REF APP-123774

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER discharge and land use resource consents for the operation and maintenance of the Wairoa wastewater treatment plant and sewer pump station overflows

BY **WAIROA DISTRICT COUNCIL**

APPLICANT

DECISION OF HEARINGS PANEL

OUTCOME:

A: APPLICATION GRANTED FOR RESOURCE CONSENTS SOUGHT.

B: TERM OF 15 YEARS FOR PRINCIPAL CONSENTS.

C: TERM OF 5 YEARS FOR PUMP STATION OVERFLOWS.

D: REVISED CONDITIONS INCLUDING MILESTONES FOR LAND IRRIGATION AND STORAGE AND BETTER INTEGRATION OF MĀTAURANGA MĀORI THROUGHOUT CONSENT IMPLEMENTATION, MONITORING AND REVIEW.

Application Number	**HBRC Reference APP-123774**
Site Address	
Applicant	Wairoa District Council
Hearing Commenced	30th November 2020
Hearing Panel	● Martin Williams (Chairperson) ● Rauru Kirikiri (Independent Commissioner) ● Dr Malcolm Green (Independent Commissioner)
Appearances	*For the Applicant: Wairoa District Council* ● Stephen Heath, Wairoa District Council ● Matthew Lawson, Lawson Robinson (legal counsel) ● Hamish Lowe, Lowe Environmental Impact ● Phil Lake, Lowe Environmental Impact ● Gary Teear, Offshore & Coastal Engineering Limited ● Cameron Drury, Strategy Urban, Environmental and Strategic Planning ● Dr Shaw Mead, eCoast *For the Submitters* ● Ngā Tokorima a Hinemanuhiri Trust / Ngāti Kahungunu Iwi Incorporated (NKII) o Shade Smith o Ngaio Tiuka ● Wairoa Taiwhenua, Ngā Tokorima a Hinemanuhiri Trust, NKII o Katarina Kawana ● Michelle McIlroy o Michelle McIlroy o Hira Huata o Adrian Manuel ● Ina Kumeroa Kara-France o Ina Kumeroa Kara France o Esther D Foster ● Christina Stockman ● Hawke's Bay District Health Board o Cameron Ormsby *For the Council: Hawke's Bay Regional Council* ● Tania Diack, reporting officer

	● Dr Shane Kelly, Coast and Catchment Limited ● Nicholas Dempsey, Mott MacDonald NZ Limited ● Malcolm Miller (sitting in) ● Sophia Edmead (sitting in) *Hearings Administrator* ● Michaela Tinker
Hearing adjourned	1st December 2020
Commissioners' Site Visit	1st December 2020
Hearing Closed	6 September 2021

Introduction

1 This decision is made on behalf of the Hawke's Bay Regional Council (HBRC) by HBRC elected member Martin Williams (Chairman) and independent commissioners Rauru Kirikiri and Dr Malcolm Green appointed and acting under delegated authority under s 34 and 34A of the Resource Management Act, 1991 (the RMA).

2 This decision contains the findings from our deliberations on the application for resource consents and has been prepared in accordance with s 113 of the RMA.

3 Specifically, the decision relates to the applications made by Wairoa District Council (WDC) for resource consents to replace existing discharge permit CD940404W (authorising the discharge of treated sewage effluent from the Wairoa Sewage Treatment Plant into the Wairoa River Estuary), along with a range of associated and additional consents providing for modifications to and replacement of the discharge outfall infrastructure, occupation of the riverbed within the coastal marine area, the discharge of untreated wastewater from certain pump stations, and discharges to air.

Summary of the Proposal (November 2018)

4 Both the Applicant's Assessment of Environmental Effects (AEE) and the s 42A report provide detailed descriptions of the proposal and its location. In summary the applications are for the continued operation of the existing Wairoa Wastewater Treatment Plan (WWTP), with some modifications, for a duration of 35 years.

5 In addition, the proposal seeks to obtain retrospective approval for three pumping station overflow structures and associated discharges that discharge untreated wastewater during events when the municipal sewer network is overwhelmed with stormwater.

6 Modifications to the existing main outfall structure have been undertaken without consent approval in response to non-compliance issues and short-term retrospective approval for

these works is required until the replacement of the main outfall structure pipe is installed and operational (see below).

7 The Applicant is seeking to replace the main outfall structure and to have the ability to alter the structure within the river channel when river conditions change (sedimentation / obstructions etc.).

8 More specifically, the principal elements of the WWTP and associated infrastructure that are the subject of the applications before us are:

- Discharges to air from the WWTP, comprising a two stage treatment system including a mechanically aerated lagoon, and oxidation/maturation pond.
- The discharge of treated wastewater from the WWTP through the existing outfall located within the Wairoa River Estuary, with the outfall structure crossing from land into the riverbed near the corner of Kopu Road and Fitzroy Street.
- Replacement of the existing outfall structure with a new outfall, comprising a 400 metre long polyethylene pipeline with attached diffuser, enabling discharge more directly into the main river channel (which had migrated away and east of the current outfall in recent years), and with the new outfall being 160 metres longer than the existing outfall.
- The continued discharge of wastewater through a surcharge pressure release overflow structure into an adjacent stormwater drain and in turn into the Wairoa River via the river bank (with this surcharge overflow structure and discharge to be decommissioned on commissioning the new outfall structure).[1]
- The continued discharge of untreated wastewater from the Alexandra Park, North Clyde and Kopu Road pump station overflow discharge pipes to the Wairoa River, during periods when stormwater flows overwhelm their pumping capacities.[2]
- Retrospective authorisation for modifications to the surcharge and outfall pipes, undertaken following a significant rainfall event in April 2017.[3]
- Authorisation to relocate the outfall diffuser along the new outfall pipe alignment, in response to potential future movement in the river channel, for optimum dispersion and flushing of wastewater discharges.[4]
- The construction of an additional 10,000 m^3 of storage for treated wastewater (in the form of tanks or ponds) increasing total available storage to 15,400 m^3. [5]

[1] Refer AEE Section 5.3, 5.11 and paragraph 11 of the s 42A report.
[2] Section 5.3 of the AEE.
[3] Section 2.2 of the AEE, paragraph 11 of the s 42A report.
[4] AEE Section 5.4, paragraph 64 of Mr Lowe's evidence, proposed condition 33 (Version 22).
[5] Section 5.8 of the AEE.

