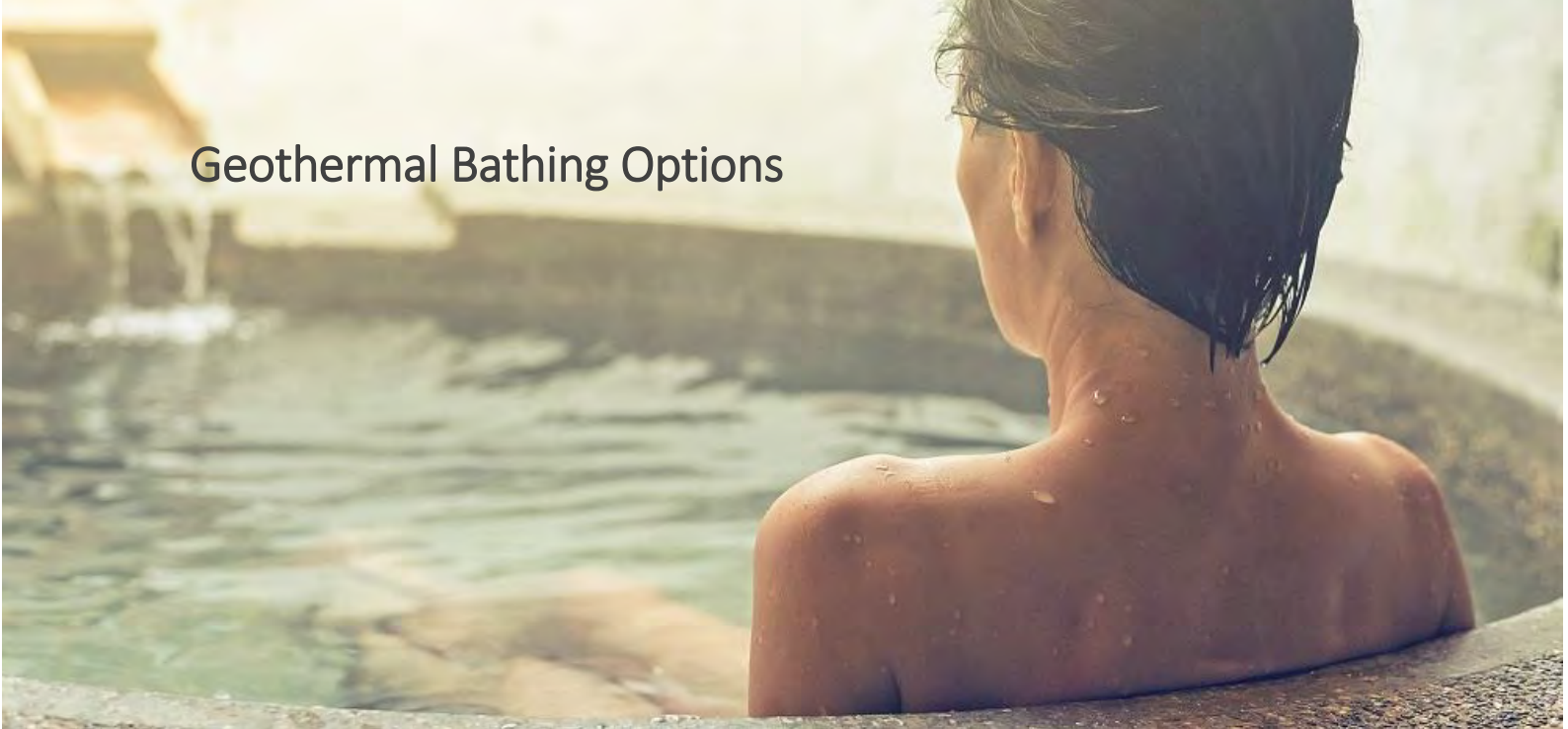
Figure 53 – Existing Hotel Pool



Figure 54 – Existing Hospital Pool

⁸⁷ Te Puia Springs, Ngati Porou Hauora, Geothermal Resource and End Use Applications, Dobbie Engineers, April 2018
Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

Geothermal Bathing Options



104. Geothermal Bathing Development Options Summary

As the potential for the establishment / extension of geothermal bathing options, is one of a number of factors making the Te Puia Springs site more attractive than other options (along with travel distance and existing infrastructure, among others), consideration of the main bathing related options available are important for the overall project.

The key options are as follows:

Options	Outline	Brief Notes
Option 1 <u>RECOMMENDED</u> Tourism focussed Geothermal Development, with small upgraded / replacement hydrotherapy pool at the hospital.	<ul style="list-style-type: none"> Proposed collaborative project between TRONPnui, Te Puia Springs Hotel, NPH and Te Whanau a Iritekura Whenua Topu Trust. Most appropriate site would be Te Puia Springs Hotel land, behind the hotel. Anticipated format being x10 stainless steel lined cedar tubs, with capacity of 5-6 people each, in a park like setting. Small replacement rehabilitation geothermal pool at the hospital site. Similar to existing, but covered and attractively landscaped, with the addition of a shallower seated area on one side of the pool. 	<ul style="list-style-type: none"> Encourages collaboration and is anticipated to maximise community economic benefit, as well as public engagement, Māori business visibility and sense of tangible change and progress. Hot tub approach allows for scalability, reduced investment risk and increases flexibility for group or private bookings at different rates. Site requires minimal planting or changes and is close enough to be collaboratively staffed by both NPH and the Te Puia Springs Hotel.
Option 2 Large purpose built (in-ground) hydrotherapy pool	<ul style="list-style-type: none"> Larger purpose built hydrotherapy pool development similar to those found in major swimming facilities or luxury spa retreats, but utilising geothermal water and high quality pool surroundings. 	<ul style="list-style-type: none"> This option is NOT recommended due to the potential for land movement and reduced flexibility of use.
Option 3 Specialist rehab & hydrotherapy facility	<ul style="list-style-type: none"> Specialist rehab & hydrotherapy facility, utilising a range of commercially available standalone pools and tubs, plus a small replacement geothermal pool similar to existing. 	<ul style="list-style-type: none"> While this option presents the biggest potential direct revenue stream for NPH, there is a risk of not being differentiated sufficiently from offerings available elsewhere, such as the proposed Olympic Pools redevelopment in Gisborne or specialist retreats in Rotorua.

Figure 55

Geothermal Pools Option 1 – Tourism Focus

OPTION 1	Explanation and Implications	Cost Estimates
Standalone Geothermal Hot Pool Tourism Development	<p>Potential to draw an estimated 9,000 visitors per year, with around half of these domestic visitors. Generating a projected annual profit of around \$90K once established. Operational costs of around \$150K per annum of which around 75% would be staffing. Would require around 6,000 visitors to breakeven. Potential to grow as tourism numbers increase using a modular approach.</p> <p>Includes:</p> <ul style="list-style-type: none"> • X10 six-person geothermal cedar and stainless steel tub style pools. • X10 small changing huts, lighting and showers. • Simple paths and basic landscaping. • Basic perimeter fence. • Small replacement / upgraded hydrotherapy pool at hospital. <p>Advantages:</p> <ul style="list-style-type: none"> - Development of 2.6 FTE jobs. - Potential partnership with Te Puia Springs Hotel, Te Whanau a Iritekura Whenua Topu Trust and TRONPnui. - Development cost potentially externally funded. - Attractive site with natural beauty and existing appeal. - Larger community economic benefit. - Scalable as pools are modular. Reduced financial risk as pools can be sold or relocated if operation proves to be unviable. - Reduced financial risk as led by other commercially focussed stakeholders. - Staffing could be shared between NPH and Te Puia Springs Hotel, enabling extension of some part-time roles, additional income and economies of scale. - Potential for added value and holistic health services in future. <p>Disadvantages:</p> <ul style="list-style-type: none"> - Requires collaboration. - Profits from operation likely to go to other entities, with main advantage to NPH being staffing efficiencies and annual contribution towards salaries. 	<p>Establishment cost of approximately \$525K.</p> <p>- Excludes geothermal resource access and reticulation setup.</p>

Figure 56

105. Preliminary Establishment Cost Projections

Preliminary estimate for tourism based geothermal hot pools operation establishment. Excludes land costs and assumes partnership with Te Puia Springs Hotel.

Setup Cost Estimates	Unit Costs	Estimated cost (10 pools)	Notes
Cedar Spa Tubs with Stainless Inner	\$9,000	\$90,000	Based on supplier estimate for x10, 5-6 person round tubs www.alpinetubs.co.nz
Changing Huts	\$12,500	\$125,000	PC Sum for small hut with, changing and basic showers
Decking		\$10,000	PC sum (Provisional Cost Sum)
Plumbing / electrical		\$30,000	PC sum
Landscaping		\$25,000	PC sum
Paths		\$30,000	PC sum based on 300m at \$100 per m
Fence		\$25,000	PC sum based on 250m at \$100 per m
New Covered Hospital Pool		\$60,000	PC Sum (2.5 x 4m)
Project Management		\$15,000	PC sum
Other professional expenses		\$30,000	PC sum
Consents		\$10,000	PC sum
Resource consent		\$50,000	PC sum
Sub-total		\$500,000	
	Contingency 5%	\$25,000	
Preliminary Estimate of Total Establishment Cost		\$525,000	

Figure 57

106. Preliminary Operational Projections

Basic capacity and operating cost / revenue projections. The figures below represent preliminary estimates only and are intended to give a general gauge of potential revenue.

