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**thriving
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The Big Wastewater Story

**DISTRICT
WASTEWATER
TREATMENT AND
DISCHARGE
MANAGEMENT
STRATEGY**

September 2020

Report A:O.3

District Wastewater Treatment and Discharge Management Strategy

Central Hawkes Bay District Council

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1. EXECUTIVE SUMMARY

Central Hawke's Bay District Council (CHBDC) is committed to the health, safety, and wellbeing of our community. This commitment extends to those who work for us and with us in the delivery of services and those who receive services from us. Providing wastewater services is a critical aspect of this and a plan is needed to ensure that this service is enduring.

The **Wastewater Strategy** (Strategy) developed and set out in this report outlines a process to achieve our vision for resilient and sustainable wastewater management for the next 50 years. The Strategy's aim is to ensure that wastewater systems in the district are developed to managed efficiently, effectively and sustainably, with one eye on the present and one eye on the future. It will serve as a guide to inform the Council's asset management and planning processes surrounding wastewater.

This Strategy sets out a process to achieve the outcome wanted across the District.

This Strategy aims to provide line of sight and transparency to all involved and aligns the project outcomes with Council's THRIVE objectives of smart growth, durable infrastructure and environmental responsibility.

The outcomes we want to achieve - Our Objectives -



- A proud district.
- A prosperous district.
- Strong communities.
- Connected citizens.
- Smart growth.
- Environmentally responsible.
- Durable infrastructure.

The Wastewater project across the district has been highlighted by elected members as the number one priority for this term (2019-2022), as indicated in the Elected Member Priorities.

Elected Member Priorities

Following the October 2019 triennial election, Council has taken the time to discuss the key issues and opportunities facing Central Hawke's Bay District Council and have confirmed the general direction they wish to take Central Hawke's Bay. Council has agreed that the platform built by Project Thrive has provided building blocks for success that now require continuation of momentum on building excellence for community with an eye to "sharpening our focus on the mechanisms that we have for true transformation for the future". Council will continue to place its energy and investment on projects and priorities that deliver on the five key areas of focus.

Key Areas

- Protecting and promoting our unique landscape
- Planning for tomorrow as we future-proof Central Hawke's Bay
- Promoting smart growth
- Attracting and enabling business success
- Strengthening our district and community identity

Strategic Priorities

These will be supported and delivered through five strategic priorities that Council want to ensure its success in:

- Delivery of #thebigwaterstory** and improved water security for Central Hawke's Bay.
- The District Plan:** Delivery of a notified and operative District Plan.
- Waste Water Treatment Project:** Capital works plan completed, initial improvements completed, and future funding strategy clarified.
- Social Housing:** Increased numbers of social housing in Central Hawke's Bay, including improved leverage off Council's retirement housing portfolio.
- Waste Free CHB:** Reduce recycling to landfill and improved asset management and leverage of landfill.

Priorities and projects

In addition to setting the direction for Council, this report seeks to provide clarity on the role of the two full Committees of Council by outlining the work programme for the committees in the next three years on the basis of "what we know now". Priorities and projects can change at the direction of Council.

Strategy and Wellbeing Committee	Council	Finance and Infrastructure Committee
<ul style="list-style-type: none"> Lead and monitor the implementation of the Waste Free CHB Strategy. Lead the delivery of the Social Housing Strategic Framework. Monitor the implementation of the Economic Development Strategy. Monitor the implementation of the Environmental Strategy. Review the current Community Wellbeing Strategy and then monitor the implementation of a revised Social Development Strategy. Develop a Maori/Iwi Engagement Strategy. Monitor development and implementation of Community Plans. 	<ul style="list-style-type: none"> Review and approve Section 17a Reviews as appropriate. Monitor the delivery of the District Plan project and make any decisions related to this project. Lead the development of the Long Term Plan 2021-2031, and delegate to committees on specific functions as and when required. Lead the development of Annual Plans, and delegate to committees on specific functions as and when required. Monitor the implementation of CouncilMARK recommendations and progress. Provide advocacy, leadership and facilitation on Water Security initiatives for Central Hawke's Bay. Work with committees to undertake reviews of Council Bylaws and Policies. 	<ul style="list-style-type: none"> Lead and monitor the Wastewater Treatment Plan projects for across Central Hawke's Bay. Monitor the implementation of #thebigwaterstory. Complete and lead the Rates Review. Monitor the implementation and progress of Provincial Growth Fund projects. Develop a Land Transport Strategic Framework and ensure governance input into the three-year business plan before NZTA submission. Lead the review of the Financial Strategy and associated policies that input into the Long Term Plan 2021-2031. Review the current Treasury Policy – Investment, Debt and Liability Management policies. Monitor the implementation of the non-rateable income strategic framework.

The strategy provides the opportunity to step back and consider a process to achieve **not just what is needed now, but for the needs of future generations**. This then needs to be discussed and approved by the community and then the delivery needs to be coordinated. There is a complex set of interrelated issues and actions involved; and this **requires a Strategy**.

Development of a robust wastewater Strategy aims to reduce unnecessary duplication, redundancy of infrastructure and the need for ongoing small poorly justified modifications of infrastructure for the foreseeable future. The ability to “**step back**” and assess future wastewater needs and their integration with district wide growth, changing environmental standards, cultural and social expectations is a key outcome of the wastewater strategy.

Reticulation, treatment and discharge are all part of managing wastewater; along with overlapping considerations of resilience, climate change and the system’s environmental foot print. However, this **Strategy focuses on the collection, treatment and discharges of wastewater**, but other aspects need to be considered in time.

This Strategy is not just about correcting previous shortcomings in our wastewater systems. This **Strategy is intended to link to and where possible pre-empt and be ahead of environmental regulation**, providing a pre-emptive process ahead of time rather than being reactive.

A strategy should set a plan as to why and how to do something. In the case of **#TheBigWastewaterStory** this includes a commentary on the preference/ desire/ willingness/ ideas (**what is needed and what is aspired to**) to manage wastewater treatment plant discharges from reticulated sewers in the district.

Of the total district population of 14,850 people (Squillions, 2020), the majority are serviced by reticulated wastewater facilities at Otane, Waipawa, Waipukurau, Takapau, Porangahau and Te Paerahi. Managing the treatment and discharge of this wastewater is critical to providing for the wellbeing of the community, and a Strategy is needed to direct and focus the planning and development of reticulated wastewater management for the district.

A key part of the Strategy to deliver sustainable wastewater systems is to understand and deliver a forward-thinking solution that meets the needs of our community. This should be achieved by listening to the community, seeking and taking on board sound expert advice, and robust management of the project delivery within appropriate regulatory and financial limitations.

1.1 What is the Strategy?

The Strategy involves defining a process which breaks down the needed steps and ensures a considered and logical approach is taken.

The logic and priorities laid out within the strategy is to ensure council delivers on the vision, direction and objectives set early in the wastewater programme, these are to;

- Create a district wide wastewater management strategy
- Ensure we bring the community along and incorporate community views
- Be better than the required consents and compliance requirements
- Pre-empt regulatory change
- Remove surface water discharge
- Reduce the number of treatment plants
- Phase the roll out of the upgrade programme to;
 - Manage affordability and funding constraints
 - Allow engagement and community input throughout the projects
 - Practically manage the number of consents required
 - Environmental impacts and outcomes
 - Improving the effluent quality in the short and long term
- Ultimately improving the value of the wastewater as a reuse opportunity