- Addition of an ultraviolet (UV) disinfection treatment stage and sand filter to provide more effective pathogen removal and provide purification that could otherwise have been provided by Papatūānuku.[6]

9 A further and fundamental dimension of the application is the reframing of the current "discharge regime" set through the consent conditions of discharge permit CD940404W.

10 In essence, the existing permit constrains the daily discharge to 5,400 m^3 per day, and requires that it only occur during periods of ebb tide (30 minutes after high tide to six hours after high tide) and between 6.00 pm and 6.00 am.[7] The permit also requires that discharges cease during periods of rivermouth closure unless the ability to store effluent has been exceeded.[8]

11 The rationale behind this discharge regime was to ensure that the discharge wastewater would be flushed out to the sea and not carried back up stream past the urban area, including to minimise adverse effects on river water quality, and public health risks associated with contaminated river water or consumption of shellfish containing pathogens.[9]

12 The revised discharge regime proposed under the application is one whereby the rate of discharge would be able to increase as river flows increase, but maintaining controls on discharge times and during periods of rivermouth closure.

13 For example, for river flows less than half the median, the discharge rate would be less than currently authorised under permit CD940404W. Conversely at river flow rates above three times the median, the discharge rate would be unlimited.[10]

14 Sitting alongside the proposed revised discharge regime is an "aspiration"[11] to progressively increase the storage capacity of the WWTP, and develop and expand capacity for land-based irrigation as an alternative to the discharge of treated wastewater to the Wairoa River over four stages and a 30-year period.[12]

15 The irrigation land areas needed to achieve this progressive withdrawal over the proposed 30-year timeframe would comprise (in total) some 600 hectares, along with a total of 400,000 m^3 of additional storage capacity at the WWTP itself.[13] That said, we understand (from the evidence received, as addressed below) that even with all of this land and additional storage available, there would still need to be an outfall and the potential for albeit infrequent discharge to the river indefinitely.

[6] Paragraph 30 of Mr Lowe's evidence, section 3.7 of the AEE.
[7] Conditions 2 and 3 of discharge permit CD940404W.
[8] Condition 4 of discharge permit CD940404W.
[9] Section 2.2 of the AEE.
[10] Section 3.7 and Table 3.1 of the AEE, proposed conditions 7 and 8 (Version 22).
[11] As framed in the AEE, refer text under Table 3.1.
[12] Ibid.
[13] Table 3.1 of the AEE.

16 The issue of alternatives, and land-based irrigation in particular, was a dominant focus of evidence presented at the hearing, particularly by submitters, for reasons that will be discussed in more detail below.

17 The key elements of the application as recorded to this point, including proposed works to upgrade, modify and improve WWTP performance over the duration of the 35-year consents sought under the applications, are best encapsulated in the following extracts of the AEE.

> In addition to the main discharge of treated wastewater, reticulation pump stations overflow during some storm events. These are untreated wastewater discharges dominated by stormwater and occur via pipes directly to the Wairoa River adjacent to each pump station. The main WWTP discharge pipeline also has a surcharge overflow structure beside Kopu Road which enters a stormwater drain and then cascades down the riverbank onto the mudflats of the Wairoa River. This only operates while the main discharge occurs at rates or pressures greater than the outlet can discharge. A key purpose of this application for resource consents is to allow WDC to modify the discharge pipeline and flow regime to significantly reduce the use of this overflow structure.
>
> This report and supporting documents seek a replacement discharge resource consent, and a number of associated resource consents, to continue discharging Wairoa's treated wastewater into the Wairoa River; but with a number of significant improvements occurring over time. It also seeks consents for the pump station overflow discharges of stormwater-diluted untreated wastewater to the river and discharges of treated wastewater via the surcharge overflow of the main WWTP discharge pipeline to an adjacent stormwater drain. This application also supersedes the application for consents that were lodged by WDC in December 2017 for authorising the overflow discharges from the pump stations and the WWTP discharge pipeline surcharge structure.[14]
>
> …
>
> Discharges of treated wastewater to the river will be managed so that the volumes increase with increasing river flow rates. Equally, discharges will also gradually occur less often and will transition over time to cease during daytime out-going tides and low river flow conditions. The aspirational goal is that discharges will eventually cease altogether when the river is flowing less than median flow.
>
> **This resource consent application is for the surface water discharge of Wairoa's treated wastewater and occasional wastewater pump station overflows of wastewater-contaminated stormwater to the Wairoa River as part of the larger programme of works. It also includes applications for consents for the modification, maintenance, and operation of the related discharge structures**.[15]
>
> …
>
> In order to achieve these improvements, WDC needs time to implement changes to each element of the wastewater system, which is why the programme shown above is laid out in stages over the next 30 years. The development of each stage is dependent upon the extent to which the irrigation and storage are able to be developed. In order to manage and respond to the level of uncertainty with these goals over the next 30 years, the proposed consent conditions framework incorporates

[14] AEE section 1.1.
[15] AEE section 1.3.

an adaptive management approach to monitor WDC's progress, refine future options for the following 5 year periods, and optimise the discharge and storage regime management throughout the 35-year term of the resource consents.[16]

Te ”Take” Matua – the Key Issue

18 The pervasive challenge to reaching a decision on this application is the fundamental tension between tikanga Māori (customary Māori beliefs and practices) and what is usually referred to as “western science”.