Capacity Projections	Bathers at one time	Maximum bathers per day (1.5hr sessions + 30min transition time)
Assuming Private Pools x4	8	40
Assuming Shared Pools x6	36	180
	Max per day	220

Figure 58

Budgeted total visitor numbers	Budgeted visitors/week	% of maximum capacity	Per Year
Summer	350	21%	4,515
Rest of the year	100	6%	3,900
Preliminary Revenue Projections	Annual est. visitors	Spend per person	Revenue
Local concession card - Shared Pools	50	\$100	\$5,000
Domestic Visitors - Shared Pools *	4,000	\$20	\$80,000
International FIT - Shared Pools **	3,500	\$20	\$70,000
International FIT - Private Pools ***	1,750	\$50	\$87,500
	9,300	Total Revenue	\$242,500

Figure 59

* Estimates for international visitor numbers are based on 35,000 visitors to Cape Lighthouse and assumes 2/3 come down the coast and 20% of these stop at Te Puia Springs.

** Estimates for domestic tourism are based on 250 visitors per week over the 3 summer months and then an additional 1,000 spread over the rest of the year. The existing pool receives approx. 750 visitors @ \$1-2 each, over the 2-week Christmas period.

*** Local concession cards, assumes xx number of visits for \$100 or similar. Could be a higher rate for those who are not enrolled with NPH.

Operating Expenses Estimates	Cost Estimate	Notes
Uniforms etc.	\$1,000	PC Sum
Advertising	\$5,000	PC Sum
General Admin NPH	\$2,000	PC Sum
Reception Staffing NPH	\$48,180	11am - 5pm 365 days per year
Reception Staffing Te Puia Springs Hotel	\$40,150	5pm - 11pm 365 days per year
Cleaning / maintenance staffing NPH	\$24,090	Based on 3hrs per day
R&M allowance	\$15,000	PC Sum allowance per annum
Laundry	NA	(offset by towel hire fee)
Power / gas	\$8,000	PC Sum assuming \$0.83c per shower
Geothermal collection system maintenance contribution	\$7,500	Assumes cost shared with NPH and potential Hikurangi Enterprises Greenhouse operation
Total costs	\$150,920	Would require 6,000 visitors with an average spend of \$26 to breakeven.
Projected Profit (loss)	\$91,580	

Figure 60

107. Small Tub Hot Pools Price Comparison

Name	Notes	Pricing	Location
Treetops Spa	Luxury spa with Māori healing	POA	Rotorua
Hot Tubs Omarama	Outdoor spas with private areas and separate changing huts, Private cedar tub hot pools operation, lower price with more people. Massage and sauna options.	Average of \$50 per person	Omarama, Central South Island
Peninsula Hot Springs	Large indoor / outdoor. Hot Springs attraction.	\$25 off peak, \$40 peak, \$75 private pools, packages up to \$430	Victoria, Australia
Onsen Hot Pools	Luxury spa with massage	\$75 per person with packages of up to \$220 per person	Queenstown
QE Health, Rachels Pools	Health and clinical treatment provider, with French treatments available.	\$14 standard entry, Locals \$35 per month	Rotorua

Figure 61

108. Tourism Focussed Hot Pools Concept Images

- Fully fenced pool area, with camera monitored gate and key tag access. Keys returned after use. This approach would enable restricted access and staffing from café or hotel.



Figure 62 – Feasibility Concept Image - Impact Consulting

Geothermal Pools Options 2 – Rehabilitation Focus

This option, using standard pool construction, is NOT recommended, due to the potential for land movement and inability to relocate or adjust the pool.

OPTION 2	Explanation and Implications	Cost Estimates
In ground rehab & hydrotherapy pool. Similar to those found at major swimming facilities.	<p>Standard hydrotherapy / geothermal bathing facility with permanent in-ground pool structure. As per standard pool construction.</p> <p>Advantages:</p> <ul style="list-style-type: none"> - Potentially greater capacity for bathers. - Potential to create a natural pool type atmosphere. - Potential to have ramped access. <p>Disadvantages:</p> <ul style="list-style-type: none"> - Not scalable or flexible regarding private use or pool temperature. - Potential need for lifeguards. - Lower average entry fee as limited ability to offer private pool areas. - Limited differentiation from offerings at other geothermal locations and public pools. - Greater water use, surface area and heat loss. - Prone to ground movement damage and not movable, not recommended for this site. <p>THIS OPTION IS NOT RECOMMENDED</p>	<p>Establishment cost of approximately \$500K based on component cost of public swimming facilities.</p> <p><i>Excludes geothermal resource access and reticulation setup.</i></p>

Figure 63

Geothermal Pools Options 3 – Rehabilitation Focus

While this option is a possibility, with strong health linkages and additional potential revenue streams, it would require NPH to carry most of the risk for this component of the project.

OPTION 3	Explanation and Implications	Cost Estimates
Integrated specialist rehab & hydrotherapy facility utilising top end commercially available standalone pools.	<p>Health spa facility with less focus on geo-thermal and more holistic facilities for specialist water based rehab and relaxation.</p> <p>Includes:</p> <ul style="list-style-type: none"> • A top end saltwater massage spa. • Salt water flotation sensory pod. • High quality relocatable 5.8m x 2.3m hydrotherapy pool with pool lift, neck, shoulder and back massage features. Chair hoist into pool. • X3 six-person geothermal cedar tub style pools with stainless steel lining. • Small replacement / upgraded hospital geothermal pool. <p>Advantages:</p> <ul style="list-style-type: none"> - Development of 1.8 FTE jobs. - Relocatable reducing risk and scalable / expandable if needed. - Integrated with health services and supporting rehabilitation and recovery of patients. Opportunity for development of additional associated offerings. - Overheads reduced by having an integrated reception during the day. - Part of hospital facility and higher use by patients. Health tourism possibility. - Retains income under NPH umbrella and creates greater potential for medical rehabilitation referrals. <p>Disadvantages</p> <ul style="list-style-type: none"> - Potentially competing with specialist beauty spa facilities, so harder to gain a point of differentiation which would warrant travel from Gisborne. - Would require more significant landscaping than the Te Puia Hotel site. - High-use filtration requirements may add additional cost. - Reduces potential for collaboration and therefore less potential for regional level grant funding or funding contributions from other stakeholders. - Less appeal to domestic travellers, general public and locals. 	<p>Establishment cost of approximately \$525K.</p> <p><i>Assumes most pools are outdoors, with the flotation pod and replacement hospital pool are indoors / covered.</i></p> <p><i>Excludes geothermal resource access and reticulation setup.</i></p>

Figure 64

109. Preliminary Establishment Cost Estimate

Preliminary establishment cost estimates. Assumes pools located on NPH site and pools situated outdoors. Significant cost increase if located indoors unless using an existing building such as the historic laundry.

OPTION 3: Estimated High Quality Water Rehab and Health Facility Establishment Costs		
Salt water massaging spa/s	\$21,000	Jetsetter private spa with salt water treatment system & multiple massage settings, 3-person spa www.spashop.co.nz
Hydrotherapy pool	\$37,500	Aqualap spa pool supplier estimate www.vortexspas.co.nz (8-10 people max)
Pool hoist access chair	\$15,000	Supplier Estimate www.aquaclear.co.nz
Salt Water Flotation Pod	\$35,000	Supplier Estimate
Geothermal 6 person hot tubs x2	\$18,000	Supplier Estimate www.alpinetubs.co.nz
Plumbing / electrical	\$10,000	PS Sum allowance
Concrete Slab	\$9,000	PC sum allowance 40m2 at \$225/m2 to allow for additional reinforcing
Decking	\$25,000	PS Sum allowance 50m2 at \$500 m2
Shade sail / roofing	\$10,000	PS Sum allowance
Plumbing and electrical	\$50,000	Additional allowance over and above installation costs
Lighting	\$20,000	PS Sum allowance
Semi Frameless Glass Pool Fencing	\$25,000	PS Sum allowance
Decorative Wooden slat fencing x2 sides	\$9,000	PC sum allowance based on 30m with allowance of \$300/m
Flotation Pod Room	\$25,000	PS Sum allowance 10m2 at \$2500 / m2
Small changing facility plus outdoor shower	\$60,000	PC Sum allowance 20m2 at \$3000 / m2
New Covered Hospital Pool	\$60,000	PC Sum (2.5 x 4m)
Site prep	\$20,000	PS Sum allowance
Planting and landscaping	\$50,000	PS Sum allowance
Project Management	\$15,000	PS Sum allowance
Other expenses	\$30,000	PS Sum allowance
Consents	\$10,000	PS Sum allowance
Resource consent	\$50,000	PS Sum allowance
Sub-total	\$499,500	
Contingency 5%	\$25,000	
Estimated Total	\$524,500	TOTAL

Figure 65

110. Preliminary Usage Projection

As usage and potential demand are hard to gauge*. The following usage estimations have been used to give a preliminary picture of potential revenue and are estimates only.

Pool Type	Max. capacity	Rate	Test usage per day	Per week	Per week	Per annum
Hydrotherapy standard pool	x4 seated + x4 standing	\$20	4	28	\$560	\$29,120
Geothermal Pool	2 pools x10 seated max	\$20	6	42	\$840	\$43,680
Private Geothermal Pool	1 pool x6 seated max	\$50	4	28	\$1,400	\$72,800
Private Salt Spa	x3 Seated	\$50	2	14	\$700	\$36,400
Flotation Pod	x1	\$75	0.3	2.1	\$158	\$8,190
Totals	28pax		16	114	\$3,658	\$190,190
		Visitors per annum:		5,933		

Figure 66

* The existing hospital pool receives approx.750 visitors @\$1-2 each, over the 2-week Christmas period.

