

## Western Isthmus Water Quality Improvement Programme

File No.: CP2017/21525

Item 12

### Purpose

1. To agree the recommended option for a joint Watercare Services Limited (Watercare) and Auckland Council programme that addresses water quality issues in the western isthmus area and recommends that the approved option is considered as part of Long-term Plan 2018-2028 process.

### Executive summary

2. The Western Isthmus Water Quality Improvement Programme was initiated in response to the long-standing concerns around the water quality in the streams and harbour within the western part of Auckland's inner city.
3. A project was jointly undertaken by Watercare and Auckland Council to develop a proposed programme of works to improve water quality, to enable growth and to reduce wet weather overflows. The programme of works will be considered as part of the Long-term Plan 2018-2028.
4. Watercare and Auckland Council agreed the terms of reference for this project including criteria for the analysis of options to improve water quality in the western isthmus. Analyses were undertaken for ten catchments in the western isthmus (see Attachment A for map of catchments). Three main options are presented for the Environment and Community Committee's consideration including:
  - Option One: Do nothing
  - Option Two: Continue with existing planned for and budgeted works such as the central interceptor and stormwater upgrades
  - Option Three: (Recommended) Increase investment in parallel with existing planned for and budgeted works to achieve improved water quality outcomes. The recommended option is described in more detail in Attachment B to this report. In summary it includes:
    - constructing a new 4.5m diameter tunnel from the proposed Central Interceptor termination point at Western Springs through to Grey Lynn
    - constructing new wastewater infrastructure to enable growth
    - constructing new stormwater enhancements including separation of the combined networks.
5. Option Three (increased investment in parallel with existing planned for and budgeted works to achieve improved water quality outcomes) is recommended as it will have the most benefits by:
  - greatly reducing wet weather overflows in the next decade
  - enabling growth
  - improving water quality, and
  - giving communities confidence that the council group is committed to improving water quality.
6. The recommended option (Option Three) (refer Attachment B) has a current capital cost estimate of \$1.825 billion (in today's dollars), as outlined in the draft programme (refer Attachment C). A portion (\$1.23 billion) of this cost is budgeted for within the current Long-term Plan.

7. The recommended option would require an increase of \$595 million in the Long-term Plan 2018-2028 funding. This would mean an increase of \$310 million within Watercare's wastewater infrastructure capital programme in the Long-term Plan 2018-2028 and an increase in Auckland Council's (Healthy Waters) budget by \$285 million in the Long-term Plan 2018-2028. The current funding split between the two entities would need to be agreed through the business case development process.
8. A joint workshop of Auckland Council's Governing Body and the Watercare Board considered the recommended option on 20 September 2017. Subsequently the Watercare Board formally endorsed the recommended technical option (Attachment G).
9. This report asks the committee to note the work and agree that Option Three (Recommended) be considered as part of the Long-term Plan 2018-2028.

## Recommendations

That the Environment and Community Committee:

- a) note the technical and strategic work undertaken jointly by Auckland Council and Watercare to address water quality issues in the western isthmus area specifically to reduce wastewater overflows, provide for growth, and improve stormwater management.
- b) note the endorsement of the recommended technical option by the Watercare Board as described in correspondence dated 27 September 2017.
- c) agree that Option Three (Recommended) is the best practicable option, taking into account the council's wider responsibilities to manage environmental outcomes.
- d) approve that Option Three, the western isthmus water quality improvement programme, now be considered as part of the Long-term Plan 2018-2028, specifically recommending that the programme includes:
  - i) a new tunnel from the Central Interceptor's termination point at Western Springs through to Grey Lynn
  - ii) bringing forward \$310 million of Watercare investment, from decade two and three to decade one, to increase wastewater capacity for growth and reduce wet weather overflows in the area
  - iii) bringing forward \$285 million of Healthy Waters investment, from decade two and three to decade one, to improve stormwater management, allow capacity for growth and reduce wet weather overflows
  - iv) funding separation of private combined systems, where appropriate.
- e) note that the recommended programme, while reliant on the central interceptor and planned stormwater upgrades, will not impact on those timeframes and costs, nor will it impact on the resource consents for the Central Interceptor, Watercare Network Discharge Consent or the Māngere Wastewater Treatment Plant.
- f) note that the recommended programme and budgets are subject to public consultation and consideration as part of the Long-term Plan 2018-2028 process.
- g) note that a decision to approve the recommended option and budgets will be of high significance under Auckland Council's Significance and Engagement Policy and as a result, there would be a requirement for consultation. Compliance with the relevant sections of the Local Government Act 2002 will occur as part of the development of the Long-term Plan 2018-2028 process.
- h) agree that, subject to the Long-term Plan 2018-2028 process, that Auckland Council will take all necessary action to progress Option Three in a timely and collaborative manner with Watercare.