19 The overriding importance of the Wairoa River to Māori, in particular Ngāti Kahungunu ki Te Wairoa – as a symbol of their tikanga – and profound tangata whenua concerns over the adverse impacts of the continued discharge of wastewater from the WWTP into the Wairoa River estuary, sit to one side of this tension; the measured assumptions of science on the other.

20 The difficulty is aligning tikanga with the predominantly western science paradigm that most commonly drives the RMA process, and which largely determines resource consent decision-making.

21 For example, in this instance the western science conclusion that water quality degradation and adverse ecological effects from the discharge are minor are not easily countered by tikanga Māori. Conversely, the belief that a river like the Wairoa has a “personality”.

22 This tension, and the means by which the Applicant seeks to resolve it, are underscored in the following extract from the AEE:

> “The current treated water river discharge is not considered acceptable by many in the community, despite not having any significant measurable effects on the river. Cultural values, as described in the Tangata Whenua Worldviews report (How, 2017:A412) include the views that direct discharge of wastewater to any waterway, including the sea, is culturally offensive, and that ideally after complete treatment, wastewater should be fit for human consumption. The wider community’s opposition to the current discharge relates to the treated wastewater containing pathogens and contaminants entering an environment that is used by a large number of people within the community for recreation and, to a lesser extent, food gathering.
>
> The exact effects and impact of the discharge are likely masked by the condition of the river as a whole; and in particular the negative impact from a range of upstream contributors to poor water quality. These include hill country erosion, run off from the production land and various discharges from roading and urban areas. The community would like to see water quality in their river improved, and the ultimate goal of ceasing the wastewater discharge is a key aspect of this.
>
> Through a comprehensive community consultation process, involving expert and community reviews of a variety of options for the treatment and discharge of Wairoa's wastewater, the following key features were agreed:

[16] AEE section 1.4, below and referring to the staged progression outlined in Table 3.1 of the AEE.

- Additional treatment was required for pathogen control prior to discharge;
- Ideally 100 % land discharges should replace the 100 % river discharge regime;
- Significant volumes of storage will be necessary for discharge management; and
- Development of future storage and irrigation needed to occur gradually so that it would remain affordable for the community."[17]

23 Reduced to its most basic, the Applicant's approach, described as "aspirational",[18] is to progressively increase capacity for discharge to land in preference to a continued discharge to the river over time, as resources permit and when land becomes available.

24 Conversely, submitters sought that the discharge to the Wairoa River cease, if not immediately and altogether, at least within a fixed timeframe; with binding commitments included as consent conditions to set "milestones" and obligations, rather than the progressive withdrawal of the discharge from the river being aspirational only.

25 This is the overriding issue needing to be resolved and determined through this decision.

Consent Application – Background

26 The WWTP is located on Rangihoua (also known as Pilot Hill) which is listed in Schedule 4 of the Iwi and Hapū of Te Rohe of Te Wairoa Claims Settlement Act 2018 as an historic reserve.[19]

27 The current main outfall pipe is located within the Whakamahi Lagoon Government Purpose (Wildlife Management) Reserve.[20]

28 The WWTP was constructed on this site in 1980–81 to provide a centralised treatment system so that the discharge quality and river environment improved.[21]

29 Prior to the 1950s, wastewater was reticulated from four different catchment areas to four pump stations, which each discharged raw sewage into the river. In the 1950s, the pump stations were connected through an underground gravity flow pipe to the Kopu Road pump station, which then discharged all of Wairoa's raw wastewater directly into the Wairoa River.[22]

30 Upon construction of the WWTP, a new sewer main was installed to link the Kopu Road pump station to a new pump station at Fitzroy Street which pumped all wastewater up to the plant.

[17] AEE section 2.3.
[18] Refer page 17 of the AEE.
[19] Paragraph 31 of the s 42A report.
[20] Ibid.
[21] AEE, Section 3.1.
[22] Paragraph 9 of Mr Heath's evidence.

31 It is noted the WWTP includes an aerated lagoon (4,750 m^3) and an oxidation/maturation pond (18,250 m^3). It has a storage capacity of 5400 m^3 which is mostly achieved through fluctuations of water levels in the maturation pond. [23]

32 The outlet of the pond passes through a weir which controls discharges so that they can only occur during overnight outgoing tides as required by the conditions of discharge permit CD940404W.[24] This discharge permit was granted in August 1999 and expired on 31 May 2019.

33 The current applications were formally accepted for lodgement in December 2018.[25]

34 An extensive resource consent process culminating in the hearing in December 2020 then followed, including the following principal stages:

- Formal s 92 request – 26 March 2019.
- Updated s 92 response and overview of application – 25 June 2019.
- Second s 92 request – 12 July 2019.
- Application publicly notified – 13 August 2019.
- Response to 12 July 2019 s 92 request received with detailed plans of proposed outfall replacement – 11 October 2019.
- Pre-hearing meetings – 17 October 2019 and March 2020.
- Further s 92 request – 15 August 2020.
- Further s 92 response – 7 September 2020.