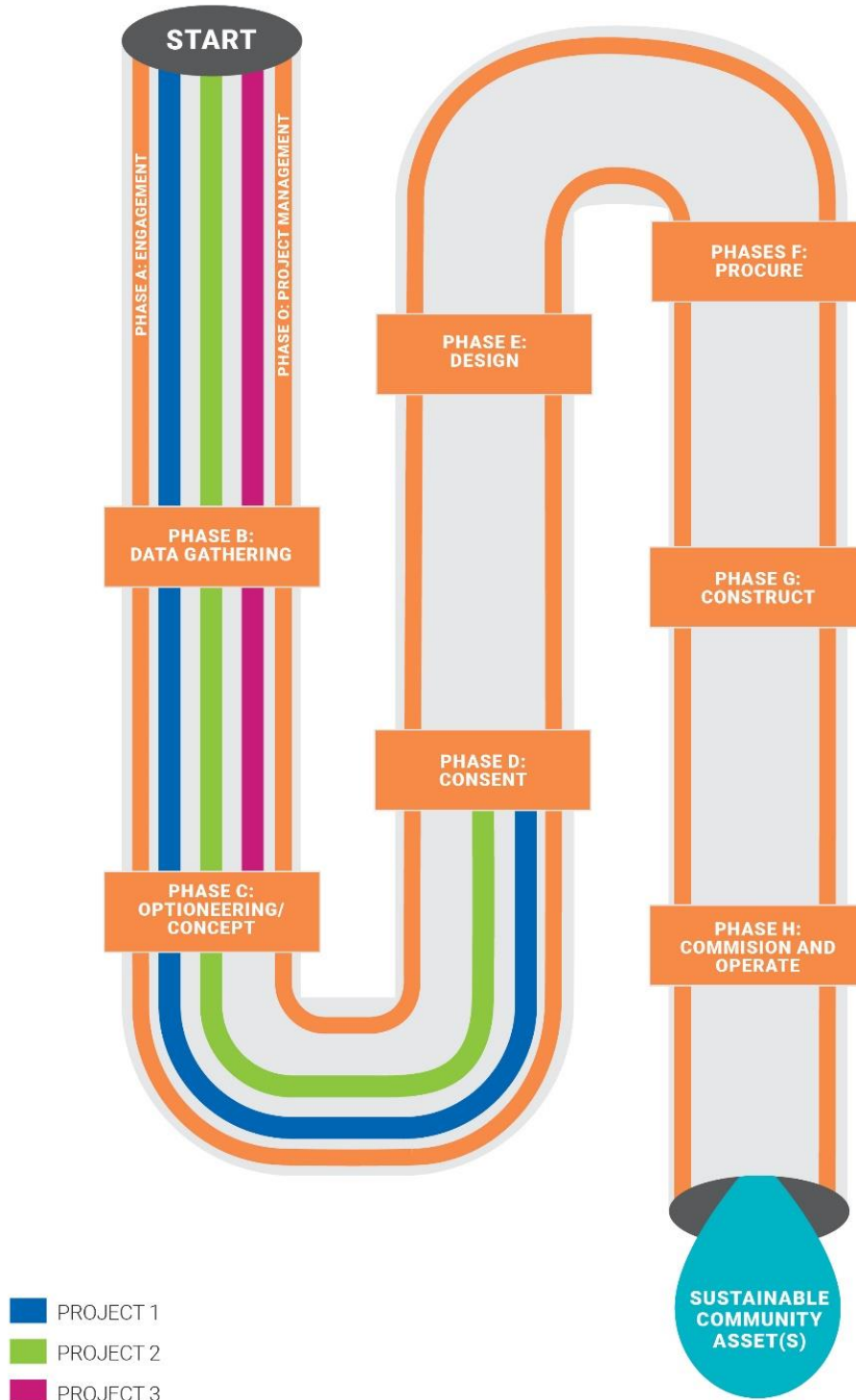
This allows the process of implementing the Council's Vision to be implemented in a more manageable way. The first essential part is drawing a line around what is to be considered. To assist with this, and noting that **#TheBigWastewaterStory** is a significant programme; it encompasses six communities which have been divided into five **Projects**.

- **Project 1** – Otane, Waipawa and Waipukurau
- **Project 2** – Takapau
- **Project 3** – Te Paerahi and Porangahau
- **Project 4** – Residuals
- **Project 5** – Loadings and Flow Management

To further assist with management, the delivery of the first three projects follow a sequence of **Phases**. These Phases include:

- Phase O: Project Management;
- Phase A: Engagement;
- Phase B: Data gathering;
- Phase C: Optioneering/Concept;
- Phase D: Consent;
- Phase E: Design;
- Phase F: Procure;
- Phase G Construct; and
- Phase H: Commission and Operate.

The relationship between the Projects and Phases is summarised below. A key part of the Strategy is knowing how the Projects relate to each other and being able to logically implement changes over time, as part of the Phases.



Key considerations in informing the Strategy to deliver the projects include:

- Territorial Authorities such as CHBDC have obligations under the Local Government Act (LGA) to develop, manage and sustain wastewater facilities for their communities. **Sustainability** has multiple considerations. This includes economic, social, cultural and environmental; and much more than the historic focus on economic and environmental sustainability.
- The impact of costs also needs to be considered when choosing a wastewater system, in that while a system **should be affordable** it should also seek to **not be a patch fix** and it should be **forward thinking**. This effectively means that the resource consenting for a discharge should be for an appropriate system to meet the community's needs, and not solely focused on immediate compliance and environmental outcomes. Costs over the life of the asset should be considered, and in particular an evaluation of options should include combined Capital and Operational considerations (Whole of Life cost).
- **Community engagement** and approval of wastewater options and changes is not required. However, it is considered best practice for achieving the necessary LGA and RMA functions. Equally, engagement with Maori is not essential, but as partners under Te Tiriti o Waitangi consultation with tangata whenua is desirable and in-line with best practice.

There has been considerable engagement to date, and this has resulted in the development of a Vision:

Our effluent is treated in a sustainable way that creates a resource, protects our environment, and continues to do so for generations to come.

This Strategy is a process to deliver this vision. In particular, the Strategy has included developing a series of iterative options developed for Projects 1 (WOW), Project 2 (Porangahau and Te Paerahi) and Project 3 (Takapau), with refinement (community engagement, Long Term Plan consultation, Resource Consent engagement) resulting in the development of preferred options. Within the Strategy is a means to further refine the options to develop Best Practicable Options (BPO) for implementation.

2. WHY DO WE NEED A WASTEWATER STRATEGY?

A Strategy is needed to ensure we look ahead and deliver **not just what is needed now, but for the needs of future generations**. There is the need to have a process to identify what is physically required. This then needs to be discussed and approved by the community and then the delivery needs to be coordinated. There is a complex set of interrelated issues and actions involved; and this **requires a Strategy**.

Treated wastewater impacts or interacts with our environment in three key areas and the long term management of each of these needs to be properly planned. These are:

- Liquid Stream: The treated water that leaves the treatment plant site and is applied to land or to water;
- Solids Stream: Screenings, Grit and the excess biomass that is generated in the treatment process in consuming the liquid and solid contaminants entering the WWTP;
- Atmospheric discharges: Noise, odorous compounds, and greenhouse gas emissions both on and off site.

Development of a robust wastewater Strategy aims to reduce unnecessary duplication, redundancy of infrastructure and the need for ongoing small poorly justified modifications of infrastructure for the foreseeable future. The ability to “**step back**” and assess future wastewater needs and their integration with district wide growth, changing environmental standards, cultural and social expectations are key aspects of the wastewater Strategy.

The Strategy aims to provide clear direction and guidance on how the programme of works will come to life and ensures every decision we make along the project path can be linked to the overarching **Strategy**.

3. WHAT DOES THIS STRATEGY COVER?

Council's role in wastewater management is multifaceted. Wastewater originates at individual properties, businesses and from industrial processes. Reticulation, treatment and discharge are all part of managing wastewater; along with overlapping considerations of resilience, climate change and the system's environmental foot print. However, this **Strategy focuses on a process to ensure the appropriate collection, treatment and discharges of wastewater**, but other aspects need to be considered in time.

The involvement of the Council in wastewater management not only includes the provision and operation of community wastewater systems, but also building inspections; issuing of building consents and compliance certificates, review of subdivision proposals and issuing resource consents, provision of public health inspectors and monitoring staff; managing trade waste and enforcing minimum standards for onsite wastewater treatment systems, as well as other aspects.