## Comments

### Context

10. The Western Isthmus Water Quality Improvement Programme (formerly CANOPy) was initiated in January 2017 in response to long-standing concerns about the ongoing water quality issues in the western part of Auckland's inner city, and the timing required to address these issues.
11. The proposal to initiate this programme of work was discussed at a joint Watercare Board and Auckland Council Governing Body workshop on 15 February 2017.
12. The purpose of the programme was to develop a cost effective, timely and integrated programme that:
  - optimises existing and committed wastewater and stormwater infrastructure to improve the water quality of the Western Isthmus waterways and Waitematā Harbour by reducing high volume and high frequency wastewater overflows,
  - enables the anticipated urban growth in the project area without causing further environmental effects generated by these overflows,
  - will not compromise Watercare's existing Māngere Wastewater Treatment Plant and network discharge consents, or Auckland Council's stormwater discharge consents, and
  - gives communities confidence that efficient and effective steps are being taken to improve water quality in a timely and progressive manner.
13. The project was undertaken jointly by Watercare and Auckland Council's Healthy Waters department, and was guided by the terms of reference of the programme as agreed by the chief executives of each organisation. Watercare, council staff and technical experts worked closely to develop options that addressed the brief as per the terms of reference.
14. A joint workshop of the Auckland Council Governing Body and Watercare Board, held on 20 September 2017, discussed the western isthmus water quality improvement programme. The Governing Body and Watercare Board both endorsed in principle that the recommended option be formally agreed by both entities so that it can be considered as part of the Long-term Plan 2018-2028.
15. The Mayoral Intent for the 10-year Budget (Long-term Plan) 2018–2028 outlines the priorities and work plans that will inform council's direction for the next 10 years. Specifically it describes that the 10-year budget should have a clear focus on *'protecting our environment with a particular emphasis on improving water quality in our harbours and addressing climate change challenges'* alongside three other main priorities relating to investment in Auckland's transport network, housing, and making Auckland a great place to live, work and visit.
16. The mayoral intent also notes that upgrading and building Auckland's water infrastructure is a top priority for the next decade with the objective of *'substantially reducing wastewater overflows including, where practicable and financially viable, separating stormwater from wastewater'*.

### Options Analysis

17. These inputs and direction have informed the options to improve water quality in the western isthmus area. Three main options are presented for the committee's consideration:
  - Option One: Do nothing
  - Option Two: Continue with existing planned and budgeted works such as the Central Interceptor and stormwater upgrades
  - Option Three: (Recommended) Increase investment in parallel with existing planned for and budgeted works to achieve greater water quality outcomes including:

- constructing a new 4.5m diameter tunnel from the proposed Central Interceptor termination point at Western Springs through to Grey Lynn
- constructing new wastewater infrastructure to enable growth
- constructing new stormwater enhancements to enable separation of the combined networks.

18. The three options have been analysed against the outcomes sought and the advantages and disadvantages of each option are described in the table below.

Table 1: Comparison of Options – Western Isthmus Water Quality Improvement Programme

Options	Advantages	Disadvantages
Option 1 – Do nothing	<ul style="list-style-type: none"> <li>• Could release funding for other council investment priorities</li> </ul>	<ul style="list-style-type: none"> <li>• Does not provide capacity for growth</li> <li>• Does not reduce overflows to acceptable levels – see Attachment D</li> <li>• No improvement to water quality outcomes</li> <li>• Mana whenua and community outcomes not met</li> <li>• Will not meet consent requirements</li> <li>• Will not achieve Safeswim outcomes</li> </ul>
Option 2 – Continue planned for improvements	<ul style="list-style-type: none"> <li>• Can be delivered within existing budgets over a ten year period</li> <li>• Some water quality improvements</li> <li>• Some reduction in wet weather overflows</li> <li>• Will enable growth</li> <li>• May achieve some limited Safeswim outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• Does not significantly reduce wet weather overflows to acceptable levels within the next decade – see Attachment E</li> <li>• Limited to water quality improvements</li> <li>• Mana whenua and community aspirations partially met</li> </ul>
Option 3 – Increase investment in parallel with existing planned for and budgeted works to achieve greater water quality outcomes <b>(Recommended Option)</b>	<ul style="list-style-type: none"> <li>• Will deliver a significant reduction in wet weather over a ten year period – refer Attachment F</li> <li>• Reduces public health risks associated with wet weather overflows</li> <li>• Will achieve the greatest Safeswim outcomes with the majority of sites suitable for swimming</li> <li>• Enables wastewater infrastructure to meet growth</li> <li>• Enhances stormwater management in the western isthmus area</li> <li>• Gives mana whenua and communities confidence that the council group is committed to improving water quality outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• More short term local disruption particularly in areas being separated</li> <li>• More interaction with private homeowners, particularly in those areas to be separated</li> <li>• May require additional funding to deliver the outcomes over a ten year period</li> </ul>

