Tā Tātou Whakataki Totoka Koiora

Te Whakarāpopototanga o te Pūrongo Tūhonohonotanga 2026

Our Biosolids Challenge

Engagement Summary Report 2026

Paengawhāwhā 2026 | April 2026

Watercare

Ngā ihirangi | Contents

1 Whakarāpopototanga o te Pūrongo
Report Summary

Watercare is Auckland's water and wastewater utility, providing safe and reliable water and wastewater services to around 1.7 million Aucklanders. One of our core roles is to safely collect, treat, and manage wastewater for the city, protecting public health and the environment.

Auckland's biosolids are a by-product of the wastewater treatment process, which need to be managed responsibly. Auckland needs to plan for how biosolids from the Māngere Wastewater Treatment Plant (MWWTP) will be managed in the future as the current solution of rehabilitating Te Motu a Hiaroa/Puketutu Island with biosolids will be completed by 2035. Early planning helps ensure our wastewater services remain safe, reliable, and sustainable for decades to come.

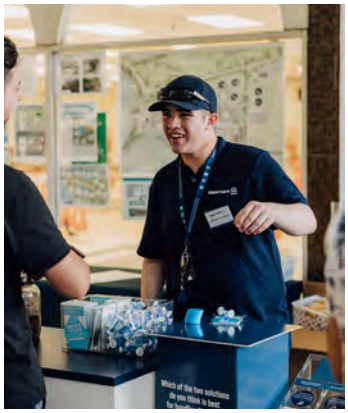
In late 2025, we asked Aucklanders and our mana whenua partners to share their views on the biosolids challenge. Our early engagement included workshops, surveys, community events, and online activities. The purpose was to help the people of Tāmaki Makaurau understand the issue and to learn what matters most to them.

This summary explains the biosolids challenge, who we spoke with, what we heard, and how this feedback will guide the next phase of planning. It reflects our commitment to involving Aucklanders early, listening carefully, and considering environmental, cultural, social, and economic factors in sound decision-making.

This is not a technical assessment or a decision about the future biosolids solution. It is a summary of early engagement and how it will inform the work that comes next.

Thank you to everyone who shared their thoughts and ideas.

Your feedback is helping shape the direction of this project and will continue to guide the decisions we make together for Auckland's water future.



2 Te Kaupapa: Tā tātou whakataki totoka koiora
The Project: Our biosolids challenge

Every time you flush or shower, your wastewater begins an important journey. It travels through a network of pipes to a treatment plant, where it's carefully cleaned before being returned to nature. During this treatment process, soil-like material called biosolids are produced. By 2035, we'll need a new way of managing biosolids in Auckland – so planning is getting underway now.

What are biosolids?

When wastewater is treated it is separated into two parts; water and solids. Each is treated in a different way, the water part is cleaned and treated before it is safely returned to the environment. The solid part is biosolids that come from treated wastewater (sewage) and the naturally occurring microorganisms (or 'good bugs') that help clean our wastewater. These microorganisms play an important role by breaking down organic matter and nutrients like carbon, nitrogen, and phosphorus. During treatment, this material goes through a digestion process (similar to composting). This produces methane gas, which is captured and used to generate energy, which we use to run the treatment process. The remaining stabilised material is what we call biosolids.

In Auckland, we create 175,000 tonnes of biosolids every year. That is the equivalent of 365 jumbo jets to dispose of every year!

Biosolids have special characteristics that mean careful consideration must be taken in their disposal or reuse:

- they can contain very low concentrations of pathogens and contaminants, including heavy metals, microplastics and forever chemicals like PFAS
- they can be smelly
- about 75 to 80 percent of biosolids is water (like most foods)
- they have the potential to be reused as fuel or fertiliser, but the preparation takes energy and resources.

How are we managing biosolids today?

Biosolids operation on Te Motu a Hiaroa (Puketutu Island).

All of the wastewater treatment plants of Tāmaki Makaurau produce biosolids. We have a range of options available for their disposal, which include trucking them to certified commercial landfills or turning them into compost for use as a fertiliser. While these have been serving us well, the capacity of these options doesn't meet our servicing requirements from the Māngere WWTP so we need to explore other options for managing biosolids in the long term, to ensure we have reliable and resilient servicing solutions in place for our growing city. At our largest wastewater treatment plant in Māngere, where three quarters of wastewater in Tāmaki Makaurau is treated, we are using biosolids to rehabilitate an area on Te Motu a Hiaroa that was quarried from the 1950s until the early 2000s.

Each day, we truck more than 400 tonnes of biosolids to the island. The biosolids are tipped into pre-constructed cells in the former quarry and covered over with earth at the end of each day.

What is the challenge ahead?

Right now, we have a successful system in place, but it won't last forever. By 2035, the rehabilitation project on the island will be complete and Auckland will need a reliable solution in place that is capable of handling more than 175,000 tonnes of biosolids each year.

Over the next year, we'll be assessing our options for managing biosolids and we want you to help shape our plan.

Each approach has benefits and trade-offs. That's why your feedback matters – because it will help us to understand what Aucklanders value most as we decide on a solution.

What are the options for the future?

Biosolids can be used and disposed of in several ways. While there are some beneficial re-uses, most cannot be carried out at the scale we will need to handle the biosolids of Tāmaki Makaurau.