Wastewater is currently part of a renewed Central Government focus on 'Three Waters' management (potable water, wastewater and stormwater). Initiatives which will see regulatory and non-regulatory approaches to improve water quality (National Policy Statement for Fresh Water Management) that will shortly require new management regimes and design changes (upgrades) to many existing wastewater discharges. This strategy is not just about a process to correct previous shortcomings in our wastewater systems. This **Strategy is intended to link to and where possible set out a process to pre-empt and be ahead of environmental regulation.**

An example of recent regulatory changes is [Plan Change 6](#) (2015) to the Hawke's Bay Regional Resource Management Plan (that focuses on the Tukituki River catchment) which aims to drive improvements in water quality progressively over time so that freshwater objectives are achieved by 2030. CHBDC needs to account for the nutrients discharged from its wastewater treatment plant(s) and demonstrate that these are changed and upgraded to contribute towards the required Tukituki catchment improvements.

A further key driver to looking ahead is the fact that a number of CHBDC's wastewater treatment plants have resource consents which are about to expire. In addition, some plants have compliance issues which need to be addressed, or variations to ensure compliance.

Strategies can be complex and interrelated. This strategy has a focus on setting out a process to **address what gets into the system, reticulation, wastewater treatment and discharge.** When considering these components, thought should be given to related aspects such as tradewaste contributions and reception of septage from rural properties. Overlapping aspects that apply to all components are climate change, system resilience, environmental footprint and social and cultural considerations. There will be the need for further strategies to address climate change and resilience across the District.

4. CRITICAL ASPECTS TO A STRATEGY

A strategy should set a plan as to why and how to do something. In the case of #TheBigWastewaterStory this includes a Big Picture commentary on the preference/desire/willingness/ideas (**what is needed and what is aspired to**) to manage wastewater treatment plant discharges from reticulated sewers in the district. Vital to this is an outline of the approach to developing the engineering and operational aspects of the proposed strategy (**numbers**), and a plan to have the system approved (**approvals**), both internally within council and by the relevant regulatory agencies; these latter two aspects are part of executing the Strategy. This relationship is summarised in Figure 1 below.

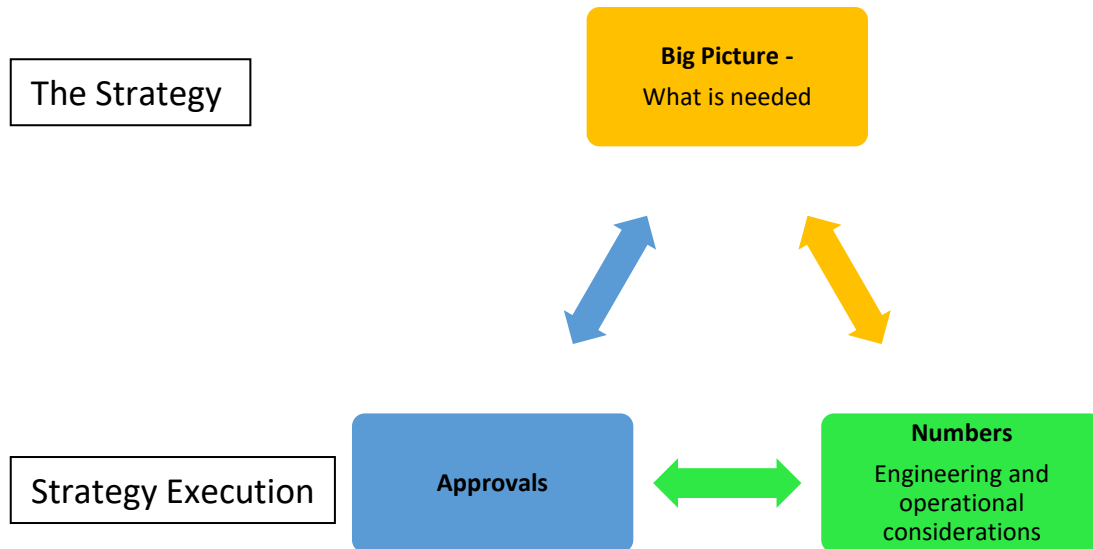


Figure 1: Key Components in The Strategy

This Strategy highlights what is needed and why. The execution of the Strategy is the supporting work coordinating the more administrative tasks, particularly the project management and structure to ensure the necessary **approvals** are acquired (council approval of funds and consents) and engineering and operational considerations (**numbers**) are taken into account. This more administrative function is included in an Execution Plan which is presented as a separate document and sets a blueprint for the Project Team to achieve the Strategy.

4.1 How do other plans, framework, strategies and policies fit in?

This Strategy needs to enable the other key documents, principles and initiatives Council has in place – some of the key supporting plans are outlined below;

- Infrastructure Strategy – currently being refreshed (due 2021)
- [Asset Management Policy 2019](#)
- [Environmental and Sustainability Strategy 2019-2023](#)
- [Social Housing Framework 2019-2029](#)
- [Maori Engagement Strategy 2019-2023](#)
- [Economic Development Strategy and Action Plan 2019](#)
- [Waste Management & Minimisation Plan 2019](#)

It is vitally important that we align the principles and the visions within the documents listed above, and a programme like this acts as the enabler – bringing the wellbeings to life.

5. BACKGROUND

5.1 What communities are covered by this Strategy?

In 2016 CHBDC was issued an infringement notice by HBRC. In early 2017 CHBDC pleaded guilty and the infringement notice was revised in mid-2017. Following this council commissioned reviews into the plants by 'Beca' and 'The Wastewater Specialists', this resulted in mid-2018 CHBDC deciding that wastewater management required a fresh approach.

There was an appetite for, and the need to, look at the bigger picture of what is suitable for the Waipawa WWTP discharge, and this was reflected in a Supplementary Order [response](#) made to the Environment Court to deal with non-compliance issues in September 2019. This required thinking beyond just managing consent compliance, but rather how the Council was managing wastewater. A [package report](#) was produced to support the formal court response.

This led to the establishment of an internal council project to consider wastewater management, not just for Waipawa, but other communities in the District. It was appreciated that the issues facing Waipawa were similar to those facing Waipukurau, and ultimately other communities in the district. This led to an opportunity to consider wastewater management collectively at one time and district wide.

While considering options for Waipawa and Waipukurau, CHBDC had to also consider options to manage Otane. Reticulation of Otane wastewater to Waipawa was considered given:

- the proximity of Otane to Waipawa;
- the potential for Waipawa to become a centralised treatment location;
- pressures on future Otane treatment and discharge options,
- the installation of a water main from Waipawa to Otane was under way and consideration was given to also reticulating wastewater.

Otane now forms part of dealing collectively with Waipawa and Waipukurau and is collectively referred to as the WOW project.

Takapau, Porangahau and Te Paerahi communities also require consideration, primarily as their consents expire in 2021. Based on previous consenting processes, CHBDC had provided a commitment to the community to reconsider options for each community. Engagement with all three communities has identified a preference for land-based discharges, which would mean that the current surface water discharges at Takapau and Porangahau would need to be modified. Further, Te Paerahi (Porangahau Beach) discharges into sand dunes in an area considered waahi tapu, and Council has undertaken to consider alternative locations.

The Central Hawke's Bay area covers some 332,792 ha and has a population of some 14,850 residents in 2019 ([Squillions](#), 2020). While there is a significant rural area, more than half of the District population is concentrated in six key communities which have a reticulated sewer, treatment plant and discharges, and these are all expected to grow significantly over the next 20 years. The District's population is expected to increase by over 60%, with modelled growth in some townships predicted to more than double over this same period if allowed to progress without restrictions. A significant amount of growth is also projected to occur across the

district outside the town boundaries. This also means more industry and enterprises are likely to come to the District.

There is a need to plan for the increased wastewater load from the increased activity in townships across the District. **Table 1** below sets out projected population changes in the six key communities with reticulated sewers.