*Recommendation and Rationale*

19. Staff recommend that Option Three (increased investment in parallel with planned works to achieve greater water quality outcomes) is progressed as it will have the most benefits with the existing and planned infrastructure including:
  - greatly reducing wet weather overflows
  - enabling growth
  - improving water quality, and
  - giving communities confidence that the council group is committed to improving water quality.
20. Specifically the main benefits of the recommended option include:
  - a significant reduction in wet weather overflows and substantial improvement in swimability through stormwater enhancements and the removal of permanent no-swim signs such as at St Marys Bay.
  - reducing public health risks associated with wet weather overflows
  - enabling wastewater infrastructure to meet growth
  - enhancing stormwater management in the western isthmus area
  - allowing design works to proceed immediately in areas such as St Marys Bay and Herne Bay, with construction planned to start in early 2019
  - working towards meeting Watercare's Statement of Intent obligations of no more than two wastewater spills per annum, and the Auckland and Unitary Plan's objectives of removing stormwater from the wastewater network
  - development of a joint concept design, scoping of works and business case approvals to ensure that neither Watercare's existing or future Māngere wastewater treatment plant operations, nor network discharge consents and Auckland Council's stormwater discharge consents, are compromised.
21. Reducing the number and volume of wet weather overflow points is a key criterion for assessing the water quality outcomes sought. The most telling way to assess which option achieves the most water quality outcomes is by comparison of expected overflows points and frequency in the subject area that would result from the three options as follows:
  - Option One – Do Nothing – **Attachment D**. Over 218 overflow points are estimated to overflow wastewater more frequently than twice per year on average, of these around 43 spill points are estimated to overflow almost every time it rains.
  - Option Two – Continue Current Programme – **Attachment E**. This option targets some of the largest wastewater overflows within the catchment, reducing the frequent spill locations, most notably the locations that spill every time it rains are reduced from 43 points to 31 points. Around 214 locations are expected to spill greater than twice per year on average.
  - Option Three (Recommended Option) – Increase investment in parallel with existing planned for and budgeted work – **Attachment F** - reduce overflow points to ten locations that are anticipated to overflow 2-6 times per year on average, as a result of heavy rainfall.

*Impact on existing works and commitments*

22. The impact of the proposed programme on existing timeframes, costs and legal responsibilities was a key consideration in assessing the recommendation of Option Three. It is critical that any option developed does not impact negatively on both council and Watercare's ability to discharge their responsibilities. Specifically the recommended programme, while reliant on the central interceptor and planned stormwater upgrades, will not impact on those timeframes and costs.



23. In addition, the recommended option does not impact on the resource consents for either the Central Interceptor, Watercare Network Discharge Consent or the Māngere Wastewater Treatment Plan.

#### Financial Implications

24. The recommended option (option three) (refer Attachment B) has a current capital cost estimate of \$1.825 billion (in today's dollars), and includes the works outlined in the draft programme (refer Attachment C). A portion (\$1.23 billion) of this cost is budgeted for within the current Long-term Plan 2015-2025.
25. The recommended option would require an increase of \$595 million in the Long-term Plan 2018-2028. This would mean an increase of \$310 million within Watercare's wastewater infrastructure capital programme in the Long-term Plan 2018-2028 and an increase in Auckland Council's (Healthy Waters) budget by \$285 million in the Long-term Plan 2018-2028. This means bringing forward investment from decades two and three to decade one of the Long-term Plan 2018-2028.
26. The current and recommended investment over the ten years of the Long-term Plan is shown in Figure 1 below. The current funding split between the two entities would need to be agreed through the business case development process.
27. In order to ensure that the best outcome is achieved in each catchment, a joint concept design and scoping of works for each catchment will be undertaken and submitted through the regular council and Watercare approval processes.