We need the solution to be:

- capable of handling more than 175,000 tonnes of biosolids each year
- already proven as reliable, at a similar scale, for at least five years
- able to be consented and operational by 2035.

We also need to consider:

- mana whenua feedback on our options
- public feedback on our options
- emissions
- transportation
- location
- impact on the environment
- cost.

What are our primary options?

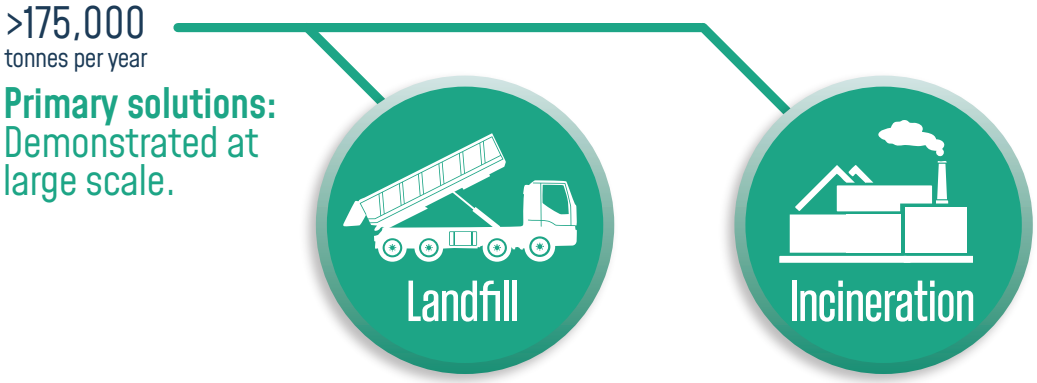
The two primary options capable of handling the volume of Auckland's biosolids, and that can be developed in the next 10 years, are a new landfill and a new incineration facility. We may select one option, both options, or combine one of them with a supplementary solution.

New biosolids landfill

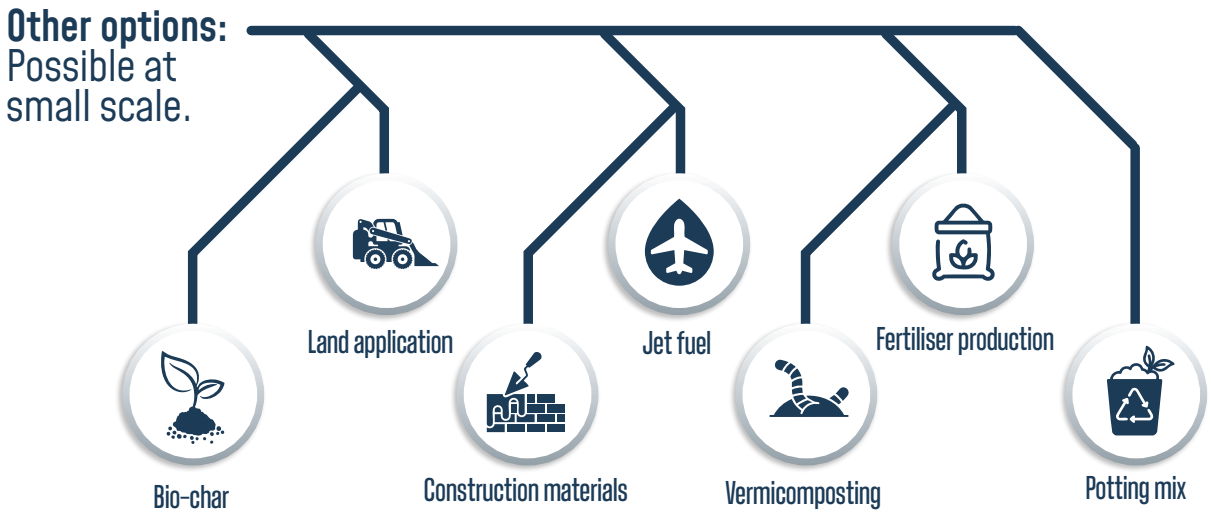
We would need to find a new location for a bespoke landfill capable of handling the quantity of biosolids we produce at Māngere. This would likely be similar to our current operations at Te Motu a Hiaroa.

Incineration

While biosolids incineration is commonly used around the world – particularly in Europe and the United States – it is not commonly used in Aotearoa. However NZ has many examples of woody biomass incineration, for example at dairy processing facilities, and paper/pulp/timber processing facilities. A new incineration facility would need to be built to manage biosolids.



What are our other options?



Land application

Another option we're exploring is land application, which involves spreading a thin layer on the surface of soil, or injecting it into the soil. However, this would need to be in addition to the primary solution of either landfill or incineration due to the volume of biosolids Auckland produces.

Key considerations around land application:

- it makes good use of the nutrients in biosolids by fertilising soil and therefore meets circular economy principles
- it relies on market demand and would have significant seasonal fluctuations
- it's a complex approach that's relatively new in Aotearoa.

Biosolids contain contaminants such as PFAS and microplastics at very low concentrations. It's worth noting that conventional compost and fertilisers can also contain these.