111. Operating Costs Preliminary Estimate

Operating Expenses	Cost Estimate	Notes
Uniforms	\$1,000	
Advertising	\$5,000	
General admin	\$2,000	
Reception Staffing	\$52,195	Evenings (3hrs) 5pm-8pm + 0.5 support for existing staff during the day (3.5hrs) 10-5pm
Cleaning / maintenance staffing	\$16,060	Based on 2hrs per day
R&M allowance	\$25,000	PC Sum
Laundry	NA	Offset by towel hire fee
Power / gas	\$25,000	PC Sum
Chemicals etc.	\$10,000	PC Sum
Total costs	\$136,255	Would require around 4,250 visitors with an average spend of \$32 to breakeven.
Profit (loss)	\$53,935	Estimated operational surplus.

Figure 67

112. Potential Rehabilitation Focussed Facility Inclusion Images



Figure 68

Community Gardens

113. Hospital Community Gardens

Establishment of hospital community gardens are proposed to help improve the health of local people while encouraging community engagement and physical activity. It is anticipated that the produce growing would be used within the hospital, reducing operating costs and improving food standard.

Activity Centre

114. Hospital Activity Centre

As a rural community hub, a hospital activity centre is seen as an important inclusion. The benefits of a multipurpose space being numerous and contributing to several health outcomes including social and mental health, as well as improving service offerings for long term care patients.



Geothermal Greenhouses

115. Geothermal Greenhouses

Geothermal greenhouses have been identified as a potential viable end use of the available geothermal energy. Geothermal Engineer flow measurements and estimations undertaken in 2018, indicated that flow rates in the local catchment area would provide sufficient capacity for heating and hot pools, with surplus energy sufficient for a greenhouse operation of up to 2,100m².

The main advantages of this proposed project inclusion are:

1. Reduced costs. Maintenance costs for geothermal water collection and reticulation system shared between a greater number of stakeholders.
2. Critical mass of expertise and knowledge, making developments like an organic vegetable garden or manuka plant nursery on hospital grounds more viable options.

HIKURANGI ENTERPRISES

- This geothermal capacity presents opportunity for collaboration with other entries such Hikurangi Enterprises (medical cannabis / hemp growers) based in Ruatoria. Preliminary discussions with management indicate openness to considering the options available and evaluation of the business case for development in more depth by their team.

RONGOA NURSERY

- Should Hikurangi Enterprises not be keen to proceed with the development of geothermal greenhouses, there is potential for NPH to establish a Rongoa plants nursery, with accelerated growth via constant temperatures. This development may also be an option as part of a Hikurangi Enterprises medical plant research and development arm.

Important Exclusion Notes:

1. At present the establishment of the proposed greenhouses has not been factored into the overall project costs, as it is assumed that these costs would be covered by Hikurangi Enterprises and part of their business development programme.
2. Costs included within the project are for the catchment, storage and piping of geothermal water for hot pools and heating applications. The costs allow for piping of geothermal water to the site of the proposed geothermal greenhouses, but not the cost of the structures themselves or piping of the hot water within the greenhouses.

Green House Costs

- Green houses are estimated to cost around \$200K. Based on \$23,500+GST each, for 46m long relocatable tunnels houses at x5m wide⁸⁸. Giving 230m² growing space. A total of around 8-9 greenhouses of this size could potentially be established on the old primary school site.
- A preliminary estimate of piping / hot air reticulation cost for greenhouse space heating is around \$80 per m² meaning an additional cost of around \$150K.

⁸⁸ www.flexitunnel.co.nz

Te Puia Springs Township Revitalisation

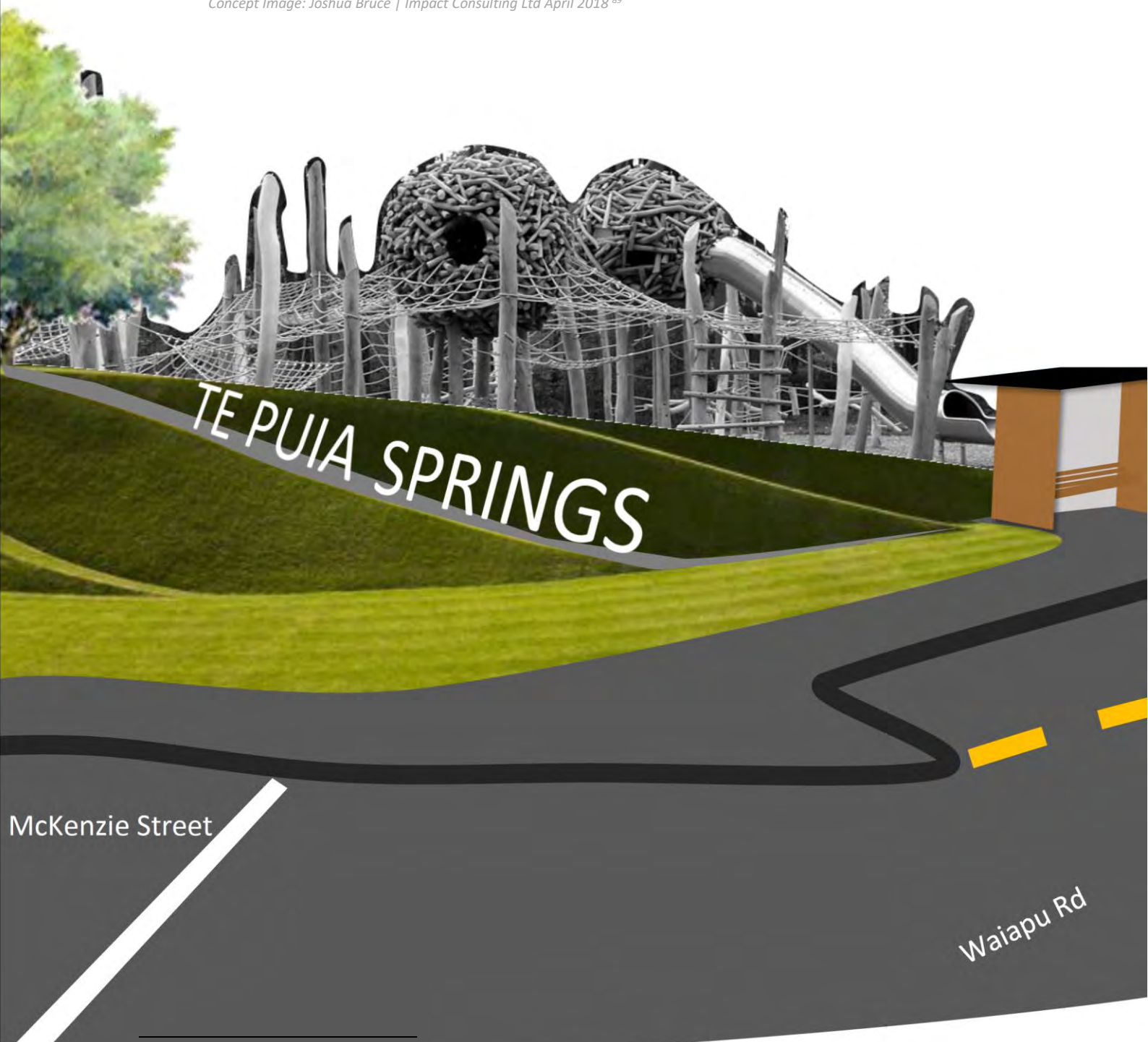
116. View of proposed Hospital Grounds / Entrance Heading North

Conceptual View of Hospital Site (corner of Waiapu and McKenzie Streets)

Featuring:

- Natural themed destination playground visible from the road (to encourage travellers to stop).
- Open green space with feature grass bund on corner and large, memorable town name signage.
- New relocated bus stop, with traditionally carved side wall panels.
- Tree plantings to left behind bund to balance view and soften view of hospital buildings behind.

Concept Image: Joshua Bruce | Impact Consulting Ltd April 2018 ⁸⁹



⁸⁹ Playground Image Source <https://pixabay.com/en/playground-play-2661987/>



PROJECT VISION | Holistic Community Health

Ahakoā he iti he pounamu

Although it is small, it is greenstone (a taonga or treasure of great worth)

Whole Project – Proposed Inclusions

The following image outlines the proposed project inclusions.

IMPORTANT NOTE: While preliminary discussions have been undertaken with representatives from potential stakeholder groups and potential collaborators, **no formal commitments have been made by these parties, at this stage.** Formal confirmations of interest, will be sought in the next stage of development.