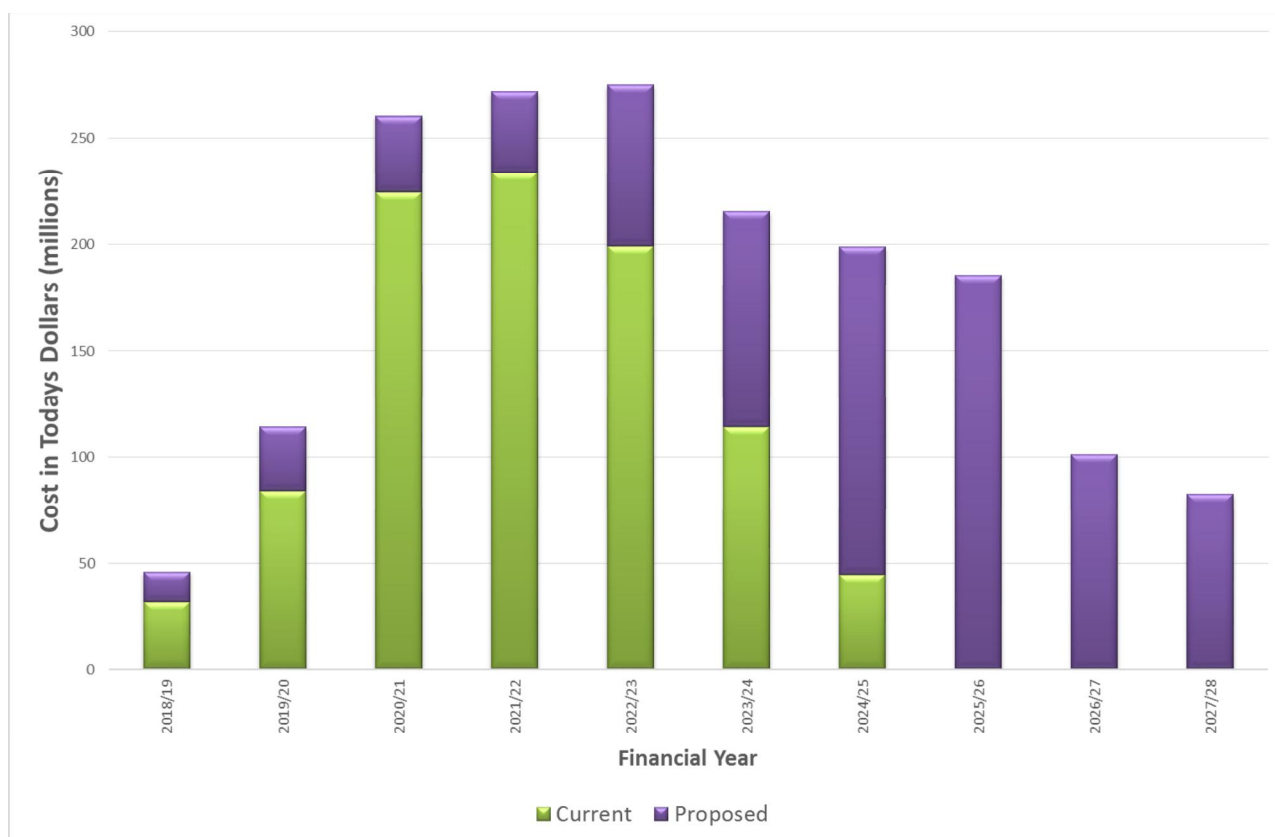


Figure 1: Funding profile of the recommended option for the Western Isthmus Water Quality Improvement Programme

28. The Mayoral intent requests advice from officers on 'securing the funding to construct the central interceptor, including the potential for a special purpose vehicle to finance this development' and 'other projects and funding options that contribute to water quality improvement including stormwater separation where practicable, green infrastructure and further measures to stop wastewater overflows.'

29. Any additional funding for the recommended option could be considered and consulted on as part of the Long-term Plan 2018-2028 process. This report recommends that option three is recommended to be considered via that process, staff will work on the funding options requested as part of the Long-term Plan 2018-2028 process.

#### *Risks*

30. Option One and Two represent different levels of risk to the council group. Option One represents significant strategic, reputation and financial risks as it would limit capacity for growth and services needed for a rapidly growing city. It would also be an inadequate asset management approach which could lead to infrastructure failure. In addition it represents a reputational and regulatory risk through the continued degradation of water environments and non-compliance with resource consent conditions. Option Two represents lower reputational risk but does not meet community and council expectations in relation to water quality outcomes.
31. While there are less reputational and strategic risks associated with the recommended Option Three some risks remain; specifically there are regulatory, community, and costs and funding risks.
32. The regulatory risks relate to the proposed new tunnel and compliance with existing resource management consents, designations and land owner approval under the Local Government Act 2002 in addition to the discharge consent required for new stormwater outfalls to allow combined properties to be separated. Staff will mitigate and minimise these risks to ensure ongoing compliance with regulatory responsibilities.
33. The community risks relate to disruption, property owner objections, injurious affection and expectations as to the outcomes and what council can afford. Staff will work to minimise and mitigate disruption through integrated planning with Auckland Transport and others and effective stakeholder management. Objections to work by private landowners are a low likelihood, high consequence risk with potential impacts on timeframes, budget and outcomes. Council will work with private landowners to resolve any disagreement before looking at using any compulsion powers such as those under the Public Works Act and Local Government Act.
34. The last major risk category is financial, specifically potential cost variance due to unknown conditions and that the proposed programme is contingent on Long-term Plan outcomes. Planning and site specific due diligence will mitigate this risk, if the recommended option is approved via the Long-term Plan 2018-2028 process.

#### *Collaboration*

35. The development of the options and the recommendation of Option Three is the result of a collaborative process between Auckland Council and Watercare.
36. As described above, the recommended programme was considered by the Auckland Council Governing Body and Watercare Board at a joint workshop on 20 September 2017.
37. Following the joint workshop with the Watercare Board and the Governing Body on 20 September 2017 the Watercare Board discussed the western isthmus work in further detail in their board meeting on 21 September 2017. Correspondence dated 27 September 2017 (Attachment G) from Watercare's Chief Executive to Auckland Council's Chief Executive, describes the board's satisfaction with the collaboration to date and their acceptance of the recommended option on the proviso that Watercare still needs to know:
- how the Western Isthmus will be funded;
  - how this will impact on Watercare; and
  - how the project will be governed.

38. Subject to this consideration and any agreement via the Long-term Plan 2018-2028, Watercare and Auckland Council will continue to work collaboratively to progress this water quality improvement programme, in line with the agreed terms of reference. This may also include joint governance and funding arrangements.