Emerging technologies

There are other ways to reuse biosolids, but these are either experimental or suitable only for smaller-scale applications. Examples include:

- Bricks or construction materials made from treated biosolids.
- Biochar production, which can improve soil and capture carbon.
- Future applications, including advanced soil treatments and industrial uses.
- Producing aviation fuel from biosolids through a process called hydrothermal liquifaction is in early stages of development

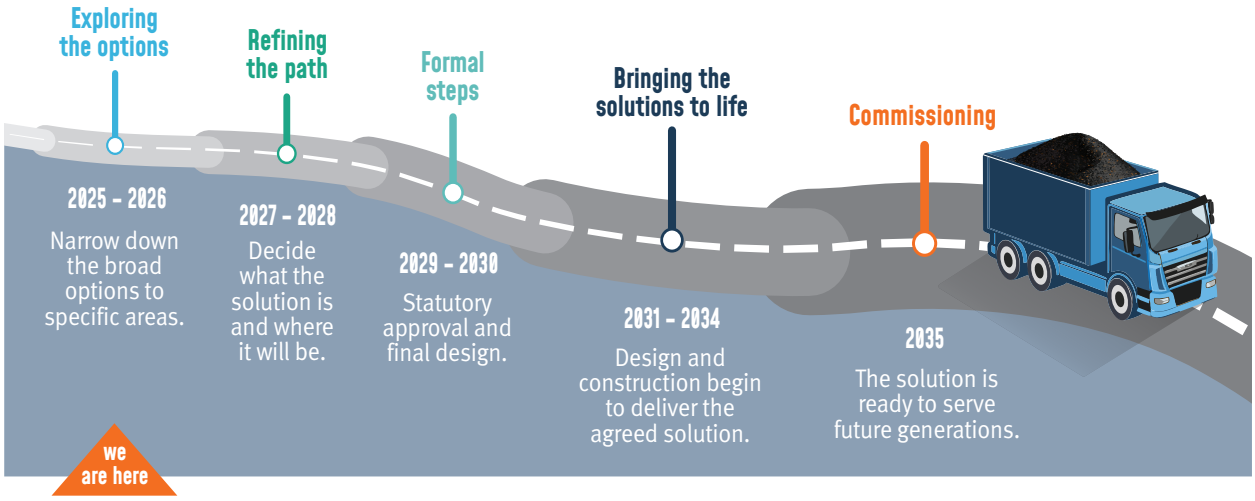
While these approaches cannot currently handle all of Auckland's biosolids, we continue to explore them as solutions for our smaller wastewater treatment plants.

What's the timeline?

Planning a new biosolids solution takes time. Over the next decade, we will move through technical investigations, option development, assessments, design, consenting, funding processes, and public consultation before a final solution is confirmed.

This report sits at the very beginning of that journey. It captures early engagement insights, not technical analysis or decisions, and helps develop tools and resources, understanding what information we need to prepare, and how we involve Aucklanders and mana whenua in the years ahead.

To find and deliver the right solution for future biosolids management, we have developed a 10-year plan:



Families consider what to prioritise when it comes to a biosolids solution

3 Ngā mōhiohio e hiahiatia ana e mātou
What we want to know

Our early engagement focused on lifting awareness, building understanding, and involving Aucklanders in the biosolids conversation through workshops, community events, surveys, and digital engagement.

We aimed to explain what biosolids are, why they matter, and how they relate to Auckland's water future. This early phase was about creating visibility, being transparent, and building trust by showing that the biosolids challenge is 'everyone's business'.

Our conversations focused on four key areas:

We wanted to learn:

- what people already understand
- where the knowledge gaps are
- what information will help people take part in future discussions

We asked people:

- what matters most to them
- what their biggest concerns are about a new biosolids solution
- what opportunities they see
- what they want us to consider as options are developed

We wanted to understand

- early views on the two viable long-term solutions: a purpose-built landfill, a purpose-built incineration facility
- what information people would need about the trade-offs to help assess them properly

We wanted to understand:

- what information people need to stay involved
- how we can make the process clear and easy to follow
- what tools or formats would support meaningful participation

How we reached people

We engaged with a wide cross-section of Aucklanders through a blend of kanohi ki te kanohi (face to face), community-based, representative, and digital engagement methods to ensure the engagement was accessible to a broad audience with opportunities for meaningful early input.

- Mana whenua - Kanohi ki te kanohi workshops and discussions provided opportunities to engage with our partners for early input on values, concerns and priorities.
- Auckland public: Community events, including a large family friendly event at Māngere and drop-in conversations at local events. We built activities encouraging people to share ideas and feedback including token drop surveys and "What do you think?" boards to capture ideas.
- Bill payers, youth and representative audiences: Surveys targeting a broad cross-section of Aucklanders and encouraging engagement with younger audiences and other demographic groups to capture a wide range of views.
- Workshop participants: A representative group of the Auckland public to reflect a range of Auckland perspectives and in-depth, facilitated discussions to explore issues and trade-offs.
- Social media and digital engagement: Digital channels were used to increase visibility and awareness with materials designed to reach people who may not attend in-person activities.

Watercare bus stop for tours of Te Motu a Hiaroa: all aboard! Information was provided throughout the experience.

4 Te tūhonohono, tōna whānui me te reo
Engagement, reach and representation

The feedback received represents a wide range of community voices and perspectives. The summary below shows the scale, reach, and diversity of participation across the engagement period.