35 In addition to the considerable consent processing history preceding the hearing, the s 42A report details an extensive compliance reporting history involving a range of moderately to significantly non-compliant events extending from 2008 to 2020.

36 The non-compliance issues primarily relate to:

- The discharge of wastewater outside of the prescribed times (and volumes) set under discharge permit CD940404W.
- Unauthorised discharges from the emergency (surcharge) overflow.
- Unauthorised discharges from the pump station outfalls.[26]

[23] Refer Section 3.1 of the AEE.
[24] Ibid.
[25] Table 2, page 12 of the s 42A report.
[26] Pages 15 to 20 of the s 42A report.

37 We note that this enforcement scenario is not directly relevant to our decision, but provides important context to the issues we must address.

38 The short point being that unauthorised discharges cannot continue, but must instead be brought within the framework of consents, as sought under the current applications.

39 To give but one example, the proposed new outfall would involve decommissioning of the emergency surcharge overflow structure which currently discharges down the riverbank and onto the edge of the mudflats adjacent to the principal outfall.[27]

40 As also explained in the AEE, when the existing discharge permit CD940404W was granted, daily wastewater flows were usually in the range of 800–1,600 m^3 per day, peaking at about 2,400 m^3 per day, being well within the consented daily discharge limit of 5,400 m^3 per day.

41 The 5400 m^3 storage capacity of the ponds provided for at least two days of storm flows when the rivermouth was closed, considered to be an appropriate withholding time to allow for the mouth to reopen.

42 The AEE then states:

> However, during the term of this consent, daily wastewater flows have gradually increased to the point that they had roughly doubled. This increase has been particularly apparent for winter and storm even flows. The storm events have been the key cause of pump station overflow events and exceedances of the consented WWTP discharge limits requiring overnight out-going tide timing and, on occasions, exceedances of the 5,400 m^3/d total daily volume limit. The increased flows have also reduced [the Council's] ability to cease discharges for more than a day or two when the river mouth is closed.[28]

43 The AEE also explains that the pump station overflows (North Clyde, Alexandra Park, Kopu Road) have not been specifically consented previously "but have always been a feature of Wairoa's wastewater reticulation and discharge system".[29]

44 The AEE goes on to explain that these overflows occur during storm events when stormwater flows overwhelm pumping capacity, but equally confirms that while wastewater is only a minor component of discharges during such periods (which is mainly stormwater[30]) the sewage released into the river in such events is raw or untreated.[31]

[27] Page 34 of the AEE (Section 5.3), and as confirmed in answers to questions at the hearing by Mr Teear and Mr Health (to the effect that the surcharge outfall would no longer need to remain or operate upon installation of the new outfall) – refer also paragraph 27 of the s 42A report.
[28] Section 2.2 of the AEE which then goes on to explain the modifications to the surcharge and outfall pipes referred earlier.
[29] Section 5.3 of the AEE.
[30] AEE section 5.3.
[31] See also Section 1.1 of the AEE in that regard.

45 The basic practical problems sitting behind these discharges is the fact that Wairoa's sewer network is leaky and prone to groundwater infiltration and stormwater ingress (I&I), which elevates base flows and peak wet weather flow volumes.[32]

46 Both the AEE and evidence presented at the hearing address the efforts which the Council has progressively made to reduce I&I contributions to the point where the Kopu Road pump station remains the most prone to overflows (with the North Clyde pump station overflows essentially resolved).[33]

47 Mr Heath explained that some 30% of the network has now been repaired to avoid I&I, with $5 million of Long Term Plan funding brought forward for the purpose to enable its current relining programme to be completed by March 2022, as enabled by Government (Three Waters Reform) funding recently received.

48 Again, however, the issue of "locking in" that progressive I&I investment in a manner which would minimise if not avoid pump station overflow discharges, was a key issue raised at the hearing needing to be determined as part of our deliberations.

New Outfall Structure and Discharge Regime in More Detail

49 In order to frame the issues in contention and the evidence received, it is necessary at this point of the decision to record a little more detail about the proposed new outfall and discharge regime subject of the applications.

50 We were provided with an overview of the new outfall design elements including employment of a 400 mm polyethylene pipeline through Mr Teear's evidence, which also referred to a construction methodology report and supporting plans received by way of the Common Bundle of Attachments.[34]

51 In essence, the pipeline would be installed in the bottom of a newly excavated trench with a minimum top cover of 1.5 metres, and with piles used to provide lateral stability in the event that it becomes exposed. A (relatively minor) issue of contention addressed later in this decision, relates to the depth of cover needed and protection of the outfall from scouring.[35]

52 We also later address proposed consent conditions to mitigate the effects of outfall construction, including a requirement for an environmental management plan.

53 For present purposes we record that the proposal to replace the existing outfall with a new outfall is highly significant for two reasons:

[32] Section 5.5 of the AEE.
[33] Page 36 of the AEE, paragraphs 22 to 24 of Mr Heath's evidence.
[34] Paragraphs 18 to 22 of Mr Teear's evidence.
[35] Addressed later in this decision with reference to a technical report included within the s 42A report produced with evidence from Mr Kuta.