## Consideration

### Local board views and implications

39. Five local boards sit within, and are impacted by the western isthmus study area; Albert-Eden, Waitematā, Puketāpapa, Whau and Māngere-Ōtāhuhu. All have local board outcomes relating to water quality improvements and support local community-led waterway restoration. In addition some have advocacy points within their Draft Local Board Plans that maintain advocacy for healthy waterways, low impact design and the reduction of wastewater discharges.
40. Many of these local boards have received feedback from communities on the topic of reducing wet weather overflows and improving water quality within their areas. Early discussions on this proposed programme of work have been held with all boards and workshops with the five boards are scheduled to occur in early October 2017. Staff will provide verbal feedback from these workshops at the committee meeting.

### Māori impact statement

41. Wai and water quality are important topics for Māori. The Schedule of Issues of Significance for Māori in Tāmaki-Makaurau refers to environmental protection and management. Mana whenua have a distinct kaitiaki role and have repeatedly expressed concerns in relation to poor water quality, wastewater overflows and the mixing of waters.
42. If approved this project will directly contribute to council actions identified in issue 2.6 of the Schedule of Issues of Significance by improving water quality outcomes and managing discharges into water bodies.
43. The following mana whenua entities have an interest in this area (Te Rūnanga o Ngāti Whātua, Ngāti Whātua o Kaipara, Ngāti Whātua o Ōrākei, Ngāi Tai Ki Tāmaki, Te Kawerau a Maki, Ngāti Tamaoho, Te Ākitai Waiohū, Te Ahiwaru Waiohū, Ngāti Te Ata Waiohū, Ngāti Paoa, Ngāti Maru, Ngāti Whanaunga, Ngāti Tamaterā, Te Patukirikiri, Waikato-Tainui).
44. Staff note that early engagement in partnership with mana whenua to promote kaitiakitanga and embed mana whenua values into this work will be critical to the success of this programme.
45. Preliminary discussions with mana whenua representatives have indicated a strong interest in this project at a governance level. In these discussions mana whenua representatives have noted that improving water quality and reducing the overflows are important but that the impacts on both harbours needs to be considered.
46. Subject to endorsement of the recommended option staff will seek direction from mana whenua as to how they would like to engage with the programme and develop a plan for mana whenua engagement.








## Implementation

47. If agreed, the recommended option will be a significant decision under the general criteria Auckland Council's Significance and Engagement Policy. Compliance with the relevant sections of the Local Government Act will occur as part of the development of the Long-term Plan 2018-2028.
48. Early community engagement on the issues has already commenced and a community workshop to commence early engagement on the options and recommendation is scheduled for Monday 16 October 2017. Staff will provide a verbal update on the community views from this workshop at the committee meeting.



49. The recommended option has significant financial, environmental and community impacts. The Environment and Community Committee cannot make a decision that pre-empt the Long-term Plan 2018-2028 process. Consequently this report asks the committee to note the work and agree that the recommended option be considered as part of the Long-term Plan 2018-2028.
50. If the recommended option is agreed as part of the Long-term Plan 2018-2028 further joint governance and funding approaches will need to be agreed.

## Attachments

No.	Title	Page
<a href="#">A</a> 	Western Isthmus Catchments Map	101
<a href="#">B</a> 	Western Isthmus Programme - Option Three - Map	103
<a href="#">C</a> 	Proposed Western Isthmus Programme - timeline for works	105
<a href="#">D</a> 	Overflow Outcomes - Option One - Do Nothing	107
<a href="#">E</a> 	Overflow Outcomes Option Two - Current Work	109
<a href="#">F</a> 	Overflow Outcomes - Option Three - Western Isthmus Improvement Programme	111
<a href="#">G</a> 	Letter Watercare to Auckland Council - 27 September 2017 - Western Isthmus	113

## Signatories

Author	Craig Mcilroy, General Manager, Healthy Waters, Infrastructure and Environmental Services
Authorisers	Barry Potter - Director Infrastructure and Environmental Services Dean Kimpton - Chief Operating Officer