Engagement at a glance: Community engagement for the biosolids challenge ran from 1 - 30 November 2025

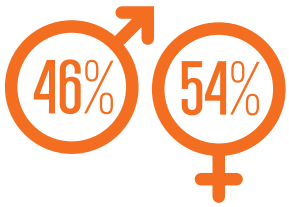
Engagement statistics

- Tapped In newsletter (**440,000** households)
- **43,000** people reached through social media
- Community event **1000 +** visitors
- **372** people dropped tokens
- Two surveys with over **2,000** responses
- Deliberative workshop

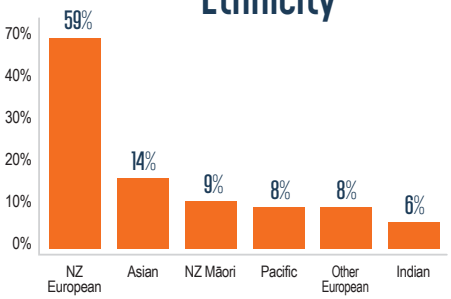
Survey demographics

*total survey responses, n=2,230

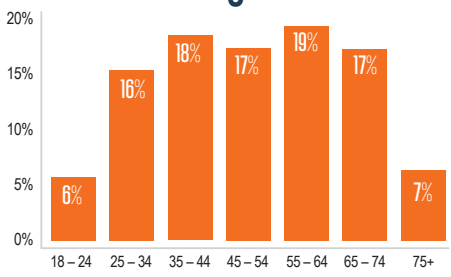
Gender



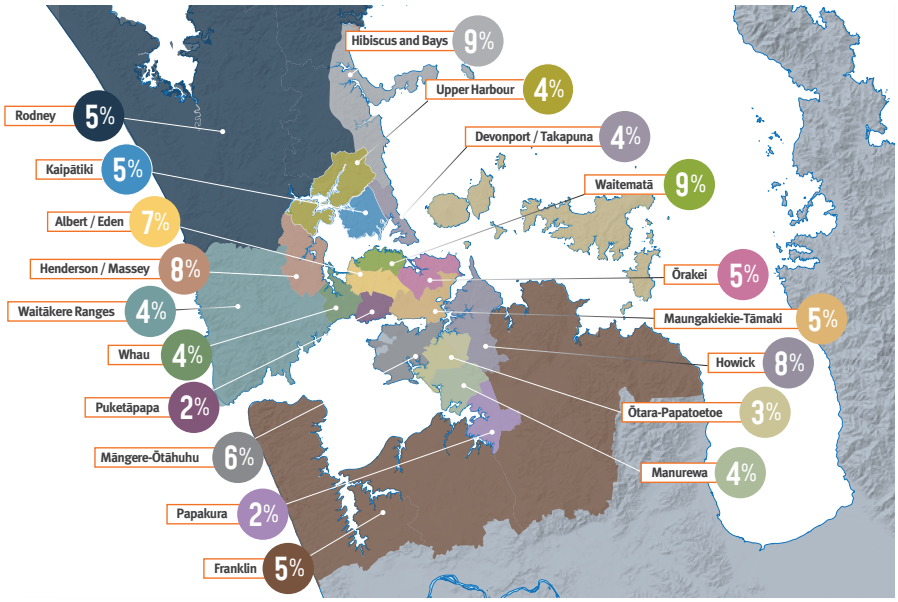
Ethnicity

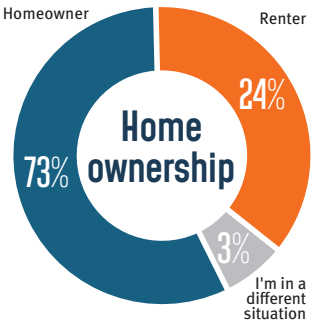


Age



Respondents to our survey by Local Board area





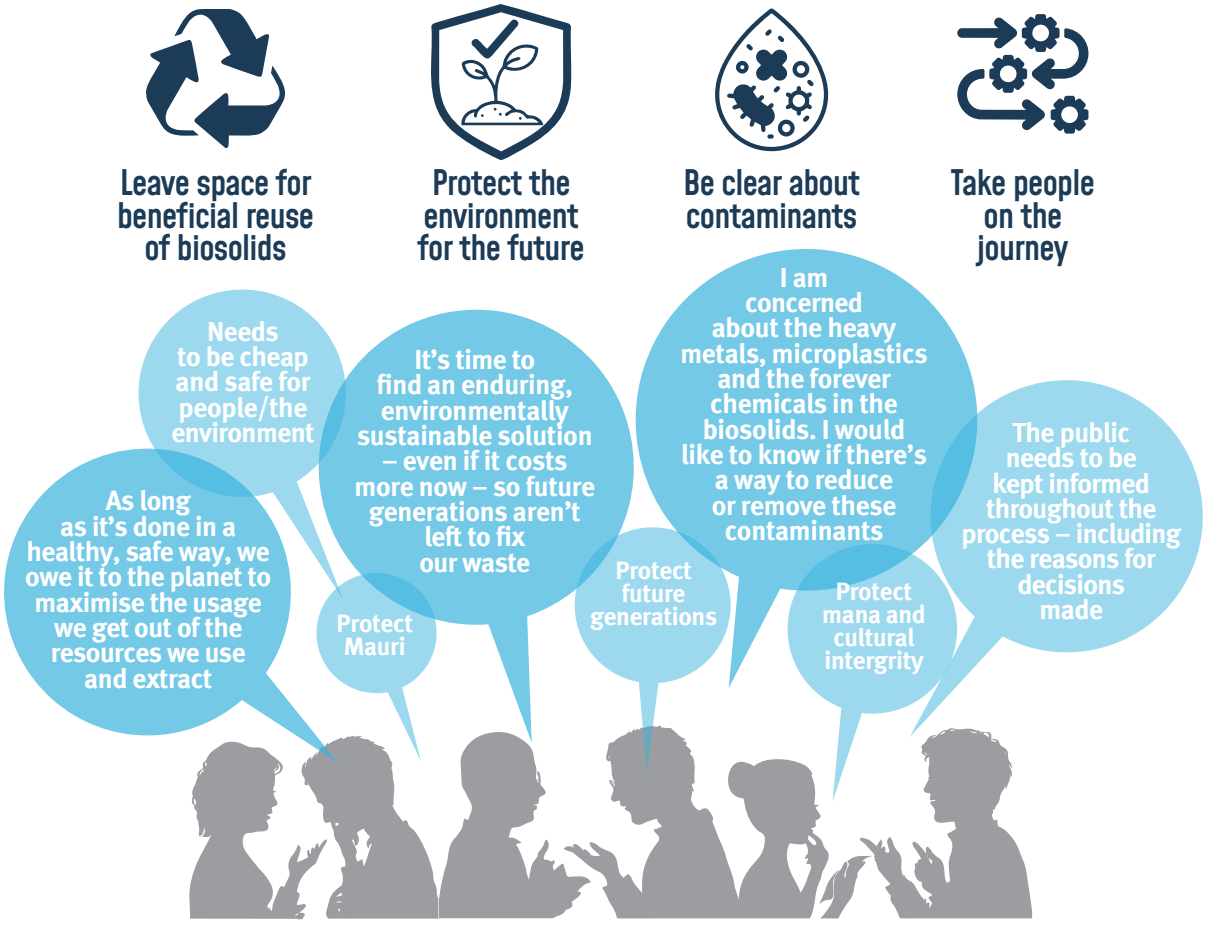
5 Tā mātou i rongo ai
What we heard

The feedback revealed four clear and consistent themes that cut across different perspectives and communities. Together, these themes highlight what people care about most, the outcomes they value, and the expectations they have for how biosolids should be managed in the future.

These themes provide an important foundation for understanding community priorities and for shaping how future biosolids solutions are considered and communicated.

The feedback showed that people place high importance on protecting human health and the environment, effectively managing contaminants and odour, and carefully addressing local impacts. People also emphasised the need for affordability and long-term, sustainable outcomes. People want to assess potential solutions based on their overall value, the benefits across the full lifecycle, and the outcomes delivered for future generations.