(a) Because of the significant improvement in discharge performance achieved including dramatically increased dilution at point of discharge,[36] with Dr Mead advising the hearing during questioning that 16 times quicker dilution would be secured than through the existing diffuser/outfall location, but

(b) Conversely, a concession under the Conservation Act is required to construct the outfall (and discharge wastewater from it), given that the outfall traverses the Whakamahi Lagoon Government Purpose (Wildlife Management) Reserve.[37]

54 On the one hand, the new outfall was described to us in evidence as being "vital and necessary"[38] and "fundamental"[39] to implementation of the consents, with Dr Mead advising when asked if he would be concerned if there were any delay to its installation given the great improvement dilution secured, that the estuary is in a "bad way" and so "the sooner the better". As noted above, we are also advised by Mr Teear that the new discharge outfall structure would avoid surcharge overflows to the riverbank, being another important dimension to the new outfall by way of improvements to the status quo.

55 On the other hand, we were advised that the concession application had very recently been made but was otherwise not a matter to which we needed to turn our minds to in considering the current application.[40]

56 We understood from evidence presented at the hearing (and in the s 42A report) that the concession would be determined by the Te Rohe o Te Wairoa (Matangirau) Reserves Board, comprising three members appointed by WDC, and three members appointed by Post Settlement Government entities with direct connections to parties giving submissions and evidence directly in opposition to the application.[41]

57 Given the apparent significance and importance of the new outfall to the environmental performance of the WWTP as it affects the Wairoa River, and yet the very real uncertainty as to whether the outfall would ever be approved so that it could actually be constructed, we sought further information from the Applicant regarding this matter in a Minute released when the hearing concluded, as addressed further below.

58 The other significant issue of uncertainty presented by the application which we address at this point, is that of the proposed revised discharge regime, touched on earlier in this decision.

59 As noted above, the AEE presents a progressively reduced discharge over time, particularly during periods of low river flow. The ability to deliver that progressively reduced discharge (and ultimately avoid any discharge below median river flows) is however entirely contingent on provision of additional storage at the wastewater treatment plant site (up to a maximum of

[36] Refer paragraph 44 of Dr Mead's evidence for example.
[37] Refer paragraphs 8 and 44 of the s 42A report.
[38] Paragraph 21 of Mr Heath's evidence.
[39] Mr Lawson in presenting submissions to the hearing.
[40] Paragraphs 31 to 34 of Mr Lawson's opening submissions.
[41] Ms McIlroy advising that certain directors appointed to the Reserves Board had been instructed not to consent to the concession.

400,000 m^3), and some 600 hectares of available land for irrigation with the treated wastewater.[42]

60 The short point being that at present, none of the land required for irrigation has been secured. At the time the s 42A report was prepared, there was no commitment to even the initial stage of 10,000 m^3 of additional storage envisaged as part of stage 2 in Table 3.1 of the AEE.[43]

61 At the hearing, we were presented with what was labelled as "Version 22" of proposed consent conditions which we understood had evolved through the extensive application process summarised above, from point of first lodgement.

62 Under this version of conditions:

- The Applicant had committed to establish up to 10,000 m^3 of additional storage;[44] and
- Prior to the commissioning of that storage and 50 hectares of land-based irrigation, the discharge would be limited to 3,000 m^3 when flows in the Wairoa were less than median and confined to night time periods;[45] but
- Once the 10,000 m^3 of additional storage and 50 hectares of land-based irrigation had been commissioned, the discharge would be confined to 1,600 m^3 when river flows were less than one half of the median and confined to night-time periods.[46]
- The new outfall would be constructed within 18 months of obtaining the necessary Conservation Act concession.[47]
- Within one year of the commencement of the consent the consent holder must have installed (and be operating) a sand filtration and ultraviolet disinfection system.[48]

63 Reflecting the revised discharge regime as summarised above, for river flows between the median and three times the median, the discharge rate would be limited to 5,000 m^3 / day and when the river flow was above three times the median, the discharge volume would not be limited. The restrictions against day time discharges would no longer apply for discharges at the higher river flow rates.

64 It was Mr Lake's evidence (addressed further below) that this revised discharge regime was inherently more restrictive than the current consent, albeit that it provided for higher discharge volumes during periods of higher river flow.[49]

[42] Refer Table 3.1 of the AEE.
[43] Paragraph 15 of the s 42A report.
[44] Proposed condition 44 of Version 22.
[45] Proposed condition 7.
[46] Proposed condition 8.
[47] Proposed condition 33.
[48] Proposed condition 38.
[49] Paragraph 29 of Mr Lake's evidence.

65 While we were provided with access to various reports commissioned by the Council (in the lead up to the application) addressing issues of discharge regime options and alternatives,[50] no definitive information or evidence was given to us about the availability and suitability of the amount of land assumed for irrigation under Table 3.1 of the AEE specifically.

66 During the course of the hearing, Mr Lowe explained the derivation of the land area requirements for irrigation including the 600 hectare figure in Table 3.1 as assuming 100% of all wastewater being discharged to land at 2 mm per day application rate, but equally advised that the actual land area would depend on the attributes of a specific site (including topography), and that the estimate was inherently fraught in light of climate change affecting the capacity of sites in the vicinity of the plant to absorb treated wastewater upon irrigation.

67 We were also advised that the estimated cost of land acquisition at that scale could extend to some $60 million.

68 It was with this reality in mind that the s 42A report raised the concern that Table 3.1 necessarily remained "aspirational", and advised that the proposed progressive regime of reduced discharge to the river could not be given any weight.[51]

69 It was put to Mr Lawson (counsel for the Applicant) by Commissioner Green that in terms of what was known as achievable and able to be delivered to address tikanga issues, the only certainty as to implementation was the sand filter and ultraviolet disinfection treatment; everything else being contingent on factors beyond the Applicant's control. Mr Lawson appeared to accept that.