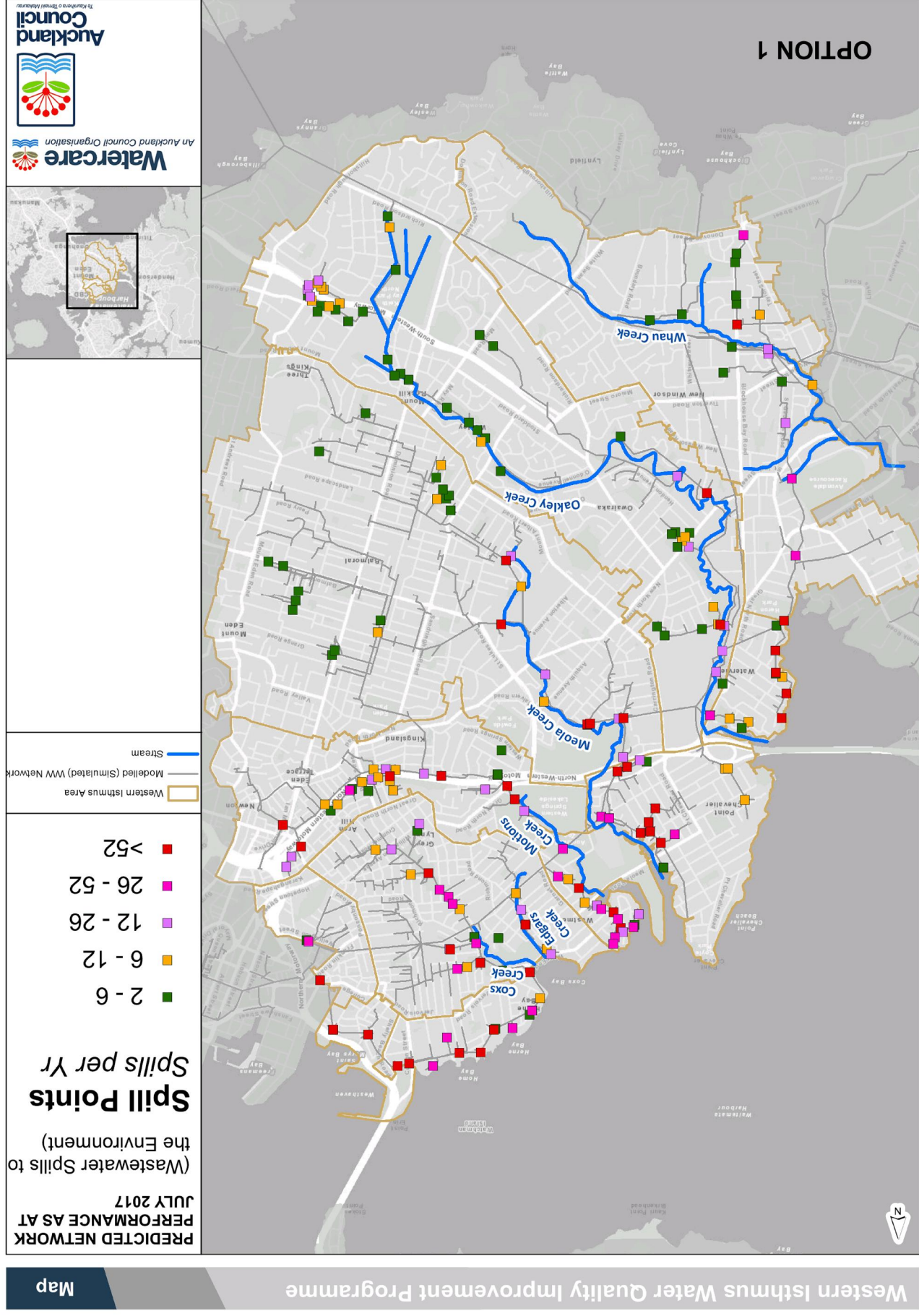






Western Isthmus Water Quality Network Improvement Programme												
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Central Interceptor Stage 1 (May Rd)												
Central Interceptor Stage 2 (Western Springs)												
St Marys Bay/Masefield Beach overflow diversion												
Network enhancements												
Separation												
Central Interceptor Stage 3 (Grey Lynn)												
Connection												
Network enhancement												
Separation												
Separation												
Network enhancement												
Separation												
Freemans Bay												
Avondale/Whau												
Network enhancement												
Separation												
Pt Chevalier												
Network enhancement												
Separation												
Oakley												
Network enhancement												
Separation												
Westmere												
Network enhancement												
Separation												
Grey Lynn												
Network enhancement												
Separation												
Motions												
Network enhancement												
Separation												
Meola												
Network enhancement												
Mangere Wastewater Treatment Plant												
Concept Design & Business case approvals												
Detailed design & Consenting												
Tender & Construction												