Table 1: Population projections

Community	Population 2019	Average daily flow (m ³ /d)	Population 2031	2031 % increase	Population 2051	2051 % increase
Waipawa	2,180	1,043	2,507	15%	2,852	31%
Waipukurau	4,580	2,545	5,890	29%	7,540	65%
Otane	710	185	1,151	62%	1,756	147%
Porangahau	210	138	377	80%	731	248%
Takapau	620	153	846	36%	1,137	83%
Te Paerahi	312	80				
Central Hawke's Bay	14,850		18,770	26%	23,980	61%

* Adapted from Central Hawke's Bay District Demographic and Economic Growth Projections 2020-2051 (Squillions, 2020)

* Daily flow values are averages and consider peak wastewater flow periods (i.e. summer months/ school holidays). Average daily flows will likely be greater during these periods and therefore projects need to be designed to accommodate for these higher flow volume periods.

5.2 When will the Strategy be implemented?

Changes and opportunities to improve design, operation and management can occur now. While there are requirements to address pending consenting obligations, there are also opportunities to make changes now ahead of new regulations and to utilise funding potentially available from Central Government.

Regardless of the design and funding options, a key aspect will be to create a system(s) that allows for community growth and highly likely (yet unknown) regulatory changes. This is where staging and modulation of a system are important.

Staging and modulation are also essential to avoid rework and modifications of new facilities and redundancy in infrastructure over time. This also provides opportunities to ensure sufficient funding can be allocated over time and balanced with communities' priorities.

Leading into pre-engagement of the Long Term Plan, the strategy proposed to phase the delivery of the three main projects over a three to ten year programme as outlined through the strategy.

5.3 Who

Developing strategies and implementing changes is a team approach. CHBDC have developed an internal team to review current wastewater facilities and implement changes. This is supported by external experts, in particular Lowe Environmental Impact (LEI) and Beca.

Contributing to this team approach has been community feedback, and in particular the Stakeholder Reference Group formed for engagement and direction setting for the Waipawa, Waipukurau and Otane communities.

5.4 Funding

The implementation of this Strategy comes with a price tag, with significant design and infrastructure requiring funding. While not needing to be addressed in this Strategy, there needs to be an awareness of the differing funding opportunities. These include internal funding from rates (including servicing loan funding), external loans from government agencies and grants from government agencies. Such external funding includes funds from the Three Water's review and Crown Infrastructure Partnership allocation.

There is also potential for third parties to be involved and may include opportunities as to how things are built, operated, and managed. This means that contracts could be let by Council for a third party to provide all or part of a service, from design to operate.

In addition, the water reform process may create further opportunities with coordination and collaboration with other councils and central government agencies.

All of the factors above need to be considered in light of the actual availability of funds and matching of priorities. With will no doubt require staging over time to meet community expectations and regulatory requirements.

6. THE STRATEGY

Strategies take time to define and implement. This document develops, defines and sets out critical elements that need to be considered along the way and form key components for executing a wastewater Strategy across Central Hawke's Bay's currently reticulated communities.

Rural properties and communities with on-site systems are not included in this Strategy, however the overall consideration of treatment facilities allows for septage from onsite systems throughout the district to be received and treated.

The Strategy involves defining a process which breaks down the needed steps and ensures a considered and logical approach is taken. This allows the process of implementing the Council's Vision to be implemented in a more manageable way. The first essential part is drawing a line around what is to be considered. To assist with this, and noting that #TheBigWastewaterStory is a significant programme, the District's six communities have been divided into five **Projects**.

- Project 1 – Otane, Waipawa and Waipukurau
- Project 2 – Takapau
- Project 3 – Te Paerahi and Porangahau
- Project 4 – Residuals
- Project 5 – Loadings and Flow Management

To further assist with management, the delivery of the first three projects will follow a sequence of **Phases**. These Phases include:

- Phase O: Project Management;
- Phase A: Engagement;
- Phase B: Data gathering;
- Phase C: Optioneering/Concept;
- Phase D: Consent;
- Phase E: Design;
- Phase F: Procure;
- Phase G Construct; and
- Phase H: Commission and Operate.

To assist with implementation, each Project is **Staged** to provide for a logical sequence that is dependent on resourcing. Staging refers to the timing and sequence of the Project actions. Staging may occur between phases, or within phases, particularly within the design and construct phases. Staging can be driven by availability of finance, availability of materials and contractors, or by aligning to changes in the regulatory environment. In some cases the Stages require consideration of Options. The relationship of the first three Projects and their Phases is shown in **Figure 2** below.

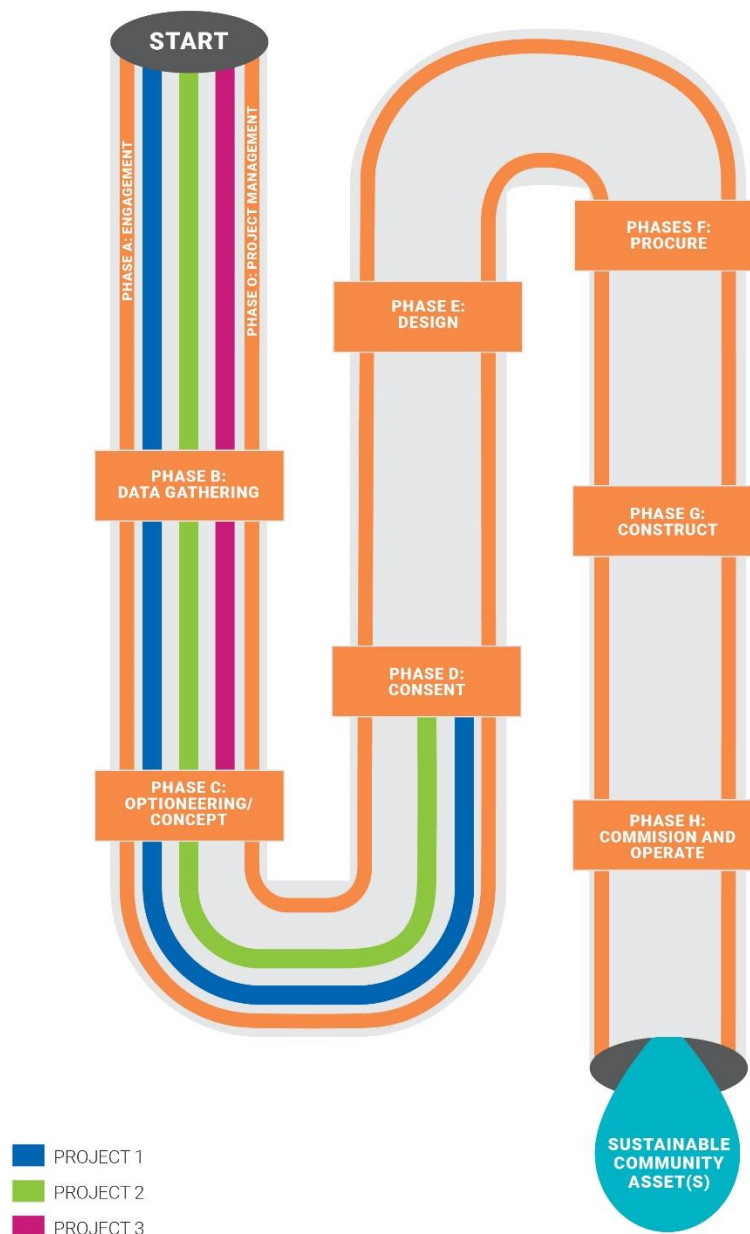


Figure 2: Relationship of Projects, Phases, Stages and Options

Projects 4 and 5 are slightly different in so far as they both contain multiple bodies of work that deal with essentially what goes into the main wastewater systems (**Project 5: Loadings and Flow Management**) and what else comes out of treatment plants (**Project 4: Residuals**).

They have their own Phasing and Stages, with information generated either to assist with understanding **Projects 1 to 3**, or as a result of **Projects 1 to 3**.

7. HOW DOES RESOURCE CONSENTING FIT INTO THE STRATEGY

7.1 Why are Resource Consents needed

Section 15 of the Resource Management Act (RMA) requires all activities that involve discharges that are not expressly allowed or provided for in a regional plan or national environmental standard to require a resource consent. Community wastewater discharges in the Hawke's Bay region require resource consents.