70 As a final preliminary matter regarding the application proposal itself, we note that upon lodgement there was no intention to replace the existing outfall, but instead to relocate the diffuser as needed over time to ensure that it was kept close to the in-shore edge of the main active river channel, for optimum dispersion and flushing of the treated wastewater discharges out to sea.[52]

71 The AEE contains a figure delineating an area within which such outfall relocation might occur.

72 The s 42A report took issue with this aspect of the application, describing it as "not considered tenable".[53]

73 In response, the proposal was refined whereby the diffuser could be relocated along the alignment of the new outfall (only), with a new condition 33 included within Version 22 to provide for the management of any such relocation.[54]

[50] Most notably in relation to land discharge, a report entitled Land Treatment Opportunities – LEI, 2007:A5I1 showing the location and suitability of various land areas potentially suitable for irrigation along with a report quantifying the areas needed and potential costs under various scenarios.
[51] Paragraph 21 of the s 42A report.
[52] Section 5.4 of the AEE.
[53] Paragraph 101 of the s 42A report.
[54] Refer paragraph 64 of Mr Lowe's evidence.

Version 22 – Consent Conditions

74 As noted, for the purpose of the hearing we were provided with Version 22 of the consent conditions, which as well as detailing the specific authorisations sought by WDC to provide for the principal components of the application as outlined above, included various conditions aiming to address the full range of technical and cultural issues raised by the application.

75 We will of course return to the issue of conditions later in this decision.

76 For present purposes we note however that the s 42A reporting officer expressed the strong preference that there should be no provision within the consent authorisations granted for continued discharge of untreated wastewater through the pump station overflows.

77 Instead, it was recommended that any such discharge situation would need to fall within the rubric of s 330 of the RMA (emergency works), on the basis that this should be a rare occurrence, and the degraded state of the Wairoa River should not be used as justification or an excuse to consent such discharges "as and when the Applicant deems necessary".[55]

Tikanga – the Cultural Dimension

78 As also touched on above, the most significant and pervasive issue surrounding this application is what can loosely be termed as the "cultural" dimension, but which we prefer to refer to as tikanga (customary Māori traditions and practices).[56]

79 Geographically, that context to the application derives from the significance of the WWTP plant site itself, along with the Wairoa River, from source to sea, as a resource of great significance to Māori in the region.

80 In the lead up to the application, the Council commissioned two specific reports regarding issues of tikanga and mātauranga, along with tangata whenua values, engaged by the continued discharge of wastewater to the Wairoa River, particularly at a point so close to the rivermouth and within the context of the Whakamahi Lagoon Reserve.

81 The first report (entitled "Tangata Whenua World Views on Wastewater Management in Wairoa") was prepared by Mr Nigel How, with input from Mr Duane Culshaw (the District Council's Māori Relationships Manager), along with Katarina Kawana, Naomi Wilson and Michelle McIlroy (as tangata whenua representatives on the Wairoa Wastewater Stakeholder Group).

82 Notably we heard from both Ms Kawana and Ms McIlroy as submitters to the hearing.

83 The World Views report was followed up by a Cultural Impact Assessment (CIA).

84 A key recommendation of the CIA was that:

[55] Paragraphs 102 and 132 of the s 42A report.
[56] The term 'Tikanga' can be interpreted as an abbreviation of 'tikanga Māori' - they are interchangeable.

A commitment [be] made to continue research into achieving 100% drinkable water quality for the wastewater discharge to waterways as an alternative option to 100% based wastewater discharge.[57]

85 The World Views report recommended that the wastewater discharge location should be land-based, and avoid wāhi tapu areas.[58]

86 These reports informed the view expressed in the AEE itself that the "current discharge is culturally unacceptable".[59]

87 A further specific issue raised in the context of the cultural dimension relates to the fact that the WWTP receives mortuary waste, being a matter of specific concern to a number submitters, and with Version 22 containing conditions aimed at ultimately prohibiting mortuary waste from entering the sewer and treatment system.[60]

88 As noted above, the fundamental tension raised by this application derives from:

(a) The fact that the aspirations for progressive removal of the discharge of wastewater from the river to address the cultural dimension are contingent on very significant capital investments in land-based irrigation, including the acquisition of substantial areas of land, none of which have yet been identified or secured; and whereby

(b) There is a very small and limited ratepayer base able to sustain the degree of investments required.

89 In light of the various uncertainties as to the ability to deliver on the aspirational programme in order to meet the recommendations of the CIA, and to address the very strong concerns presented by submitters at the hearing to equivalent effect, at the conclusion of the hearing we issued a Minute directing that a range of additional information be provided by the Council before our deliberations would resume.

90 That information included:

(a) **The concession application** – advice and confirmation over the anticipated timeframe for a decision on the concession application, as to the establishment and make-up of the Reserves Board considering the application, and as to the Council's intentions including for an alternative (or temporary) outfall or contingency in the event the concession is declined, including to deal with the existing surcharge outfall discharging to the riverbank at the Fitzroy Street pump station.

(b) **The extent of capital provision made in the Long Term Plan for key elements of the Package** – noting that this should include as now available to the Council as a result of the $11M *Three Waters* initial/interim funding already received.

[57] Paragraph 74 of the s 42A report, citing section 9 of the CIA page 24.
[58] Page 21.
[59] Section 8.8 of the AEE.
[60] Proposed conditions 40 to 42 of Version 22.

(c) **Specific milestones/performance measures regarding the Inflow and Infiltration programme,** including consequent projected implications in terms of reduced wastewater volumes needing to be stored, and discharged to either land or the river over time.