Figure 69

Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

Redevelopment Whole Project – Proposed Inclusions

COMBINED NPH, TE PUIA SPRING HOSPITAL, GDC SERVICE CENTRE & TAWHITI CLINIC FOYER & RECEPTION

Proposed Lead Organisations: NPH + GDC



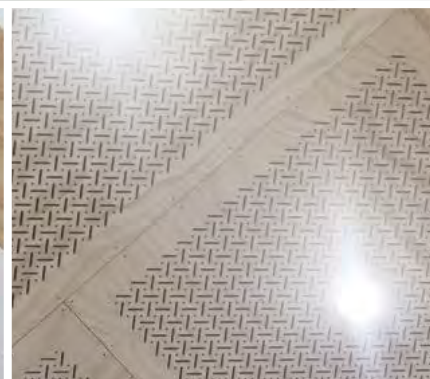
Image: Chow Hill NPH Concept Designs



Image: Chow Hill NPH Concept Designs



Images: GDC Service Centre Gisborne



Redevelopment Whole Project – Proposed Inclusions

NEW BUILD OF BASIC CORE HOSPITAL FACILITIES

Proposed Lead Organisation: NPH



Image: Chow Hill NPH Concept Designs

REHABILITATION, MATERNITY AND ELDERLY CARE + CAFÉ & KITCHEN UTILISING MODULAR HIGH QUALITY TRANSPORTABLE BUILDINGS

Proposed Lead Organisation: NPH (+ TRONPnui input in café development)



Image: www.leisurecom.co.nz

Redevelopment Whole Project – Proposed Inclusions

NPH OFFICE SPACES + CENTRE OF EXCELLENCE FOR MAORI AND RURAL HEALTH RESEARCH (RENOVATED)

Proposed Lead Organisation: NPH + Maurice Wilkins Centre



GDC SERVICE CENTRE + SHARED MEETING SPACE (RENOVATED)

Proposed Lead Organisations: GDC + NPH



Redevelopment Whole Project – Proposed Inclusions

PLAYGROUND AND TOWNSHIP IMPROVEMENTS

Proposed Lead Organisation: GDC



MAORI HEALTH REFERENCE LIBRARY & RONGOA MUSEUM

Proposed Lead Organisation: NPH



COMMERCIAL HOT POOLS DEVELOPMENT + UPGRADED HOSPITAL POOL

Proposed Lead Organisation: TRONPnui + NPH + Te Puia Springs Hotel + Te Whanau a Iritekura Whenua Topu Trust



GEOTHERMAL GREENHOUSES *(Note: Greenhouse related costs not included in project totals)*

Proposed Lead Organisation: Hikurangi Enterprises + Te Whanau a Iritekura Whenua Topu Trust



Proposed Facilities / Redevelopment Inclusions

The following table summarises proposed and potential project inclusions.

Proposed Project Components	
HEALTH	Summary Details
Redeveloped Hospital Facilities	Redeveloped / upgraded, whanau-centric green-hospital. Incorporating a total of 21 beds. <ul style="list-style-type: none"> - Medical Beds (8) - Maternity Beds (3) - Flexible / Respite Care Beds (2) - Long Term Care Beds (8)
Centre of Excellence	Centre of Excellence for Māori and Rural health incorporating traditional Māori healing and partnerships with top NZ Universities.
Elderly Care *	Capacity for future expansion of elderly care services to include a 6-10 bed retirement home (non-hospitalised care) component or reallocation of proposed beds from x2 respite care and x8 LTC beds, to x4 LTC and x6 retirement (non-hospitalised) care beds with potential to expand in future.
Rehabilitation Pool Upgrade	Upgrade or replacement of the existing geothermal rehabilitation pool with an improved pool of similar size, incorporating a shallower seated area.
Māori Health Research and Rongoa Reference Library	Establishment of a reference library holding physical and digital copies of all localised research, as well as indigenous health, Māori Health and Rongoa.
Vegetable Garden	Potential establishment of an onsite vegetable garden to supply the hospital with fresh produce.
Activity Centre	Multipurpose rural health hub activity centre.
COMMUNITY	
GDC Service Centre **	Potential partnership with GDC to bring the Council's Te Puia Service Centre into the redeveloped building with a shared reception and office resources enabling savings for both organisations.
Town Plan Inclusions **	Co-location of proposed GDC Te Puia Town Plan facilities, such as: <ul style="list-style-type: none"> - Proposed adventure playground - Town signage - Parking - Walking track from lake to hospital and hot pools.
ECONOMIC	
Shared video conferencing and meeting facilities	Incorporation of good quality shared meeting and video conference facilities into the proposed building redevelopment, enabling greater public access to Activate Tairāwhiti courses, as well as meeting space for GDC and NPH staff, as well as visiting professionals and companies.
Geothermal Resource Development **	Partnership with Te Whanau a Iritekura Whenua Topu Trust, TRONPnui and Hikurangi Enterprises to establish a collective case for funding support of geothermal resource development.
Geothermal Greenhouses **	Potential establishment of geothermally heated green houses on adjacent historic school site for Hikurangi Enterprises.
Geothermal Hot Pools **	Establishment of a commercial geothermal hot pools tourism venture in partnership with Te Puia Springs Hotel, Te Whanau a Iritekura Whenua Topu Trust and TRONPnui.
Pack House **	Utilisation of surplus buildings as a pack house or operational space for Primary Sector Partners(Manuka Honey operation).
Manuka Nursery **	Potential establishment of a Manuka Nursery on unused areas of grounds.
Rongoa Museum	Establishment of a small interactive Rongoa museum and workshop.

Figure 70

* Recommended inclusion / adjustment of bed allocation. ** Potential development inclusions which require buy-in and support from additional stakeholders and community partners.

117. Assessment of Proposed Inclusions Against Living Standards Categories

The following table assesses the impact of proposed development inclusions against NZ Treasury Living Standards Framework categories for improved living standards.

SUMMARY TABLE	NZ Treasury Living Standards Framework Categories			
Proposed Project Components	Community engagement and connectedness.	Kaitiaki of natural resources, reduction of waste & duplication, greater engagement with land & environment.	Critical mass of skills knowledge, expertise, cultural capital.	Economic outcomes employment innovation and enterprise.
HEALTH	Social Capital	Natural Capital	Human Capital	Financial and Physical Capital
1) New, or significantly upgraded, whanau-centric green-hospital.	✓	✓	✓	✓
2) Centre of Excellence for Māori and Rural health incorporating traditional Māori healing and partnerships with top NZ Universities.	✓		✓	
3) Expansion of Elderly Care services to include a small retirement home component.	✓		✓	✓
4) Māori / Indigenous Health and Rongoa reference library	✓		✓	✓
COMMUNITY	Social Capital	Natural Capital	Human Capital	Financial and Physical Capital
1) Partnership with GDC to bring the Council's Te Puia Service Centre into the redeveloped building with a shared reception and office resources enabling savings for both organisations.	✓	✓	✓	✓
2) Co-location of proposed GDC Te Puia Town Plan facilities, such as the proposed adventure playground, town signage on site	✓			✓
3) Establishment of walking track from lake to hospital and hot pools.	✓	✓		✓
ECONOMIC	Social Capital	Natural Capital	Human Capital	Financial and Physical Capital
1) Partnership with Te Whanau a Iritekura Whenua Topu Trust, TRONPnui and Hikurangi Enterprises to establish a collective case for funding support of geothermal resource development.	✓	✓	✓	✓
2) Potential establishment of geothermally heated green houses on adjacent historic school site for Hikurangi Enterprises.		✓	✓	✓
3) Establishment of a commercial geothermal hot pools tourism venture.	✓	✓	✓	✓
4) Utilisation of surplus buildings as a pack house or operational space for Ngati Porou Miere.		✓	✓	✓
5) Potential establishment of a Manuka Nursery on unused areas of grounds.		✓	✓	✓
6) Incorporation of good quality shared meeting and video conference facilities into the proposed building redevelopment, enabling greater public access to Activate Tairāwhiti courses, as well as meeting space for GDC and NPH staff, as well as visiting professionals and companies.	✓	✓	✓	✓
7) Rongoa Māori Health Museum	✓		✓	✓

Figure 71

Preliminary Whole Project Development Cost Estimates

The following table outlines a preliminary estimate of potential development costs (GST exclusive).

New Build Reception and shared facilities	m2	Rate	Totals	Notes:
Entry Lobby	10	\$3,500	\$35,000	
Reception	18	\$3,500	\$63,000	
Waiting lounge / pōwhiri space	30	\$3,500	\$105,000	
Child play area	6	\$3,500	\$21,000	
Phone bay	2	\$3,500	\$7,000	
Toilets / baby change / accessible	15	\$3,500	\$52,500	
Photocopy	9	\$3,500	\$31,500	
Staff lounge	25	\$3,500	\$87,500	
Other Shared Staff Facilities	6	\$3,500	\$21,000	
Entrance Exterior Shelter / Feature	20	\$2,500	\$50,000	
Geo Thermal Heating in new Shared Space	121	\$80	\$9,680	
	121		\$483,180	GDC 33%
Shared Renovated Spaces	m2	Rate	Totals	Notes:
Multipurpose meeting room	40	\$2,500	\$100,000	
Geo Thermal - Heating System	40	\$120	\$4,800	
	40		\$104,800	Regional Development Funding
GDC Renovated Spaces	m2	Rate	Totals	Notes:
Office spaces x2	18	\$2,500	\$45,000	
Hot desk work areas x4	18	\$2,500	\$45,000	
Meeting rooms	24	\$2,500	\$60,000	
Corridors, kitchenette, storage	45	\$2,500	\$112,500	
Geo Thermal - Heating System	105	\$120	\$12,600	
	105		\$275,100	GDC
Centre of Excellence & NPH Renovated Offices	m2	Rate	Totals	Notes:
Basic renovation only	250	\$1,000	\$250,000	
Geo Thermal - Heating System	250	\$120	\$30,000	
	250		\$280,000	50% Regional Development
Café, Booking Office, Kitchen and Storage	m2	Rate	Totals	Notes:
One pre-fitted out transportable unit	140	\$400,000	\$400,000	Assumes reuse of existing equipment where possible
Decking	75	\$500	\$37,500	
Geo Thermal - Heating System	140	\$120	\$16,800	
	140		\$454,300	50% TRONPnui
New Build Hospital Facilities	m2	Rate	Totals	Notes:
Covered Ambulance Entry	50	\$1,500	\$75,000	
Treatment Holding (x2 beds)	30	\$3,500	\$105,000	
Interview Room x2	28	\$3,500	\$98,000	
Consult Room x2	28	\$3,500	\$98,000	
X-ray and associated	35	\$3,500	\$122,500	
Mobile equipment	6	\$3,500	\$21,000	
Storage and utility	40	\$3,500	\$140,000	
Pharmacy and supplies	25	\$3,500	\$87,500	
Corridors and circulation	75	\$3,500	\$262,500	
Geo Thermal - Heating System	329	\$80	\$26,320	
	329	\$3,500	\$1,035,820	