7.2 What Consents are needed

Consents have been granted by the Hawke's Bay Regional Council ("HBRC") for discharges from Te-Paerahi, Porangahau, Takapau, Otane, Waipawa and Waipukurau wastewater systems. The consent status of the six communities is summarised in Table 2 below.

Table 2: Consent Status

	Consent number	Granted	Last date for lodgment*	Consent expires	Discharge into
Te-Paerahi	DP030234La	14-May-12	14-Nov-20 14-Feb-21	31-May-21	Dunes via soakage
Porangahau	DP 030233W	22-Oct-09	14-Nov-20 14-Feb-21	31-May-21	Porangahau River
Takapau	DP180115W DP180124A	10-Dec-18	30-Apr-21 31-Jul-21	31-Oct-21	Makaretu River
Waipukurau	AUTH-113118-04 (W)** AUTH-113834-04 (A)	8-Dec-15	30-Mar-30 30-Jun-30	30-Sep-30	Tukituki River
Waipawa	AUTH-113123-03 (W) AUTH-113839-03 (A)	8-Dec-15	30-Mar-30 30-Jun-30	30-Sep-30	Waipawa River
Otane	AUTH-121814-02 (W) AUTH-121816-02 (W) AUTH-121818-02 (A)	5-Mar-19	14-Nov-41 14-Feb-42	31-May-42	Te Aute Drain Then Papanui Stream

*To provide for continuation of an activity while an application is being process, in accordance with s124 of the RMA, applications have to have been lodged either 6 months or 3 months (with approval) prior to consent expiry.

**This consent was originally granted on the 1st of December 2006, subject to an Environment Court judgement, and subsequently changed in accordance with s127 and s128 of the RMA.

Of note is the Otane discharge consent which has a consent condition requiring a treatment upgrade by 31 March 2021.

A proposed consenting plan has been created and an early programme of proposed consents released to HBRC to pre-empt planned consents and assist with planning.

7.3 Regulatory Instruments

Ultimately discharges are controlled and regulated by the RMA, or various regulations and guidelines developed under the Act.

Of critical importance is the National Policy Statement for Freshwater Management (2017). Variations to this (2019) will see greater requirements placed initially on Regional Councils to change regional plans, but ultimately District Councils to ensure their wastewater discharges meet new water quality requirements.

The RMA also requires the production of regional plans. Specific regional plans applicable at present are:

- The Regional Resource Management Plan ("[RRMP](#)"); and
- The Regional Coastal Environment Plan ("[RCEP](#)").

Only the Porangahau and Te Paerahi communities are impacted by the RCEP. Under the RCEP the Coastal Marine Area ("CMA") extends up the Porangahau River to the Beach Road bridge, so discharges in the vicinity of the Te-Paerahi WWTP will be regulated under that plan.

Discharges outside the CMA (including to water and land) will be considered and regulated under the RRMP. Both plans make provision for wastewater discharges to be Discretionary Activities.

Both plans are operative (RCEP - November 2014 and RRMP – August 2006) but proposed changes to National Environmental Standards and National Policy Statements may see tighter specification of receiving water quality standards introduced into both plans in the next 5 years and environmental goal posts to be moved.

8. WHAT IS NEEDED TO ASSIST WITH IMPLEMENTING A STRATEGY?

8.1 What do we Have (Infrastructure Description)

The following is a very brief summary of the treatment and discharge systems for the six communities.

Table 3: Treatment and Discharge Summary

Community	Treatment	Discharge
Te Paerahi	Oxidation Pond	Sand dunes
Porangahau	Oxidation Pond	Wetlands and then Porangahau River
Takapau	Oxidation Pond	Wetlands and then Makaretu River
Otane	Oxidation Pond and floating wetlands	Te Aute Drain then Kaikoura Stream
Waipawa	Oxidation Pond and floating wetlands with filtration and UV	Waipawa River
Waipukurau	Oxidation Pond and floating wetlands with filtration and UV	Tukituki River

Table 4: System Limitations

Community	Working Well	Not Working Well
Te Paerahi	Largely compliant	High flows, TSS peaks, some BOD peaks Tangata whenua objection to siting.
Porangahau	Largely compliant	High flows, TSS peaks & BOD removal Surface water discharge not desired.
Takapau	Largely compliant	High flows Surface water discharge not desired.
Otane	BOD removal	Very high wet weather flows, ammonia removal, floating wetlands. Surface water discharge not desired.
Waipawa	Phosphorus and BOD removal	Ammonia removal, floating wetlands, lamella clarifier, sand filter, UV, very high wet weather flows. Surface water discharge not desired.
Waipukurau	Phosphorus and BOD removal	Ammonia removal, floating wetlands, lamella clarifier, sand filter, UV, high wet weather flows. Surface water discharge not desired.

The general layout of the treatment systems is shown in Figures 3 to 5.