These insights tell us that Aucklanders value being involved in conversations about how biosolids are managed and they want to know more. As the programme progresses, we will continue to engage with and inform Aucklanders by providing information about the proposed biosolids solutions based on these four themes.



The four themes have been shortened to provide a clear header for pages 13-16 and are used as a quick reference at the top of each page. The words shown in ***bold italics*** indicate the section you are currently in.

Whakamahia anōtia Reuse	Taiao Environment	Parakino Contaminants	Kia mārama Transparency

Kia āhei tonu te utu—he mātāpono taketake
Affordability as an underpinning principle

Across all engagement activities, we heard that affordability must be at the core of the programme and solution evaluation. Communities want us to manage costs carefully and make responsible, cost-conscious decisions with public money. With heightened awareness over infrastructure costs in Auckland, people are looking for transparent evidence that the value they are receiving is worth the money they are going to pay.

Affordability emerged throughout all four themes, with people wanting us to consider:

- Value for money and consideration of the total cost of operations
- Manageable investment
- Investment into a solution that delivers better long-term outcomes

What we heard

Keep it affordable, manage the finances carefully and minimise costs for today's and tomorrow's billpayers.

Costs should not override environmental protection or long-term safety.

Long-term value should be considered over short-term savings.

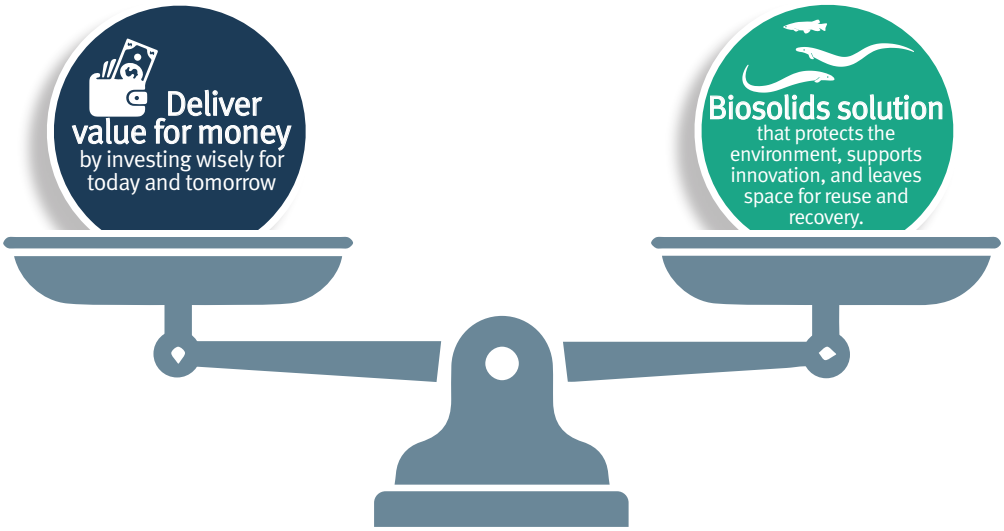
Don't leave **future generations** to carry the cost of decisions we make today.