New Build Transportable Building Hospital Facilities	m2	Rate	Totals	Notes:
Long Term Care Unit (6 beds)	144	\$400,000	\$400,000	
Multipurpose Unit (6 beds, Respite, Step Down, LTC)	144	\$400,000	\$400,000	
Maternity x2-3 beds + additional multipurpose beds	144	\$400,000	\$400,000	
Covered Walkways	60	\$1,000	\$60,000	
Geothermal - Heating System	432	\$120	\$51,840	
	432		\$1,276,800	
Rongoa Museum and Reference Library	m2	Rate	Totals	Notes:
Rongoā Museum and Reference Library	100	\$3,500	\$350,000	
Geothermal - Heating System	100	\$120	\$12,000	
	100		\$360,000	
Community Amenities	m2	Rate	Totals	Notes:
Playground		PC Sum	\$30,000	GDC town plan allocation
Entrance and town signage		PC Sum	\$100,000	GDC town plan - Entrance, road side improvements, bus stop, town signage
Bush walking tracks	700	\$75	\$52,500	GDC town plan
Planting / gardens		PC Sum	\$50,000	GDC town plan
Parking	1500	\$100	\$150,000	GDC town plan (50%)
			\$382,500	
Geothermal	m2	Rate	Totals	Notes:
Geothermal Resource access for hot pools, heating, greenhouses		Engineer Est.	\$690,000	Regional Development Fund
Hot pools and Amenities (see separate breakdown)		Cost Est.	\$525,000	TRONPhui (Assumes Option 1)
			\$1,215,000	
General and Professional	m2	Rate	Totals	Notes:
Demolition	1375	\$500	\$687,500	
Site works & prep		PC Sum	\$75,000	
Engineering		PC Sum	\$150,000	
Architecture		PC Sum	\$153,924	6% of project (excluding transportable buildings, NPH offices & geothermal pools)
Project Management		PC Sum	\$144,726	2.5% whole project
Consents		PC Sum	\$50,000	
Additional Professional Services		PC Sum	\$75,000	
			\$1,336,150	
Combined Sub-Total Costs			\$7,248,258	
Contingency			\$1,449,652	20% Contingency Factor
Total Estimated Project Cost			\$8,697,909	+GST

Figure 72

Table Notes:

- Indicative cost estimates are GST exclusive.
- A high contingency margin of 20% (or \$1.45M) has been factored into this project, given the potential for scope changes and additional costs. Estimates are intended to give an overall gauge of the anticipated scale of the proposed project and should not be considered to constitute a formal quantity surveyor report.
- As a formal concept design, has yet to be developed, the specified areas are indicative based on available information. These will be refined with detailed design.
- Fully fitted out transportable buildings of the same size retail for around \$240K when set up for residential use, a margin of \$160K per building has been allowed for design changes, transport, site work and additional fit out costs. Savings may be possible in this area.
- Cost table excludes greenhouse construction and an estimated \$180K greenhouse heating pipework.

Hospital Only Estimated Development Cost:

- *Formal discussions with additional stakeholder organisations, will influence inclusions. Exclusion of some components may reduce overall project costs, however are likely to proportionally decrease funding capacity. The overall estimated project cost for Hospital only components is \$5.9M.*

Overall Preliminary Funding Capacity Estimates

As with all projects of this nature and scale, it is difficult to gauge organisational and public funding capacity, without a formal funding assessment and/or indications of support from cornerstone funders.

This project contains a number of components which are potential inclusions based on anticipated / potential partnership with other entities and community stakeholders.

While NPH is currently in a stable financial position, the organisation has little capacity to service additional debt funding and will need to secure sufficient project backing to enable debt free development.

Ability to achieve the overall proposed development will largely be determined by the level of support secured from by key funding partners.

Potential Required Funding Break Down		
Direct Component / Partnership Funding		
GDC	\$436,160	Based on renovated Service Centre Space and 33% of foyer reception area.
GDC Town Plan	\$307,500	Based on playground, town signage, entrance, bus stop, walking track, planting and 50% of parking.
Regional Development Funding	\$934,800	Based on renovated areas for shared multipurpose meeting room and Centre of Excellence for Māori and Rural Health, plus geothermal access setup cost for hot pool and heating applications.
TRONPnui	\$752,150	Based on set up of hot pool amenities and 50% contribution towards café / booking office.
Sub-total Potential Funding	\$2,430,610	
Required Grant Funding Preliminary Estimates		
Ministry of Health / Government	\$4,500,000	Potential breakdown based on required funding
Lotteries Community Facilities Funding	\$345,000	Potential breakdown based on required funding
Lotteries Heritage Funding	\$400,000	Potential breakdown based on required funding
Other Trusts & Funders	\$845,000	Potential breakdown based on required funding
NPH Community Fundraising	\$180,000	Perceived maximum community fundraising contribution
Sub-total Potential Funding	\$6,270,000	
Total Funding Estimate	\$8,700,610	+ GST
Total Estimated Project Cost	\$8,697,909	+ GST
Surplus (Shortfall) if funding targets achieved	\$2,701	+ GST

Figure 73

Table Notes:

- *Estimates above in the direct component partnership funding segment have been attributed based on specific costs which foreseeably could be allocated to specific funding sources. Should these components be removed the associated potential funding would most likely also be proportionally affected.*
- *Required grant funding preliminary estimates are based on required funding and anticipated potential funding capacity. No formal discussions have been entered into with potential funding partners and estimates above should not be considered to represent funding commitments. Figures may change as project inclusions are refined.*

- *Ministry of Health Funding is difficult to gauge given the huge range and variable value of capital funding grants approved under different governments. Given the isolation, deprivation level and high level of need on the East Cape, it is possible to build a strong case for funding of this nature. Recent rural hospital developments include, the \$13.4M Kaikoura Hospital Development (2016) which serves a smaller catchment population and received \$10M funding support from Canterbury District Health Board and Maniototo Hospital in Central Otago which recently received a \$1M Government funding boost to their current project. The major difference with Kaikoura being that the facilities are owned by the DHB.*

Additional Potential Funding Opportunities

118. Energy Efficiency Design Advice Grant

With a current combined total floor area of over 3,000m² Te Puia Springs Hospital (although some areas have limited use) would potentially qualify for a EECA (Energy Efficiency and Conservation Authority) “Performance Advice for Public Buildings” grant.

Concept and detailed design advice at any stage of your building’s design, construction or refurbishment. Stages of building design include initial concept design, design and construction, commissioning and assessing energy performance.

Up to 100% of the cost of design advice to a maximum of \$15,000.⁹⁰

119. Energy Audit, Optimisation and Monitoring Grants

When incorporating all clinic sites NPH would have an annual energy spend of over \$200K. This would qualify the organisation for 40% subsidies on Energy Audits, System Optimisation, Monitoring and Targeting services via EECA.

⁹⁰ <https://www.eecabusiness.govt.nz/assets/Resources-Business/EECA-Business-Programme-Summary.pdf>

Operational Income Impact Assessment

As overall hospital operational funding streams are complex and tied to specific service delivery / staffing requirements, these have not been assessed in depth. **NOTE:** NPH are awaiting a business case report.

For the purposes of evaluating the feasibility of the proposed development operational funding streams have been assumed to remain constant, based on a similar capacity facility. However, it is anticipated that NPH would be in a stronger operational financial position, due to improved service delivery efficiency and much higher bed utilisation, resulting in staffing and service delivery efficiencies.

The following table assesses the anticipated net revenue/cost saving effect of the proposed redevelopment from an operation cost perspective. Potential savings of around \$100K pa. are anticipated.