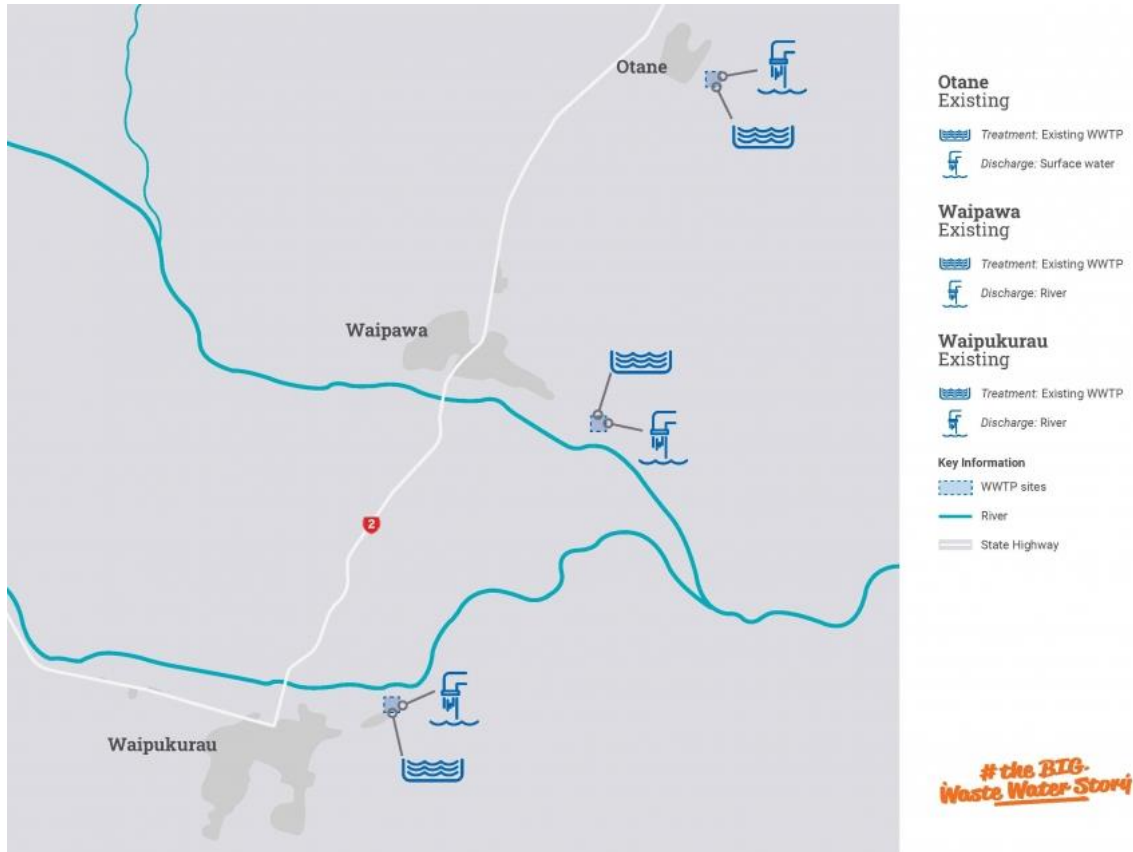


Figure 3: General Layout of Waipawa, Otane and Waipukurau Discharges



Figure 4: General Layout of Takapau Discharge

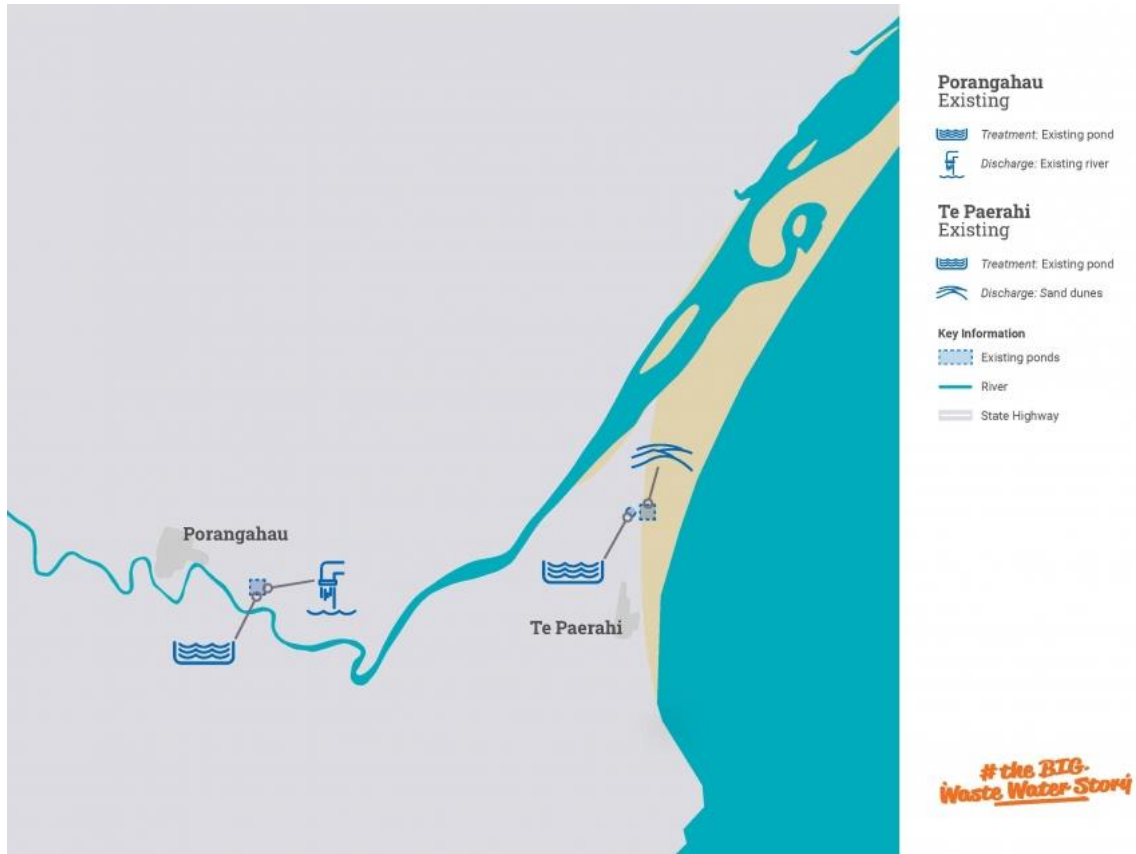


Figure 5: General Layout of Porangahau and Te Paerahi Discharges

8.2 What's Required to be Achieved

Territorial Authorities such as CHBDC have obligations under the Local Government Act (LGA) to develop, manage and sustain wastewater facilities for their communities. Specifically, the LGA states:

14) Principles relating to local authorities

1) *In performing its role, a local authority must act in accordance with the following principles:*

...

*(h) in taking a **sustainable** development approach, a local authority should take into account—*

(i) the social, economic, and cultural well-being of people and communities; and

(ii) the need to maintain and enhance the quality of the environment; and

(iii) the reasonably foreseeable needs of future generations.

195) Discharge of sewage

(1) The discharge of domestic sewage into a sewerage drain under the control of a local authority in accordance with the bylaws of the local authority, and the discharge of trade wastes into a sewerage drain in accordance with trade wastes bylaws, is not a breach of—

(a) this Act; or

(b) the Resource Management Act 1991 or regulations made under that Act; or

(c) the Building Act 2004 or regulations made under that Act.

(2) However, this section does not absolve a local authority from liability for the discharge, in contravention of this Part or of the Resource Management Act 1991, of a contaminant from a sewerage drain under the control of the local authority.

(3) The Minister of Health may, by notice in the Gazette, declare that a bylaw made by a local authority and specified in the notice is a trade wastes bylaw for the purposes of this section.

Sustainability has multiple considerations. This includes economic, social, cultural and environmental; and much more than the historic focus on economic and environmental sustainability.

Community engagement regarding wastewater facilities has historically focused on the need to regulate and approve wastewater discharges through resource consent processes. While this is critical, equally so is the operation and financing of appropriate systems. Care is needed to ensure the right system is located in the right place and does the right job. Following this, the system can then be consented.

The impact of costs also needs to be considered when choosing a wastewater system, in that while a system **should be affordable** it should also seek to **not be a patch fix** and it should be **forward thinking**. This effectively means that the resource consenting for a discharge should

be for an appropriate system to meet the community's needs, and not solely focused on immediate compliance and environmental outcomes.

A critical consideration when considering costs is the operational requirements, with the need to ensure low capital and high operational costs are compared equally with high capital and low operating cost options. Such an approach needs to consider the financial implications over a period of time (e.g. 30 years); often referred to as a Whole of Life cost what provides for interest rate charges and borrowing potential over the life of an asset.

Further, the resource consenting process involves community participation, and part of that is considering the effects of a proposed discharge. **Adopting an approach that sees decisions made on potential options, particularly sites and methods, prior to a consenting process helps to streamline a consent process.** This is achieved through robust and appropriate community engagement **before resource consents are lodged.** The aim is that the community's desires and concerns have been heard and addressed in the option stages, before the necessary consents are applied for.

Community engagement and approval of wastewater options and changes is **not required.** However, it is considered best practice for achieving the necessary LGA and RMA functions. Equally, engagement with Maori is not essential, but as partners under Te Tiriti o Waitangi consultation with tangata whenua is desirable and in-line with best practice.

The regulatory environment could be seen as creating limitations for a strategy in that it is uncertain as to what is the target. This is particularly relevant with current freshwater reforms (as a result of the implementation of the National Policy Statement for Freshwater Management), funding challenges and opportunities coming from the Three Waters Reform process, and the implementation of Taumata Arowai – Water Services Regulator Bill. However, this Strategy actually takes the opposite approach and embraces the change in that we know things will change and we have to allow ongoing and continual improvement with how we manage and implement wastewater related infrastructure.

8.3 Is Engagement Needed

Iwi

An approach that provides for iwi engagement in developing wastewater solutions is considered to be critical to development of a suitable system. Specifically, when progressing through a resource consent process, Part 2 of the RMA (Sections 6, 7 and 8) requires consideration, regard and taking into account of the principles of Te Tiriti o Waitangi. Early, meaningful and open engagement is essential to demonstrate the fulfilment the Council's obligation to their treaty partners. An approach that provides for iwi engagement and participation in goal establishment in developing our wastewater solutions is considered to be vital to development of suitable systems for Central Hawke's Bay. This has been provided for the three wastewater projects (Projects 1 to 3).

Continuation of the surface water discharges for all communities is potentially consentable from an environmental stand-point, but there may be challenges from tangata whenua and the wider community. There is a preference by iwi that the surface water discharges are ceased (considered to be culturally abhorrent) and if they were to continue there would need to be strong justification that they are the **Best Practicable Option (BPO)**. The unacceptability of surface water discharges is addressed in a report commissioned that provides an overview of the Maori Worldview on wastewater management (How, 2017).