What we are working on

- The potential solutions will go through a detailed affordability analysis once we understand the location and design choices.
- Environmental assessment is an integral part of the project analysis and decision-making methodology.
- The programme is using robust methodology to assess multiple environmental, economic, social and cultural factors to arrive at potential solutions.
- International benchmarking and case studies of the latest technology to manage biosolids responsibly and cost effectively.

We need to consider

- Adopt an affordability and funding conscious approach to new biosolids solutions.
- Investigate supplementary technologies thoroughly and understand the total costs and environmental impacts before these are implemented.
- Understand the total cost of operation and the benefits delivered over the life of the solution.
- Ensure thorough investigation of financing options and environmental impacts for the final solution.



Whakamahia anōtia Reuse	Taiao Environment	Parakino Contaminants	Kia mārama Transparency

Me wātea kia whakamahia anōtia te totoka koiora | Leave space for reuse of biosolids

People want future biosolids solutions to reduce waste, recover value and keep safe reuse options open and affordable.

We heard that the future biosolids solution needs to consider making better use of resources, **by recovering value, reducing waste, and supporting reuse and recycling wherever possible.** People want safe reuse options to be considered alongside the two viable anchor solutions of either incineration or landfill.

There is a desire for us to explore technologies that not only protect the environment and human health but also create opportunities to return beneficial materials back into productive use.

At the same time, people want balance, to keep services affordable and ensure any transition to reuse options is gradual, practical and cost conscious. We heard that progress toward improved biosolids management is important, but that changes must remain manageable for households.

We are looking at supplementary reuse options that recover value, reduce environmental impacts and avoid unnecessary waste, while balancing financial considerations for the reuse of biosolids.

What we heard

Innovation is key - look into innovative solutions and explore new technologies.

Balance investment in reuse with keeping costs low.

Recycle, reuse, recovery - take the opportunity to turn waste into something useful.

What we are working on

- Biosolids from our Army Bay Wastewater Treatment Plant are made into vermicompost by MyNoke, the world's largest worm farming operation.
- We are running a trial to reuse biosolids in a potting mix.
- We are investigating pasteurised biosolids application to sports turf.
- We keep up to date with international land application use.
- Māngere Wastewater Treatment Plant reuses the heat generated at the plant to make electricity which is then used to run the treatment plant. About 1/3 of the electricity comes from this process.
- We are establishing a nursery to grow native plants with biosolids which can be used in regeneration projects.
- We are investigating reuse technologies that can be implemented gradually alongside the anchor solution.

We need to consider

- The introduction of new reuse solutions balanced with the cost of delivery.
- Assessing options like biochar, energy recovery, and advanced composting to turn waste into useful products.
- Keeping whole of life value in mind – considering the benefits of producing useful products as well as the cost of processing and delivery.
- Ensuring any solution protects ecological safety and community wellbeing.
- Current regulatory requirements and compliance.

Tiakina te taiao mō te anamata
Protect the environment for the future

People favoured solutions that safeguard land, water, air and communities for future generations.

People told us that protecting the environment is a top priority, not just for today, but for future generations of Aucklanders.

People want solutions that safeguard land, water, and air, while still being financially responsible. We heard that choosing the cheapest option now could leave future generations to deal with greater costs and impacts. Many reminded us of our responsibility as good stewards, and the need to engage with mana whenua to consider long-term sustainability in every decision.

We heard that environmental protection and cultural responsibility must sit alongside affordability. That means exploring all aspects of potential core solutions to understand how to reduce or mitigate harm and how to support healthy ecosystems. Our role is to deliver a landfill or incineration solution or a combination of both that is safe, sustainable and effective and protects the environment for the long term. These principles will continue to guide our assessments and decisions as the programme progresses.

What we heard

Protect the environment for the future by focusing on long-term outcomes, not short-term fixes.

Make decisions with future generations in mind.

Use expertise to deliver solutions that can stand the test of time.

Don't choose the cheapest option for the short-term savings.

What we are working on

- Investigating best-practice solutions that reduce emissions, improve treatment performance, and support sustainable reuse.
- Applying whole of life assessments and future based modelling to understand environmental impacts over decades.
- Using project methodology designed for complex projects that is informed by engineering, cultural, environmental, and economic specialists to ensure the best possible solution is selected.
- Reviewing options based on long-term value, not upfront cost, and comparing lifecycle risks and benefits.