New Incomes Sources / Savings	Anticipated Impact / Net Revenue Effect / Notes
Café income	Positive Effect Potential small margin on food sales. Potential to reduce or increase staffing based on seasonal demand. Staffing cost likely to be partly covered by hot pool operational support arrangement, where café staff also manage bookings.
Reception Staffing	Positive Effect - Potential saving of \$20K pa. Potential to save 0.5 FTE if one role was shared with the council service centre.
Heating Cost	Positive Effect - Potential net saving of \$40K pa. Potential to save around \$52.5K per annum on space heating LPG costs. This translates to a saving of approximately \$40K, when taking into account around 500m ² of building is likely to be still heated via LPG and a likely \$12.5K annual contribution to geothermal water collection system to maintenance (potentially via existing staff contribution). Additional Notes: <ul style="list-style-type: none"> Geothermal heating is likely to only be a viable cost saving alternative if 1) grant funding can be secured to set up the system and 2) maintenance costs are shared with the proposed hot pools and geothermal greenhouse operations. Excluding contribution from geothermal greenhouses the potential net saving would be around \$21K pa. Excluding both the geothermal greenhouses and geothermal pools contributions the switch to geothermal heating result in annual heating system maintenance cost which are approximately the same as current LPG expenditure.
Maintenance Costs	Positive Effect – Potential saving of \$10K pa. on current expenditure, plus large saving on scheduled and deferred future maintenance and staffing requirement With new low maintenance buildings, savings on maintenance costs will be possible. At present, around \$35K is spent annually on maintenance. This figure does not accurately reflect deferred or scheduled future maintenance cost such as exterior painting (which could be around \$150-250K), meaning the potential saving is much greater.
Power Costs	Positive Effect – Potential saving of \$30K pa. While power costs and potential savings are hard to gauge without detailed analysis. The proposed redevelopment will reduce the footprint of the overall building by around 25%. Assuming more energy efficient light fittings, more efficient hot water heating (via using surplus LPG heating capacity) and better building insulation, an overall power saving of 40% may be realistically achievable. While exact power costs were not supplied, these are estimated to make up around \$75K of light and heating expenses annually.

Figure 74

120. Additional Potential Operational Savings

Additional potential savings and efficiencies from the proposed redevelopment include:

- Staffing efficiencies via effective building design and patient monitoring systems.
- Reduced cleaning requirement via a smaller building footprint (25% reduction).

Additional Potential Revenue Streams

121. GDC Service Centre

- Rental or operational cost contribution from GDC for service centre heating, power, maintenance and cleaning on an agreed proportional basis.

122. Geothermal Hot Pools

- There is potential for Te Puia Springs Hospital reception or café staff to manage hot pools bookings, and for other team members to manage maintenance and cleaning, via extending hours of some of existing part-time staff.
- This would give an allowance of around \$75K per year to extend existing positions and creating efficiencies for both operations. This arrangement would remove staffing requirement for the hot pools operation, with the 5-11pm period foreseeably covered by the Te Puia Spring Hotel on a base rate service retainer and sales commission arrangement.

Budgeted NPH Staffing Allowances

- Reception / café / booking staffing 6hrs per day 11am-5pm, 365 days per year, \$50K
- Cleaning and maintenance 3hrs per day, \$24K

123. Rongoa Museum and Māori Health Reference Library

- While entry and research fees / donations are anticipated. It is expected that these will only cover operational costs, with the major benefits to NPH being additional visitors to the hot pools via having a more cohesive tourism offering and increased recognition as a centre of excellence for Māori and indigenous Health.

124. Puhi Kaiti Facilities Replacement

- While not directly related to the site under consideration as part of this project, it is recommended that the currently leased Puhi Kaiti facilities are replaced with a high quality transportable building, to be situated on a neighbouring high profile adjacent section at 494 Wainui Road, Kaiti, Gisborne (currently used as a community garden).
- This recommendation aligns with the 2003 review of East Coast Health Services⁹¹ and will foreseeably increase enrolments for the NPH PHO and improved whole of organisation long term sustainability. If undertaken in association with the proposed Te Puia Springs project it is believed that this could be achieved for around \$500K. A similar approach could be considered for the Ruatoria health clinic, which in 2003 was reportedly one of the most in need of upgrade.

125. Old Tolaga Bay Clinic Site

- While not part of the Te Puia Springs site. It is recommended that some consideration is given to the development of housing on the old Tolaga Bay Clinic site which is owned by TRONPnui. Quality housing using transportable buildings could be used to house NPH doctors or hard to recruit staff positions. When not in use for this purpose, the units could be used to generate revenue to help fund other activities.

⁹¹ Review of health services on the East Coast - Public Report, Sapere Research Group, 2013
Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

126. Retirement and Respite (non-hospitalised) Beds

The following table gives a snapshot view of similar sized facilities providing differing levels of care. Both are community hospitals focussing on elderly care in remote rural areas of NZ.

Maniototo Hospital in Ranfurly, Central Otago has a total of 26 beds with 23% of these hospital beds. The Hospital has returned an average annual surplus of around \$140K per year 2014-2017 (when donations and investment income are excluded). The hospital is currently fundraising for a \$7M redevelopment.

Whangaroa Hospital in Northland has a similar population demographic to the East Cape. The hospital has 24 beds and has recorded an annual loss or deficit of around (\$315K) for 2013-2016 (including donations and additional investment income). The hospital has had full occupancy for 6 months, with a 3month waiting list with referral agencies and is currently investigating relocating primary health services to enable a 10-bed expansion.

Important Notes:

- 2015 is used as a comparison year, as this is the most recent year where both entities submitted a breakdown of expenses including staff costs in their annual return to the Charities Commission.
- Additional public health services may be included in the funding totals.
- Occupancy in 2015 is not known.

Beds	Maniototo	Whangaroa
Hospital Beds	6 (23%)	14 (58%)
Retirement Beds	20 (77%)	10 (42%)
Total Beds	26	24
Average Income and Expense		
Service Provision cost per bed	\$29,529	\$27,225
Staffing cost per bed	\$56,318	\$134,220
Average Total cost per bed	\$85,847	\$161,446
Average Income per bed	\$89,308.46	\$152,972.08
Staffing		
Staff hours per week	930	1,521
Full time	2	9
Part-time	48	46
Average income per staff hour	\$48	\$46
Main Income Sources	2015 Annual Return	2015 Annual Return
Government Contracts	\$2,193,878	
Income from services and trading	\$128,142	\$3,671,330
Total Main Income	\$2,322,020	\$3,671,330
Main Expenses		
Salaries & Wages	\$1,464,270	\$3,221,289
Cost of Service Provision	\$767,749	\$653,407
Total Main Expenses	\$2,232,019	\$3,874,696
Surplus (Deficit)	\$90,001	-\$203,366
Surplus (Deficit) when depreciation, other expenses, plus grants, koha, donations interest and other income are included.	\$158,810	-\$218,244

Figure 75

Elderly Care Preliminary Observations

- Basic service provision costs are relatively consistent at around \$30K per annum per bed. Slightly lower costs at Whangaroa Hospital may potentially be due to their 1,000m² vegetable garden.
- Staffing requirement and intensity of care is much higher for hospitalised care. It is assumed that staff costs for hospitalised care would be higher, although this is not reflected in the average income per staff hour. Accuracy of the average staff hours figures submitted to the charities commission is not known.
- LTC Hospital beds are either underfunded, retirement beds more profitable or Maniototo Hospital have a more effective fee and staffing structure.
- Based on a surface level assessment, it would appear that approximately x3 retirement level beds are required for every x2 hospital level beds, in order for the service provision to be financially sustainable, within the current funding environment.

127. Preliminary Elderly Care Recommendations - Kaumatua / Pakeke Housing

1. That a more detailed cost and revenue assessment is undertaken into NPH's LTC bed provision, to ensure profitability.
2. That direct discussions are undertaken with both Maniototo and Whangaroa Hospitals to gain learnings from their current service provision structures.
3. That consideration is given to changing the proposed bed mix of x8 LTC beds and x2 respite care beds, to x4 LTC beds and x6 retirement level beds (Kaumatua / Pakeke housing).

Anticipated Benefits of the Proposed Redevelopment

The anticipated benefits of the proposed project are:

128. Health

1. Enhanced health service delivery and efficiency.
2. Improved ability to attract and retain staff.
3. Improved financial stability via reduced costs, improved service delivery and higher occupancy for long term care.
4. Staffing and operational efficiencies via appropriate design.
5. Operational cost savings, via reduced maintenance, heating, power and cleaning requirements, due to smaller, low maintenance, well insulated spaces which are designed for purpose.

129. Community / Economic

1. Improved holistic community health, including additional employment opportunities (not just in Te Puia, but along the whole East Coast as tourist traffic increases).
2. Hubbing of services to enable operational cost savings and increased community engagement, via shared reception and office resources with GDC Service Centre.
3. Critical mass of activities creating environment for development of additional business operations and ensuring the long-term sustainability of existing businesses.
4. Establishment of a visible tourism and public focal point for the township.
5. Development of a world class geothermal experience which turns Te Puia Springs into a travel destination and adds value to regional tourism activities, via longer stays in the region.

130. TRONPnui Additional Benefits

1. Ability to support and lead a tourism focussed hot pools development with:
 - Limited financial risk (pools are movable)
 - Limited staffing requirement (Staffed via extension of NPH and Te Puia Springs Hotel roles)
 - A clearly visible and tangible Māori business presence on the East Coast, which can be enjoyed by a large portion of the regional population, visitors and holidaying whanau.
2. Ability to help attract regional development funding to the East Coast via a collaborative project to access the geothermal resource of the area, with direct cost saving benefits to NPH and potential to support positive business development such as Hikurangi Enterprises.
3. Potential to strengthen or extend Ngati Porou Miere and manuka honey operations.

131. Gisborne District Council Additional Benefits

1. Reduced earthquake risk and ability to simply maintain the façade of the existing service centre to a tidy standard, until such time as an alternative building use can be determined.
2. Reduced heating, maintenance and cleaning costs.
3. Reduced staffing costs via collaborative reception.
4. Significantly improved facilities.
5. Increased likelihood that the Te Puia Springs Hospital site will be retained and therefore reduced exposure to the potential expectation of funding contributing to a new treated water supply, should the hospital facilities be relocated (as it is unlikely that the Ministry of Health would duplicate their investment in existing infrastructure).