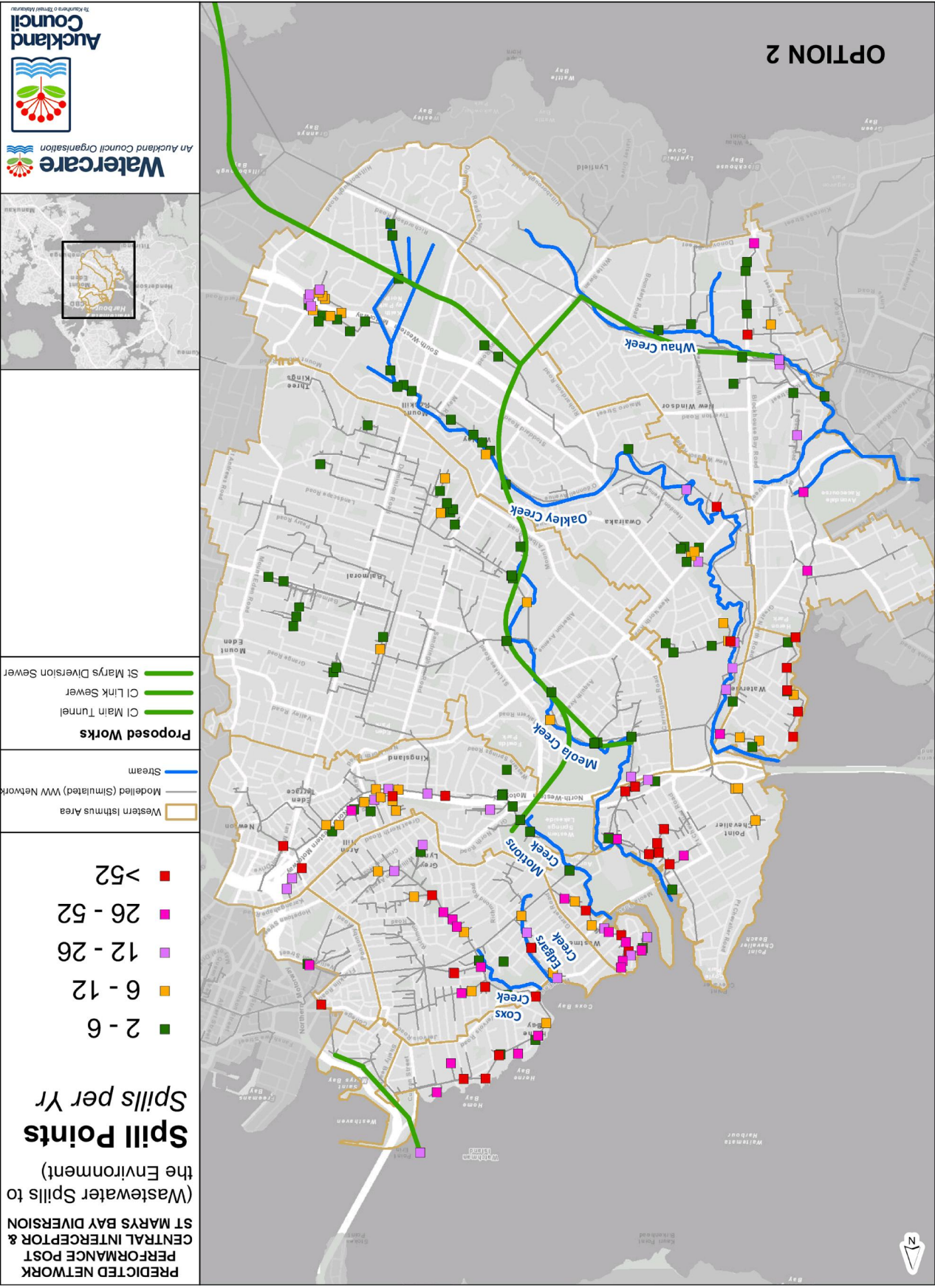






Map

Western Isthmus Water Quality Improvement Programme



Watercare  
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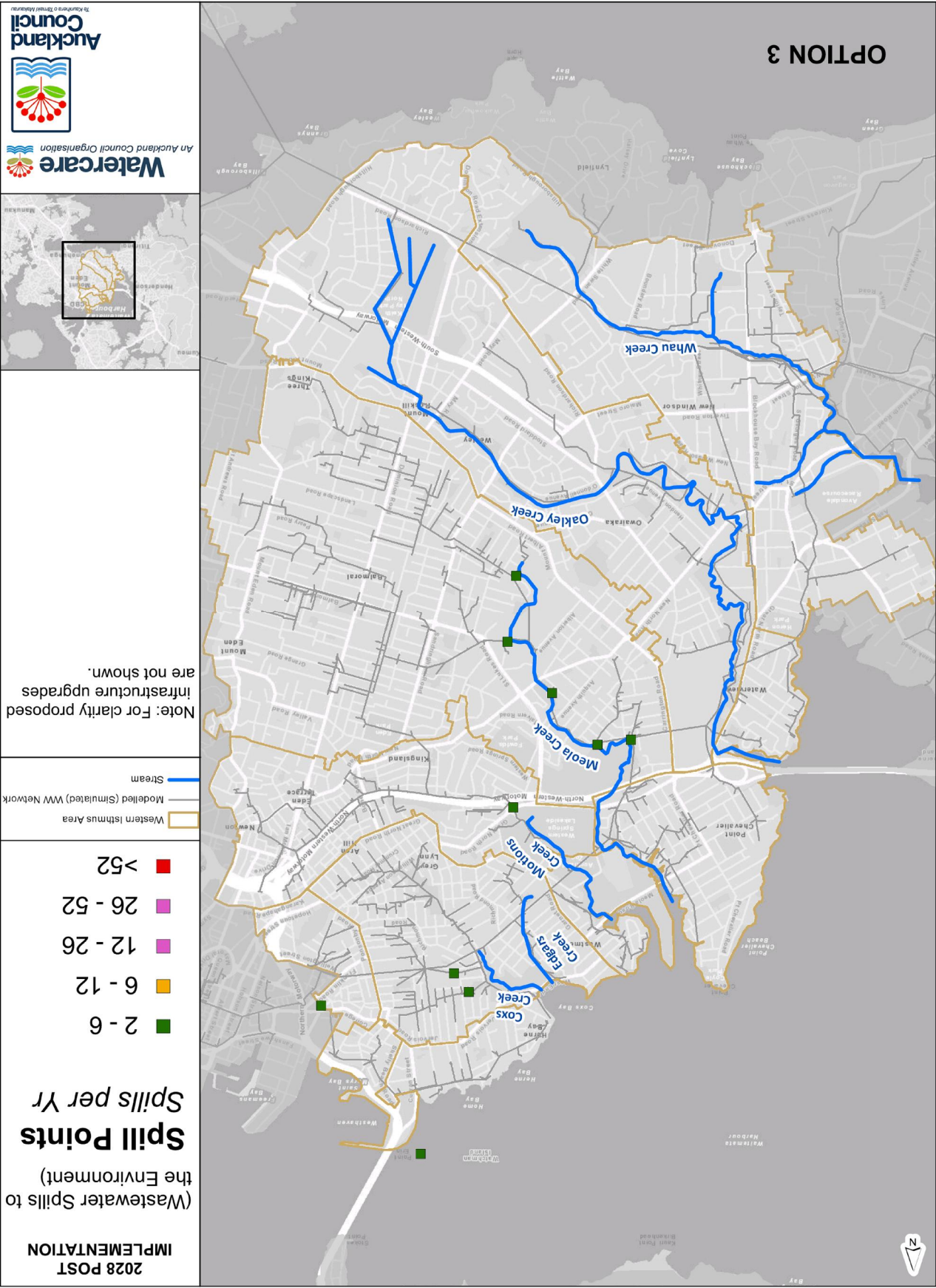