We need to consider

- Prioritise long-term environmental protection through practices that safeguard the environment.
- Understand impacts on cost throughout the process.
- Ensure the approach balances environmental protection, proven modern technology and affordability.
- Avoid short-term decisions that shift environmental or financial burdens onto future generations.
- Make it easier on the environment by thinking of innovative solutions which have the least impact on our natural resources.

Kia mārama ngā kōrero mō te parakino
Be clear about contaminants

People want to understand the risks of heavy metals, microplastics, and 'forever chemicals' being in biosolids and how the treatment process manages these contaminants.

People said that providing information about contaminants in biosolids, including heavy metals, microplastics and "forever chemicals" such as PFAS is important. People want to understand how these contaminants are currently managed, the risks associated, and what safeguards will be used in any future solution to protect air, land, and water.

People expressed a strong expectation for transparency, independent testing, and regular public reporting so they can trust how contaminant risks are monitored and managed. Many people also said they needed more information about potential toxins before they could give meaningful feedback on future solutions.

We will continue to strengthen how we communicate about contaminants, the risks they present, and how they are managed. People have been clear that transparent, science-based information is essential for understanding the risks of contaminants in biosolids and how these can be safely managed. Ensuring people have access to accurate, easy to understand information will remain a priority as we move into more detailed investigations and assessments of the future biosolids solutions.

What we heard

Concerns about contaminants, including PFAS, and desire to know how the environment can be protected.

More information required about potential toxins before they can provide meaningful feedback.

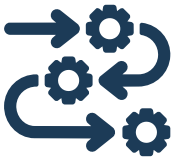
Regular independent testing with transparent public reporting.

What we are working on

- Best practice approach to manage contaminants whatever the solution is. Working with technical experts to provide clear, science-based explanations for the public about management of contaminants.
- Investigating how different biosolids treatment options manage PFAS, heavy metals and other contaminants.
- Assessing international research and standards to ensure best practice risk management. Exploring opportunities for independent monitoring throughout the programme.

We need to consider

- Providing simple, accessible and factual explanations about contaminants and their risks, whatever the final solution is.
- Developing engagement materials that help communities understand technical issues in plain language.
- Ensuring future options include robust monitoring and clear reporting to the public about contaminants.
- Maintaining independent oversight of testing to support transparency and trust.



Haere tahi i roto i te māramatanga
Take people on the journey

People are looking for transparency about trade-offs, costs, and why decisions are made.

We heard that being taken on the journey is essential for building trust and confidence in the biosolids programme. People want visibility of how decisions are made, what trade-offs are being considered, and how environmental impacts, costs and risks are assessed.

They want clear, accessible information, so they can follow the thinking, understand the options, and see how their feedback is being used.

We will continue to strengthen how we share information, explain decisions and bring people along each step of the journey. People have asked for openness, not only about the benefits of future solutions, but also the challenges, risks and trade-offs involved. Ensuring clear, honest and accessible communication will remain a priority, helping Aucklanders stay informed, understand the choices ahead, and see how their voices shape the programme over time.

What we heard

Be transparent about the environmental impacts of whichever solution is decided.

Increase awareness about what the public can do to improve outcomes for all.

Show us the key benefits of any reuse options.

Show us how you are keeping the public safe from contaminants.

What we are working on

- Developing clear, plain language explanations of environmental effects for each option.
- Creating engagement materials that explain the wider wastewater system and how individual actions contribute.
- Assessing and explaining the long-term value of reuse, recovery and recycling pathways.
- Working with technical experts to explain contaminants, risks and how they are managed to provide this information publicly.

We need to consider

- Provide balanced, accessible information showing both benefits and impacts of the potential biosolids solutions.
- Make it easier for communities to understand the role they play and what practical actions they can take.
- Communicate costs and benefits clearly, including environmental stewardship, reuse options and long-term resilience.
- Continue to provide transparent, easy to understand information about testing, monitoring and safeguards.

6 Whakakapinga | Conclusion

What we set out to do

Build awareness

Help people understand the biosolids challenge and how the system works.

Understand community priorities

Hear what matters most, what people are concerned about and what they want considered.

Understand the views of the two viable options

Early views on the two viable long-term solutions and what information people need about the trade-offs ato help assess them properly.

Prepare for future engagement

Find out what information and tools people need to take part in the future stages of the programme.

What we heard

Early engagement has given us a strong foundation for the work ahead. Aucklanders, mana whenua and stakeholders shared what matters most to them, the issues they are concerned about, and the values they want reflected in a future biosolids solution.

This feedback helped us understand people's priorities, the trade-offs that need to be considered, and the importance placed on solutions that are safe, long-term, environmentally responsible and affordable. It also confirmed how important clear information, transparency, and taking people on the journey will be for people to understand how and why decisions are made about a new biosolids solution.

What we heard closely matches the reasons we engaged early: to shape the project by including public feedback, to understand people's values before options are narrowed, and to ensure the next phase of technical work is guided by real experiences, aspirations and concerns for Auckland's biosolids future.

What this means for the programme

This input will continue to guide our assessments as we move toward identifying viable options for Auckland's biosolids after 2035.