132. Additional Benefits Hauora Tairāwhiti (DHB)

1. Improved overall financial sustainability of NPH services.
2. Improved ability to cater for Gisborne Hospital overflow care and service provision (specific requirements yet to be determined). Giving increased capacity in Gisborne.
3. Reduced funding expectation via collaboration with additional parties for mutual benefit.
4. Improved service efficiency and reduced overall costs.

Main Project Risks and Risk Mitigation

133. Land Stability

Level	Summary	Proposed Risk Mitigation
Medium	<p>There is known widespread gradual movement of the land at Te Puia Springs.</p> <p>The majority of the Te Puia Springs Hospital site has been determined to be intact and suitable for construction using the existing building footprint and areas to the West of the site.</p>	<ul style="list-style-type: none">• Use of existing building foot print as far as possible.• Additional geotechnical assessment.• Engineered foundations within new build sections designed to cater for any movement.• Use of transportable buildings to reduce financial exposure and enable relocation or adjustment if needed.• Potential use of screw piles or similar on the transportable buildings to allow for floor level adjustments if needed in future.

Figure 76

134. Changes in Service Provision Requirements

Level	Summary	Proposed Risk Mitigation
Low - Medium	<p>While core hospital services will always be required. Changes are possible in the demand and need for other service provisions.</p>	<ul style="list-style-type: none">• Use of transportable buildings reduces risk exposure and makes services scalable over time, with addition or relocation of units as needed.

Figure 77

135. Changes Scope / Additional Construction Costs

Level	Summary	Proposed Risk Mitigation
Medium	Preliminary estimates can be considered a guide only until such point as concept designs are agreed upon.	<ul style="list-style-type: none"> Due to the remote location and current level of design certainty a contingency factor of 20% has been used to limit potential cost escalations. The use of pre-fitted out transportable buildings reduces potential variations, construction staff costs and overall building cost.

Figure 78

136. Service Disruption

Level	Summary	Proposed Risk Mitigation
Medium	While Te Puia Springs Hospital has surplus space within their facility to relocate patients and staff. There is potential for service disruption should a construction project take an extended period of time.	<ul style="list-style-type: none"> The use of pre-fitted out transportable buildings reduces construction time and could also temporarily house staff or patients (prior to final positioning) while renovations or demolition are undertaken on existing facilities.

Figure 79

137. Geothermal Resource Risks

The following is an extract from the 2018 Geothermal resource assessment commissioned as part of this project⁹².

“A number of risks may affect the operation and effectiveness of a geothermal water collection systems. These include:

- The Springs are located in soft sloping soils and can be easily diverted with small movement of the ground. Springs can and do move and will require regular system modification. Rebuilding of one collection station per year has been factored into maintenance costs.
- There has been no long-term study to identify if the spring flows vary with climatic conditions (draught etc).
- Most springs are in bush or scrub areas and can be affected by falling trees etc.
- It is known that the spring water deposits minerals in pipelines and heat transfer plant. The rate of deposition will depend on a number of factors (flowrates, temperature, times to settle etc) and has not been studied. A trial plant should be considered to quantify this risk. Monthly collection system cleaning has been factored into maintenance costs.
- Many of the springs appear to be in flood plain areas and may be at risk of dilution or flooding during heavy rainfall.
- The springs are only warm and come in contact with the soil. The risk of pathogenic amoebae being present is likely to be high and all geothermal bathing should be passive with no head immersion.
- The storage tanks are large (8m diameter) and will need to be designed to allow for local ground movement.
- The springs are known to contain hydrocarbon, hydrogen sulphide and other geothermal gases. All areas containing geothermal fluid shall be above ground and well ventilated. All geothermal pools shall overflow at the rim and regular gas monitoring performed. Gas extraction may be required prior to bathing though existing use suggests this is not required.
- All material in contact with geothermal fluid will require careful selection and in most cases plastics or 316 stainless or higher grade steel should be used.”

⁹² Te Puia Springs, Ngati Porou Hauora, Geothermal Resource and End Use Applications, Dobbie Engineers, April 2018
Ngati Porou Hauora – Community Facility Redevelopment Feasibility May 2018

Independent Assessment of Project Feasibility

It is our view that this project is feasibility and realistically achievable.

The key to project success, will ultimately be the level of partnership, effective working relationships and collaboration that can be fostered with key stakeholders such as the Ministry of Health, Hauora Tairāwhiti, Gisborne District Council and TRONPnui.

All these organisations stand to directly benefit from each other's success and ultimately have the same goal of "healthy, prosperous communities". Finding common ground and mutually beneficial arrangements will be essential.

Next Step Recommendations / Timeline

138. Project Establishment

6. Review and adoption of Feasibility by NPH Board
7. Personal distribution of preliminary draft report to potential partner organisations by NPH CEO and board members to formally seek endorsement of the proposed project in principle
8. Independent facilitation of a combined stakeholders briefing and preliminary discussions
9. Formation of an advisory panel with representatives from all key organisations
10. Appointment of a new NPH staff member responsible for the development project

139. Design

11. Design workshop to refine inclusions and approach
12. Quantity surveyor report to reassess potential costs and allow for design changes if needed

140. Funding

13. Negotiation of cornerstone funding commitments, based on targeted funds being achieved
14. Support partner organisations in seeking funding for their project components
15. Fundraising and grant applications
16. Detailed design and engineering input

141. Construction

17. Transportable buildings brought to site (used as temporary facilities, as buildings are removed)
18. Demolition / renovation of existing facilities
19. Supplementary geotechnical assessment / site preparation
20. Construction of new facilities
21. Positioning of transportable buildings
22. Landscaping and construction of community amenities



Manaaki whenua, Manaaki tangata, Haere whakamua

Care for the land, care for the people, Go forward

Appendix 1

142. Ngāti Porou Hauora Health Dashboard: 2016

Appendix 2

143. Te Puia Springs, Ngati Porou Hauora, Geothermal Resource and End Use Applications, Dobbie Engineers, April 2018

Appendix 3 - Economic Development Opportunities

Models and Partnership Possibilities

144. Research

- **Te Hononga Pūkenga** - 'the connection of experts'. A Māori and Indigenous research directory with the aim of building stronger engagement between Māori Researchers and Government, the wider public/private sector. <http://www.tehonongapukenga.ac.nz/>
- **Rongoa / Antidiabetic Plants** – Waikato University researcher Dr Jonni Koia has been awarded a multi-year grant to conduct biomedical research on rongoā rākau (Māori medicinal plants) with anti-diabetic potential. <https://www.waikato.ac.nz/news-events/media/2017/hrc-funding-for-rongoa-rakau-study>
- **Pharmac** – Māori health research. <https://www.pharmac.govt.nz/tools-resources/research/Māori-health/>
- **Ngā Pae o te Māramatanga (NPM)** - New Zealand's Māori Centre of Research Excellence (CoRE) funded by the Tertiary Education Commission (TEC) and hosted by The University of Auckland. NPM has 21 partner research entities⁹³. <http://www.maramatanga.ac.nz/about>

145. Existing Research Partnerships

- **Maurice Wilkins Centre and University of Otago** – Jointly managed diabetes / health research centre based at Te Whare Hauora o Ngāti Porou, Te Puia Springs. <http://www.mauricewilkinscentre.org/news/mwc-partners-with-ngati-porou-hauora-for-new-research-centre-on-east-coast.aspx?tag=Ngati%20Porou>

146. Medical Crops & Products

- **Hikurangi Hemp** - Ministry of Health approved trial crop of industrial hemp, which now has 5-thousand plants. Long term objective of providing a lower cost alternative to therapeutic products, with some medical grade products currently used in NZ costing \$1,400 per bottle. The company anticipate being able to produce a similar quality hemp based product for around \$150 per bottle by 2019. Currently employing 15 growers. [Hikurangi Hemp Website](#) | [News Hub Article](#)
- **New Zealand Manuka Group** – Whakatane based company (production plants in Opotiki and Awakeri) focussed on growing, harvesting and exporting high grade manuka oil, as well as honey, agar and bio-media production from pterocladia seaweed. The company currently employ around 120 staff. Manuka honey pioneer Phil Caskey⁹⁴ is credited with helping to ensuring that rural communities benefit from the increasingly rich harvest being generated from their land. This was achieved through the development of a tripartite arrangement between apiarists, the company and the landowners, where 35% of profits are directed back to landowners. <http://www.nzmanukagroup.com/>

⁹³93 <http://www.maramatanga.co.nz/about/participating-entities-1>

⁹⁴94 http://www.nzherald.co.nz/bay-of-plenty-times/news/article.cfm?c_id=1503343&objectid=11667105

A manuka industry action group⁹⁵ has recently been set up and with government support hope to grow the value of total exports nationally to \$1.2 Billion by 2028⁹⁶.