The Hawke's Bay RRMP section 5.9.4 - Tukituki Implementation Plan, outlines the importance of collaboration with iwi and Tukituki hapu to develop a monitoring framework as follows:

3. To enable assessment and monitoring of the cultural values and mauri of the Tukituki Catchment the Hawke's Bay Regional Council will:

(a) Resource, subject to POLTT16(5), and assist iwi and Tukituki hapū in the development of a mauri monitoring framework, including the use of wānanga with relevant technical experts on at least the following:

- i. Marine and coastal ecology;*
- ii. River ecology and fish passage;*
- iii. Water quality (e.g. nitrate/nitrogen) and quantity; and*
- iv. Monitoring methodologies (e.g. mauri model, CHI, State of the Takiwa); and;*

(b) Collaborate with iwi and Tukituki hapū to develop and implement a monitoring programme that gives effect to the mauri monitoring framework; and

(c) Work with the iwi and Tukituki hapū to jointly report annually on the outcomes of the monitoring and any recommended actions to Hawke's Bay Regional Council; and

(d) Incorporate the outcomes in the Plan Effectiveness Report.

The Central Hawke's Bay District Plan ([Proposed 2019](#)), and in particular in section 4.8, sets out the importance of engagement with iwi.

The key message that can be taken from the RRMP and the District Plan is if the existing discharge systems into surface water are to be continued, and for that matter any discharge, then **there will need to be engagement with tangata whenua and the affected community in determining the suitability of the treatment and discharge system.** Therefore, the Strategy needs to take on board this direction, particularly as it relates to the need for engagement.

Projects 1 to 3 respectively, have engagement as key steps throughout the project phases, with mana whenua and iwi engaged leading into a resource consenting process, and this will form an integral part of the consenting process, with key input documents like a 'maori world view' and a 'cultural impact assessment' forming an important part of the consent application for each project.

Community

Leading on from the decision to consider wastewater management across the district was the initiation of a **Wastewater Reference Group** (Reference Group) to focus on development of solutions initially for Waipawa and Waipukurau, and then incorporating Otane. It was considered that solutions and experiences from Waipawa and Waipukurau could inform management solutions for the other communities, however, direct engagement with those communities should still be undertaken separately.

Engagement to date

Active Council engagement on wastewater issues with community has spanned more than 15 years, with a focus on Waipawa and Waipukurau. More recently, engagement with the wider community started in 2018 with the formation of a Reference Group to discuss issues surrounding primarily Waipawa and Waipukurau. The group consisted of community members and councillor representatives. Staff and technical advisors also contributed. The intent of this group was to identify issues and options for wastewater management.

While there are multiple wastewater options, the intention was the Group would identify key aspects that needed change and to identify potential solutions. This process was intended to lead into the development and identification of a solution to satisfy the requirements of the Supplementary Order required by June 2019.

Options developed in conjunction with the Group were shared with the wider community in 2019, and there was general consensus of the Group and council proposals. The Group still exists, and have recently been updated, albeit with a discussion now including Otane.

Within the last 12 months engagement has also restarted with the Takapau, Porangahau and Te Paerahi communities. These three communities have a long history of having wastewater solutions discussed with Council. The example being the [Long Term Wastewater Strategy for Porangahau and Te Paerahi](#) (2012) produced between Council and the Porangahau Community.

Our vision has been complemented by our wider business strategy of **Durable infrastructure** which outlines principles of “dig once” and “no bandaids”. This also sits with **Smart Growth** and **Environmentally Responsible**.



The wastewater strategy is articulated by the priority actions described by the community and reference groups as outlined below. In addition, there then needs to be addition of things like “Phasing of investment” to achieve financial/ affordability outcomes.

Key messages coming through from the engagement include:



Ongoing engagement is occurring with each community and forms a critical part of the ongoing [#TheBigWastewaterStory](#) strategy. Linked into this is now the development of refined options and seeking feedback through the Long Term Plan engagement process.

What is Informing the Strategy

The Strategy is best seen as delivering and implementing the vision proposed by the Waipawa, Otane and Waipukurau Reference Group, being:

Our effluent is treated in a sustainable way that creates a resource, protects our environment, and continues to do so for generations to come.

While this Vision was developed with the Waipawa, Otane and Waipukurau Reference Group, it has been socialised with the Takapau, Porangahau and Te Paerahi communities and each group has concurred with the sentiment of the Vision.

Despite all community discharges having a largely indistinguishable impact on the river system, albeit with current consent non-compliance issues, there will be growth in the district and an increase in expectations surrounding water management. This will necessitate a need to improve effluent quality and its management over time. There is also a strong community desire or aspiration to remove direct surface water discharges, a view which is consistent across the wider district and strongly held by iwi. Therefore, either the discharge method needs to be changed (ideally away from the rivers) or fundamentally different treatment plants need to be installed at each community.

In the case of all communities there is a clear message – wastewater out of the river, improved treatment and beneficial use of treated wastewater. The ability to achieve this target is finance driven and at this time the delivery of this ultimate solution is simply unaffordable to the community. Despite the current unaffordability of the aspirational target, there are a number of intermediate design and improvement steps which can be undertaken in the next three to 10 years to improve discharge quality and the ability to meet compliance requirements and prepare for delivery of the aspirational goals of the future. Identification and access to alternative funding sources forms part of the Strategy. As funding becomes available the staging discussed in Section 5.4 sets out a clear pathway for works to deliver the Strategy.

A summary of the proposed stages for each Project is detailed below. These summaries are effectively the Best Practicable Option (BPO) for each project, albeit ongoing decisions need to be made as designs are advanced, consents are approved and funding is approved. Potential funding requirements are also detailed.

9. WHERE ARE WE AT WITH OPTIONS FOR EACH PROJECT?

9.1 Scope of Projects 1 to 3

Projects 1 to 3 deal with wastewater treatment and discharge management. They are the focus of this Strategy and a lot of the necessary background information has been provided in earlier sections. To date a lot of background work and community engagement has occurred, and this is consistent with and has assisted to inform this Strategy. This work to date has effectively allowed the development of concepts that will result in the Best Practicable Options to be established for each Project. Detailed below is a summary of what is proposed for each Project.

Project 1: Waipawa - Otane - Waipukurau

Short term – less than 2 years

- Reticulate Otane to Waipawa
- Establish rapid infiltration system at Waipawa
- Minor treatment plant upgrades

Medium term – less than 5 years

- If appropriate design pipeline from Waipukurau to Waipawa
- Expand the rapid infiltration system at Waipawa

Longer term – less than 10 years

- If appropriate, build new treatment plant
- Decommission Otane treatment plant
- Decommission of old treatment facilities

An example of the proposed staging below;

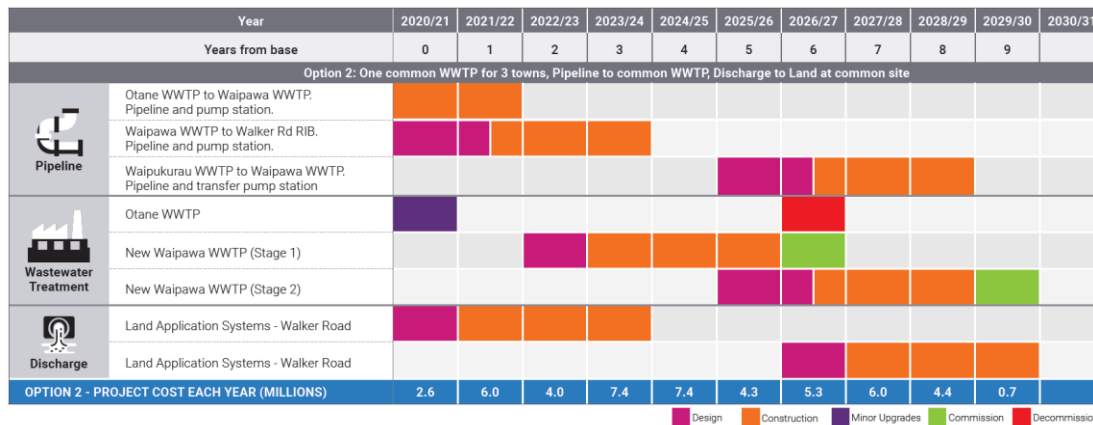


Figure 6: Proposed Phasing for Example Option – Project One

Project 2: Takapau

Short term – less than 2 years

- Minor treatment upgrades
- Develop irrigation system

Medium term – less than 5 years

- Provide further storage (if required).