(d) **A more detailed assessment of potentially suitable and appropriately located land discharge sites** sufficient to accommodate the remaining (better managed though I&I) wastewater volume over time, along with the likely capital cost range for acquisition and development of the land to the purpose, and (unless covered under (b) above), the extent of current Long Term Plan funding provision for such already in place.

(e) **Fixed deadlines or timeframes for progressively increasing adoption of land-based discharge,** i.e. the specific deadlines which, *assuming* land acquisition can be effected, the Applicant can commit to, whereby increasing volumes of the current discharge *will be* directed to land over the duration of the consent (and failing which, what alternative options would be considered and implemented over time, to the same end).

(f) **The *Three Waters* reform proposals** - submissions or information on the relevance and implications of these reforms as currently in train, including both structurally (as to wastewater asset ownership and funding over the intended life of the consent/assets concerned) and regarding further "Tranche 2" financial support as signalled by the Government, to potentially address the affordability issues raised by the Applicant in implementing the Package.

(g) **Storage to avoid discharges during periods of river mouth closure** – advice as to the ability to accommodate the amount of storage needed (estimated to be up to 20,000 m^3 by Mr Smith), having regard to the likely duration of river mouth closure events (based on the records of such events to date).

(h) **Mortuary waste** - a more definitive outline and understanding of the options available to address this concern, (rather than deferring this matter for a report within 12 months of the commencement of consent).[61]

(i) **Mahinga kai** – an independent assessment of both values and effects in relation to the topic, as addressed in evidence by the submitters at the hearing, prepared by a suitably qualified expert in mātauranga Māori, as it relates to mahinga kai.

(j) **Quantitative Microbial Risk Assessment** - an independent assessment to better determine health effects associated with both recreational use and continued customary fishing practices, at the level of water treatment plant performance able to be achieved through the proposed tertiary management steps (UV treatment and sand filter), with reference to the limits in (proposed) condition 14, and the rates of dilution achievable at the existing and proposed (replacement) outfalls.

(k) **An assessment of any "equivalent" situations** - for municipal wastewater discharges into river mouth/estuary environments in New Zealand, having regard to both (western science) ecological considerations, and cultural relationships/values, including any recent Environment Court decisions addressing the type of scenario presented here (minor localised adverse ecological impact, but significant or unacceptable effects on tikanga).

[61] Proposed condition 40 of Version 22.

91 It was directed that this information be provided by 30 June 2021, with an extension granted to 31 July 2021.

92 In parallel with that request, we directed that expert conferencing take place regarding a range of issues raised in evidence and during the course of the hearing, as between experts for the relevant parties including the Applicant (WDC), consent authority, and submitters. The expert conferencing topics subject of the relevant directions to that end, were all linked to the relevant conditions of Version 22.

93 The outputs of that expert conferencing have informed this decision (through what became Version 25 of the consent conditions), along with the information received as directed and set out above.

Issues in Contention

94 Against that background, the relevant issues in contention needing to be determined through our deliberations in reaching this decision can be briefly recorded as follows:

- Alternatives (land and other alternatives, including a coastal discharge location as raised in evidence at the hearing).
- "Milestones" – timeframes and certainty particularly for delivering I&I outcomes, for the new pipeline and outfall to be commissioned and completed, and to secure additional storage along with land irrigation capacity in order to progressively reduce the volume of discharge to the river.
- The most effective and appropriate consent condition framework to secure the relevant milestones and timeframes (including issues of consent review, review triggers and consent duration).
- Technical issues assessed from a western science perspective and including the following specific topics:
  - Hydrodynamic modelling of the dilution and dispersal of wastewater in the receiving environment
  - Ecological effects, including: the current state of the estuary; current and potential future effects of discharges from the WWTP; rivermouth closures (additional effects and controls and monitoring), potential effects of extending the pipeline on macrobenthos and bed sediments; and potential effects arising from the occasional, as and when needed, relocation of the outfall diffuser that is attached to the pipeline
  - Potential adverse effects on mahinga kai associated with discharges from the WWTP and with construction and maintenance of the new outfall

  - Human health, including: safety of surfers and fishers; ultraviolet disinfection and pathogen reduction/removal; and performance measures for ongoing and proposed reticulation network improvements

  - Plant operation, including: the need for specific conditions relating to sludge management; and the perception that the proposed discharge regime is less restrictive than the current regime

- Māori cultural (tikanga) impacts including as to mahinga kai and appropriate consent conditions for cultural health monitoring (such as the Mauri Compass)

- Removal of mortuary waste

- The requirements (provisions and tests) of the statutory framework and planning instruments, as summarised and identified below.

Statutory Framework – Activity Status

95 The s 42A report details the range of "consent triggers" set through the provisions of the Hawke's Bay Regional Coastal Environment Plan (RCEP) and the Regional Resource Management Plan (RRMP).[62]

96 In summary, a number of discretionary and restricted discretionary consents are needed for:

- The discharge of treated wastewater into the Wairoa River.

- The construction of the new main outfall structure, and its modification over time.

- Disturbances of the riverbed and associated earthworks/vegetation removal involved with constructing the new outfall.

- The discharge of untreated wastewater from the pump station overflow outfalls.

- Occupation of the riverbed (including where the outfall is located within the coastal marine area).

- The discharge of contaminants into air.

- Retrospective approval for previous modifications to the outfall structure as summarised above.

97 The consent triggers as identified in the s 42A report arrear to be equivalent to those identified in a document included with the AEE, entitled "Planning Assessment", and prepared by Stradegy in November 2018.[63]

[62] Table 5, paragraph 29 of the s 42A report.
[63] Stradegy, 2018:C9, Table 3.