- **Kiwi Herb** – Exporter of herbal formulas with a production plant in Auckland. Products include Echinacea & Manuka Honey, Dandelion and Marshmallow, as well as native plants including Kawakawa, Horopito, Manuka, Tanekaha, Hoheria, Koromiko, Poroporo and Totara.
<http://www.kiwiherb.co.nz>
- **Kiwi Herbs** – Wellington based exporter of NZ plants seeds and extracts.
<http://www.kiwiherbsltd.co.nz>
- **Health Post** - A Collingwood based company who produce a huge range of health products from local and imported ingredients and turn over more than \$1M worth of product per month. Their business started as a postal service selling direct to customers. <http://www.healthpost.co.nz/> | [2014 news article](#)
- **Frankie Apothecary** – Small start-up Auckland based business selling kawakawa infused balms for treatment of eczema. <http://www.frankieapothecary.co.nz/> | [News article](#)

147. Holistic Wellbeing

- **NZ Association of medical herbalists** – Network of natural health professionals including some Rongoa practitioners. <http://nzamh.org.nz/>
- **Rakau Rongoa** - A holistic wellbeing clinic based at the Tokoroa Community Centre and producing a small range of products for export. Run by qualified rongoa practitioner and solo mother Karla Crooks.⁹⁷
- **Ministry of Health Funded Rongoa Providers** – List of funded Rongoa providers
<https://www.health.govt.nz/our-work/populations/Māori-health/rongoa-Māori-traditional-Māori-healing>

148. Health / Rongoa Education

- **Te Wānanga o Aotearoa** - Offer a certificate course in Rongoa <https://www.twoa.ac.nz/Nga-Akoranga-Our-Programmes/Health/Certificate-in-Rongoa-Māori-Appreciation>
- **Titoki Education and Learning** – Run regular Rongoa workshops are run in Tauranga, presented by Rob McGowan who has held positions with the department of conservation and Waikato University and been teaching Rongoa and bush craft for over 20 years.
http://www.titokieducation.co.nz/rongoa_medicine.html

149. Food

- **South Coast Environment Society** – New Zealand's longest running environment centre, based in the small south coast town of Riverton (pop. 1,400). SCES is an umbrella organisation for a number of activities including a seed saving operation, food forests, heritage orchards, various

⁹⁵ http://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11769656

⁹⁶ <http://www.scoop.co.nz/stories/BU1712/S00364/manuka-health-welcomes-mpi-efforts-over-honey.htm>

⁹⁷ <https://www.stuff.co.nz/national/health/91827255/high-hopes-for-maori-medicine-exports>

conservation projects and a volunteer run organics food co-op turning over in excess of \$200K per year in fresh produce sales. SCES are currently fundraising for development of a community kitchen and seed saving facilities, which will foster microenterprise and food product production. <http://www.sces.org.nz/>

- **Koanga Institute** - A non-profit organisation based in Kotare Village, Wairoa, with a focus on saving heritage and heirloom food crops, including vegetable seeds and fruit trees. The Koanga Institute is moving its focus towards becoming a leading centre for regenerative living and is building a self-reliant eco village. <http://www.koanga.org.nz/>
- **Flavours of NZ** - A significant million-dollar research project⁹⁸ was undertaken from 2009 onwards to investigate the ability to export kawakawa, horipito manuka, nau and taramea as high grade food products and food flavours. The project included EIT student involvement. The project was government funded under the the Foundation for Research Science and Technology's inaugural Te Tipu o te Wananga portfolio, which promotes research exploring New Zealand's indigenous knowledge base, and supported by the Federation of Māori Authorities (FoMA)⁹⁹.
- Haumana Urban Farm, Kerikeri

150. Food & Forestry

- **Ernslaw One** – The fourth largest forestry owner in NZ. Currently developing a secondary export industry utilising their fire ponds to grow and harvest koura (a threatened species of native fresh water crayfish). The breeding programme is helping to restore a native species while also providing a developing revenue stream and public profile for the company. Over the past five years they have stocked 500 ponds and harvested 250kg of crayfish. In time they aim to reach 10 tonne of production per year which would enable them to sustainably supply an export market. At around \$145 per kg this would equate to exports of \$1.45M per annum. <https://www.newsroom.co.nz/@living-room/2017/08/29/45024/sustainable-nz-crayfish-venture-wins-accolades>

151. Forestry

- **Tanes Trees Trust** - A non-profit Charitable Trust focused on encouraging the use of New Zealand indigenous tree species for biodiversity, landscape enhancement, cultural benefits, and providing the option for sustainable production of high-quality timber and other resources. <http://www.tanestrees.org.nz/>
- **Minginui Nursery** – A state-of-the-art native plant nursery in Minginui Te Whaiti, built by Ngāti Whare, and using a new approach to propagation of indigenous podocarps developed by Sicon. The nursery is producing around 100,000 trees per year, many of which have been sold to neighbouring iwi, Tūhoe and Ngāti Manawa. Currently employing seven staff. <http://www.minginuinursery.nz/nursery/>

152. Regional Economic Development

- Tairāwhiti Māori Economic Development Report <https://www.tpk.govt.nz/en/mo-te-puni-kokiri/our-stories-and-media/Tairāwhiti-Māori-economic-development-report>

⁹⁸ <http://www.stuff.co.nz/environment/164085/1m-project-to-tap-native-plant-potential>

⁹⁹ <https://www.plantandfood.co.nz/file/annual-report-discover-sep-2011.pdf> pg 31.

153. Tourism Hot Tub Attractions

- Onsen Hot Pools, Queenstown
<https://www.onsen.co.nz/hot-pool-massage-experiences/>
- Omarama Hot Pools, Central South Island
<http://www.hottubsomarama.co.nz/soak-your-soul>
- Glacier Hot Pools, Franz Joseph
<https://www.glacierhotpools.co.nz/>

154. Geo-thermal Examples

- Wairakei terraces, Taupo
<http://www.wairakeiterraces.co.nz/index.php/hot-thermal-pools>
- Peninsula Hot Springs, Australia - Peninsula Hot Springs has been named the world's best Mineral Springs Spa at the World Luxury Spa Awards 2016
<https://www.peninsulahotsprings.com/experiences/bathe/>
- Hanmer Springs, Canterbury
<https://hanmersprings.co.nz/pools/pricing>
- Athenree
<http://athenreehotsprings.co.nz/hot-pools>
- Turangi Region Hotpools
<http://www.riverstonebackpackers.com/tongariro-outdoor-adventures/turangi-hot-pools/>
- Polynesian Spa, Rotorua
<https://www.polynesianspa.co.nz/bathing/romantic-double-dipper>
- Okoroire Hotel, Tirau, Luxury lodge experience with geothermal spa
<http://www.okohotel.co.nz/experiences-2/>
- Treetops Lodge and Estate, Luxury Experience with Spa and Māori Healing
<http://www.treetops.co.nz/rotorua-spa>
- QE Health, Rotorua, Geothermal spa with strong focus on French thalassotherapy, physio recovery and rehab referrals
<https://www.qehealth.co.nz/Geothermal-Spa>
- Miranda Holiday Park
<https://www.mirandaholidaypark.co.nz/>

155. Tourism

- **Te Puni Kōkiri** – Māori Tourism workshop, from Potaka to Mohaka, “This is where Aotearoa was born, because this is where Māui hooked the fish”. <https://www.tpk.govt.nz/en/mo-te-puni-kokiri/our-stories-and-media/from-potaka-to-mohaka>
- **Native Medical** – Rongoa medicine based forest tours operating in Rotorua.
<http://www.rotoruanz.com/visit/see-and-do/Māori-culture/rotorua-native-bush-tours>

156. Tourism - Gisborne Region Māori Cultural Attractions / Experiences¹⁰⁰

- Waka Toa Tours
- Te Aio O Nukutaimemeha (The Peace Of Nukutaimemeha) - Traditional Waka Taua (War Canoe)
- Ngāti Porou Tourism (custodian of Hikurangi Hut)
- Mt Hikurangi and the Maui Whakairo (carved sculptures). The nine carved Whakairo depict Maui-Tikitiki-a-Taranga and his whanau. The Whakairo are a legacy for the future generations and a tribute to the cultural heritage and artistry that has evolved within Ngāti Porou.

¹⁰⁰ 2015 list <http://www.mbie.govt.nz/info-services/sectors-industries/regions-cities/regional-economic-development/pdf-image-library/East%20Coast%20Regional%20Economic%20Potential%20Study.pdf>

157. Example French Thalassotherapy Spa Treatments

Often funded via their private health insurance providers, similar to a prescribed rehab programme via ACC. Some treatment examples are included below.

Referral to these examples was provided by a guest at the Te Puia Springs Hotel on holiday from France.

Spa treatments

1. Stress relief
2. Back and joints
3. Young mother treatments
4. Detox
5. Menopause
6. Anti-aging
7. Relaxation
8. Circulatory disorders,
9. rheumatism,
10. osteoporosis,
11. treatment of psoriasis

Thalassotherapy French Spa Offerings

- Underwater shower / underwater jets / Jet showers
- Massage
- Hydro massage bed
- Breathing exercises
- Sea water / 31-32 degree sea water
- aquabeds,
- swimming against the current,
- jacuzzi, geyser,
- aquabikes / aquagym course and fitness area including all the essential equipment: treadmills, bicycles, elliptical trainers, rowing machines, weight machines
- Thalaxion (French mineral spa) bath (circulatory care);
- Ergonomic tables for wraps, massotherapy (mechanical modelling with hot jade stone)
- Hammam – Turkish bath
- Heated seawater pool with multijet and underwater music
- Sauna and a multisensory shower, a rest area and herbal tea
- 3 assessments: biological, biometric and lifestyle assessment
- Hair and scalp treatments
- "Detox" Cuisine
- Seawater-based treatments: Hydromassage baths, Wraps, Affusion showers, Watermass
- Massages, facials and body
- Beauty space including hairstyle, barber, make-up and nails
- Aromatherapy
- fitness and cardio-training activities
- seawater scrub
- magnesium oil
- Seaweed (algae wrap)
- Mud
- Relaxation pond
- The water course also offers hot tubs and many activities are possible in the pool: water aerobics, aquajogging, swimming lessons, water courses