An example of the proposed staging below;

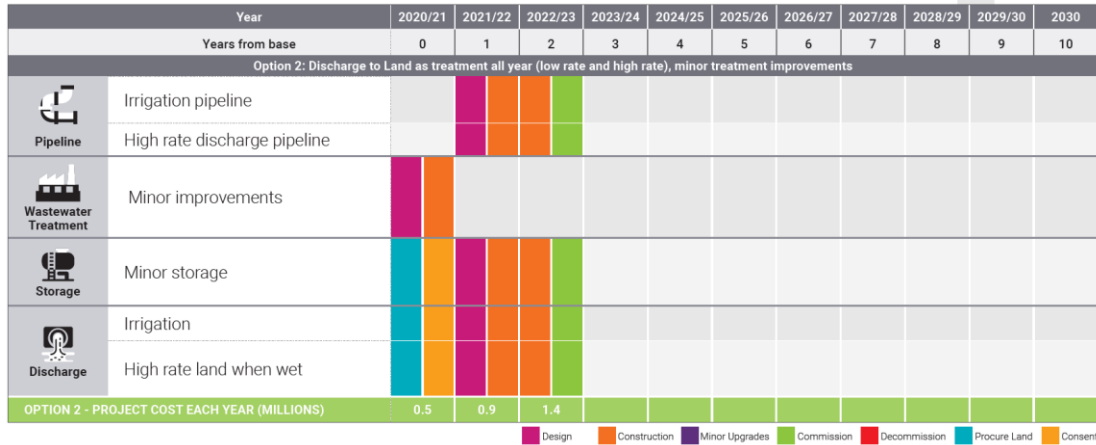


Figure 7: Proposed Phasing for Example Option – Project Two

Project 3: Porangahau/ Te Paerahi

Short term – less than 2 years

- Acquire land for irrigation
- Pipe Te Paerahi wastewater to a new irrigation site

Medium term – less than 5 years

- Establish irrigation for both Te Paerahi and Porangahau
- Cease discharge to Te Paerahi sand dunes
- Build storage
- Reduce discharges to the Porangahau River

Longer term – less than 10 years

- If appropriate, build a new treatment plant
- Develop alternative wet weather discharge
- Decommission unused infrastructure

An example of the proposed staging below;

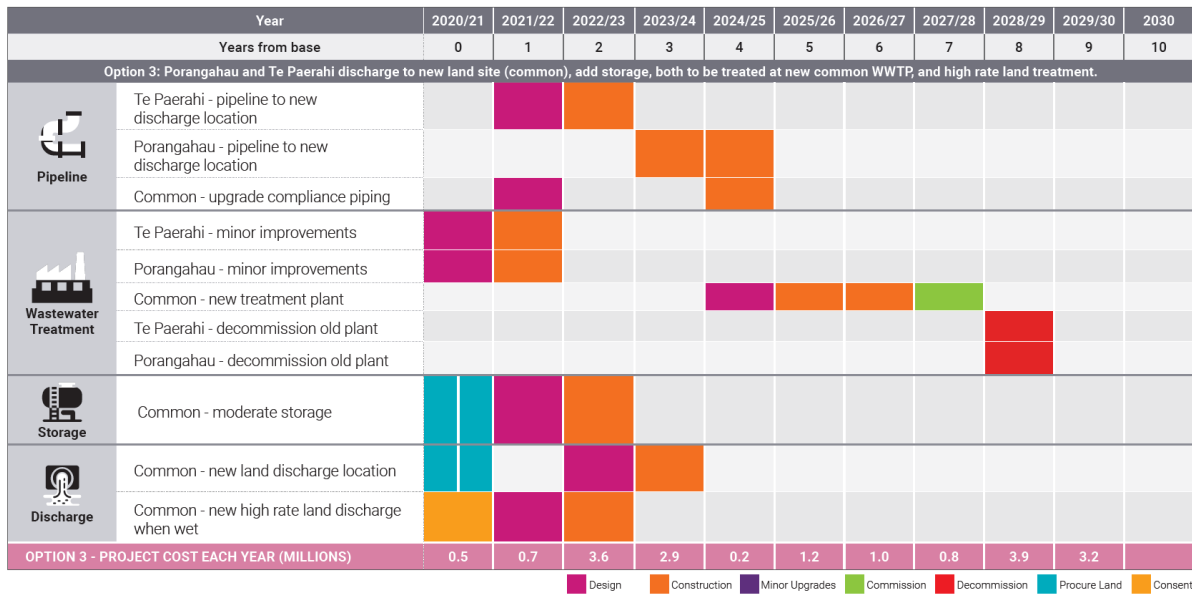


Figure 8: Proposed Phasing for Example Option – Project Three

Project 4: Residual Management

A focus of the discussion to date, and with the wider community, has been with managing the treated water. Running in parallel is a critical, and equally important, design discussion about managing residual products that can be generated from the treatment systems. This includes sludge from the bottom of ponds, sludge from new treatment plants, screenings and grit.

More sophisticated treatment systems may produce greater residuals, and potentially require different ways for it to be managed. As with the treated water, there are opportunities to manage the residual as a resource, which is in contrast with current practices that see it stockpiled with no intended use or landfilled. The forward options look to use the residual material as a resource.

The development of Project 4 is divided into current programmes and future programmes. The current programmes are largely operational while the future programmes are subject to further design work associated with Project 1 to 3.

Current programmes:

- Remove current dewatered sludge stockpile at Waipawa and Waipukurau – ideally applied to land.
- Desludge Waipawa and Waipukurau ponds.
- Apply for consents as needed.
- Develop a dedicated residual management strategy.

Future programmes:

- Plan for biosolids production from residuals at new and upgraded treatment plants.
- Identify future end use/disposal pathways and hence alignment of residual handling technology to suit.
- Interface with tradewaste review project to manage contaminants that would be detrimental to future reuse options.
- Decommission ponds systems as new treatment plants come online.
- Base case solution is assumed to be creation and management of a dewatered biosolids monofill cell on site at Waipawa.
- Apply for consents as needed.

Project 5: Loadings and Flow Management

A key aspect in managing wastewater is managing what needs to be treated and then discharged; and this is achieved by knowing and controlling what is coming into a treatment plant. Volume and composition are two key groups of parameters that help to decide what the treatment plant does and how it operates. While the treatment can modify the composition, knowing the volume is essential as it helps to inform the nature of discharge opportunities.

Key influences of volume and composition (Loadings and Flow Management) are:

- Reticulation management, and particularly the management of infiltration and ingress (I and I) i.e. leakage into the sewer network; and
- Trade waste contributions, which include industrial contributions and the likes of septage reception (septic tank sludges).

All community wastewater systems must manage reticulation and trade waste impacts. Understanding their nature determines the treatment required and discharge impacts. This can change over time, as communities grow and sewer networks expand, and as industry is attracted to communities.

All of the six Central Hawke's Bay communities will have some degree of reticulation I and I. Understanding it and having a plan to reduce where appropriate is critical. This may change over time as reticulation infrastructure ages and renewal programmes take effects.

Waipukurau is the community that is currently most influenced by industrial discharges, with current industry accounting for more than 50 % of the community's organic load to the treatment plant and less than 15 % of the flow. Subtle changes in the volume and composition can have a significant impact on treatment plant selection and design. A further important aspect is having confidence in the potential for changes over time, requiring growth projections of not just the residential population to be considered, but also changes in industry.

The nature and type of treatment plant required, as influenced by reticulation and tradewaste, then influences the management of residuals, as set out in **Project 4**.

Current programmes:

- Tradewaste review programme/ Tradewaste bylaw review.
- I and I programme.
- Reticulation renewals.
- Growth planning including 2020 CHBDC Spatial plan alignment.

Future programmes:

- Tradewaste development strategy.
- Reticulation and sewer management strategy.

10. REFERENCES

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