Auckland Council  
To Kaitiaki o Tāmaki Makaurau



Map

Western Isthmus Water Quality Improvement Programme



Watercare  
An Auckland Council Organisation



Auckland Council  
To Kaitiaki o Tāmaki Makaurau







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27 September 2017

Mr Stephen Town  
Chief Executive  
Auckland Council  
Private Bag 92300  
Victoria Street West  
AUCKLAND

Dear Stephen

**Western Isthmus – Joint Recommendation**

I refer to the joint workshop with the Watercare Board and Councillors on 20 September 2017. The Watercare Board and management thought the workshop was extremely useful, given the collaborative approach taken by the management teams in the lead-up, and on the day.

After the workshop, our Board of Directors met to discuss the Western Isthmus in further detail, including the recommended option.

At the Watercare Board meeting on 21 September, the Board accepted the joint technical recommendation as set out in the attached document but with the proviso that Watercare still needs to know:

1. How the Western Isthmus will be funded;
2. How this will impact on Watercare; and
3. How the project will be governed.

Our team looks forward to continuing to work together with you and your team to resolve the above three issues.

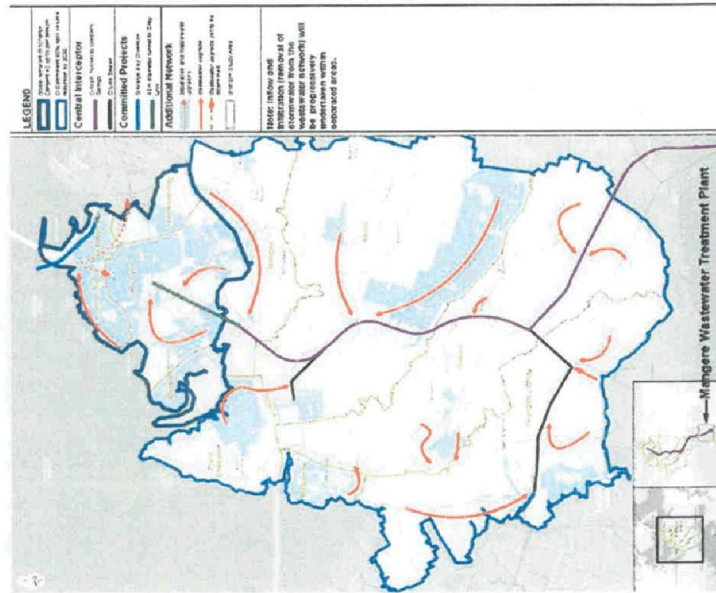
Yours sincerely

Raveen Jaduram  
Chief Executive



## Recommended option

- New 4.5m diameter tunnel (in green) from the terminus of the Central Interceptor at Western Springs through to Grey Lynn (completed 2026)
- New wastewater infrastructure to enable growth
- New stormwater enhancements to enable separation as required in combined drainage areas
- In areas where stormwater networks exist, separating properties that have combined drainage to gain early benefits
- A catchment by catchment business case approach
- Total cost \$1.825 billion (today's dollars)
  - Wastewater cost \$1.5 billion (\$960 million for Central Interceptor)
  - Auckland Council \$325 million



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