7 Ngā mea ka whai ake | Next steps

We'll continue to build on the foundations set through early engagement. Over the coming months we will:

- **Take a closer look at the different biosolids management options,** including global case studies and how well the options perform over the long term.
- **Share clear and easy to understand information,** including what each option means for the environment, management of contaminants, and other effects.
- **Work closely with mana whenua,** ensuring cultural values and perspectives guide our thinking and decisions.
- **Keep Aucklanders informed,** through regular project updates, online information and future engagement opportunities.

Thank you to everyone who took the time to take part, whether through surveys, events, workshops, wānanga, conversations or online engagement. Your insights are helping shape the future of biosolids management in Tāmaki Maukaurau, and your feedback will remain central as the programme progresses.

Rob Tinholt, Biosolids Planning Manager, developed Emerge Fertiliser from struvite which is a by product of the wastewater treatment process. Emerge is available in Mitre 10 stores.

Ētahi atu kōrero mō te totoka koiora
Learn more about biosolids

Helping you understand what biosolids are, how they're managed, and why they matter.

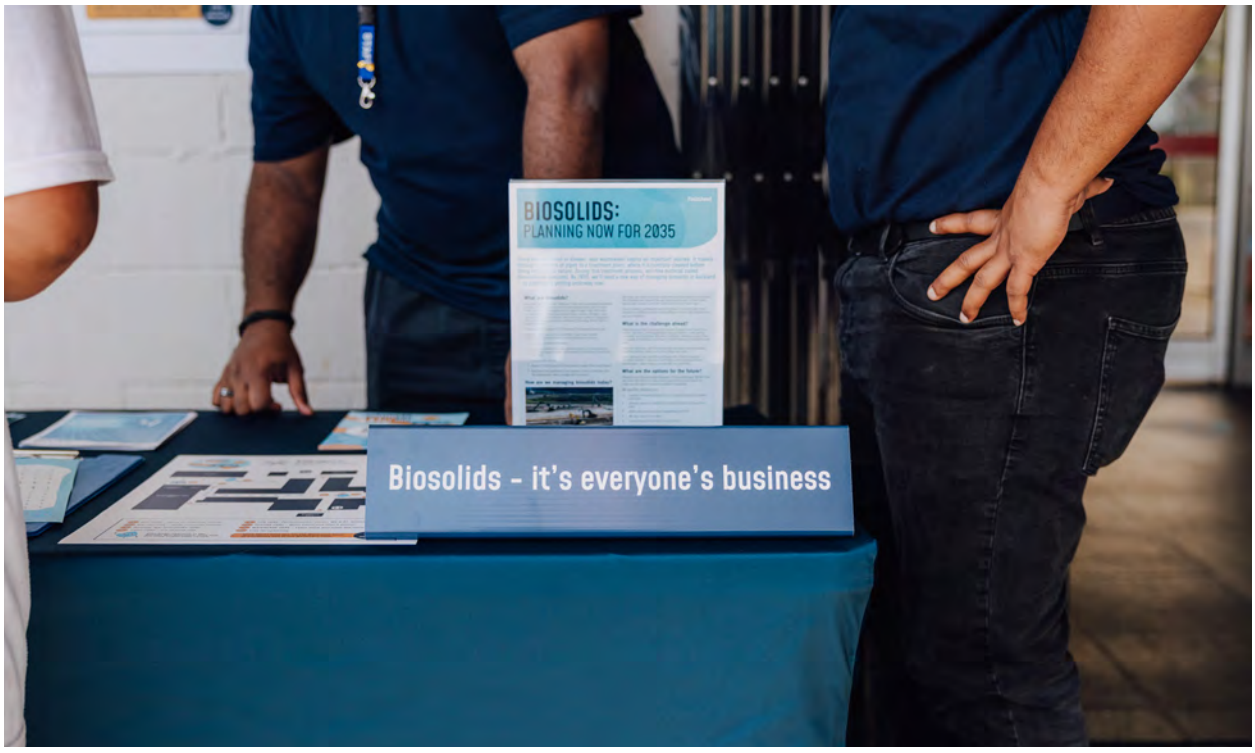
Discover more online

If you would like to stay informed, ask questions, or follow project progress, our website is your best source of up-to-date and reliable information:

- **Scan the QR code** or go to the Watercare website and search for "Biosolids" or www.watercare.co.nz/biosolids
- **Sign up** on the website for regular updates and newsletters
- **Check out** the FAQ's and contact us with your questions
- **Coming soon** – "Everyone's Business" with Rob video series will be available via the website, with posts on social media – where common questions are answered by our technical experts.

Watercare employee listens to participants in our deliberative workshop

Kohinga whakaahua | Engagement image gallery




1.7 million Aucklanders receive our safe, reliable water and wastewater services every day.
Watercare
We're investing $13.8 billion over the next 10 years – that's $3.8 million every single day.
Watercare
Fast facts
If placed end-to-end, our pipes would stretch about 20,000 km – around the same distance as Auckland to London.
From sky to sea, Auckland has
29 water sources
19 water treatment plants
18 wastewater treatment plants
660+ pump stations
Watercare
Te Whakaapa o te Wai
Watercare
We want your feedback
Biosolids
it's everyone's business
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BUS ZONE - PUKETUTU ISLAND TOUR
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Wonder wai
RIST BANDS HERE
ERE
DAY
OUT

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