98 It is therefore common ground that the application falls to be assessed as a discretionary activity applying the tests set under s 104 of the RMA whereby, in considering the application and submissions received, we must, subject to Part 2 of the Act, have regard to:

(a) any actual and potential effects on the environment of allowing the activity; and

(b) any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity; and

(c) any relevant provisions of—

(i) a national environmental standard:

(ii) other regulations:

(iii) a national policy statement:

(iv) a New Zealand coastal policy statement:

(v) a regional policy statement or proposed regional policy statement:

(vi) a plan or proposed plan; and

(d) any other matter the consent authority considers relevant and reasonably necessary to determine the application.

99 One particular matter of planning significance relates to the location of the outfall structure and discharge relative to the coastal marine area (CMA) as defined in s 2 of the RMA and whereby, for a river, the landward or boundary is at that point which is the lesser of:

(i) 1 kilometre upstream from the mouth of the river; or

(ii) The point upstream that is calculated by multiplying the width of the river mouth by 5.

100 The term “coastal margin” is employed under the RCEP to delineate the jurisdiction of the RCEP as opposed to the RRMP. It is important to note that the CMA for the purpose of s 2 of the RMA, and the coastal margin, are not the same thing. The coastal margin as defined under the RCEP is more extensive than the CMA.

101 Figure 5 to the s 42A report illustrates the “coastal margin” as applied under the RCEP, which not only extends over land either side of the river near the rivermouth, but significantly further “upstream” than the CMA itself.

102 The s 42A report advises that the outfall structure and discharge point are within the CMA (thus requiring an occupation consent under s 12 of the Act).

103 As also advised in the s 42A report, the Kopu Road pump station outfall is within the coastal margin (but not the CMA).[64] Conversely, the Alexandra Park and North Clyde outfalls are outside both the CMA and the coastal margin.

104 Another material boundary issue relates to application of the New Zealand Coastal Policy Statement (NZCPS).

105 Policy 23 of the NZCPS states as follows:

> In managing discharge of human sewage, do not allow:
>
> (a) Discharge of human sewage directly to water in the coastal environment without treatment; and
>
> (b) The discharge of treated human sewage to water in the coastal environment, unless:
>
> (i) There has been adequate consideration of alternative methods, sites and routes for undertaking the discharge; and
>
> (ii) Informed by an understanding of tangata whenua values and the effects on them.

106 During the course of the hearing, Mr Drury expressed the view that Policy 23 (as to untreated sewage) did not apply, given the point of discharge (from the Kopu Road outfall) was not within the CMA.

107 We find that the policy does apply, as it extends more broadly to the coastal environment than just the CMA. Figure 1 to the Planning Assessment clearly identifies the Kopu Road outfall within the coastal margin as applied under the RCEP, which the RCEP records comprises the coastal environment (section 1.1.3). We also consider that this site would fall within (at least) Policy 1 (2) (c) of the NZCPS in defining the coastal environment (areas where coastal processes, influences or qualities are significant, including tidal estuaries).

108 The NZCPS therefore directs that we must not allow the discharge of untreated wastewater (as currently occurs from the Kopu Road emergency outfall). In our view, this national direction effectively precludes resource consent approval for that aspect of the overall proposal as put to us in the applications. We address that constraint later in this decision.

109 Beyond these points, the Planning Assessment contains a thorough and helpful overview of all of the provisions of the planning instructions that apply to the assessment of this application and to which we must have regard under s 104 of the RMA.

110 These include the provisions of:

- The NZCPS
- The Hawke's Bay Regional Statement (RPS)

[64] Page 22.

- The RCEP
- The RRMP
- The National Policy Statement for Freshwater Manager (2017).

111 One highly material planning instrument which is not addressed in the Planning Assessment is the National Policy Statement for Freshwater Management 2020 (NPSFM 2020) which came into force in August 2020.

112 Central to the tikanga or cultural dimension of this case is what is described as the "fundamental concept" of the NPSFM 2020 – Te Mana o te Wai.

113 In this respect, the NPSFM 2020 states as follows:

1.3 Fundamental concept – Te Mana o te Wai

Concept

(1) Te Mana o te Wai is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. It protects the mauri of the wai. Te Mana o te Wai is about restoring and preserving the balance between the water, the wider environment, and the community.

(2) Te Mana o te Wai is relevant to all freshwater management and not just to specific aspects of freshwater management referred to in this National Policy Statement.

Framework

(3) Te Mana o te Wai encompasses 6 principles relating to the roles of tangata whenua and other New Zealanders in the management of freshwater, and these principles inform this National Policy Statement and its implementation.

(4) The 6 principles are:

(a) *Mana whakahaere:* the power, authority, and obligations of tangata whenua to make decisions that maintain, protect, and sustain the health and well-being of, and their relationship with, freshwater

(b) *Kaitiakitanga:* the obligation of tangata whenua to preserve, restore, enhance, and sustainably use freshwater for the benefit of present and future generations

(c) *Manaakitanga:* the process by which tangata whenua show respect, generosity, and care for freshwater and for others

(d) *Governance:* the responsibility of those with authority for making decisions about freshwater to do so in a way that prioritises the health and well-being of freshwater now and into the future

(e) *Stewardship:* the obligation of all New Zealanders to manage freshwater in a way that ensures it sustains present and future generations

(f) Care and respect: the responsibility of all New Zealanders to care for freshwater in providing for the health of the nation.

(5) There is a hierarchy of obligations in Te Mana o te Wai that prioritises:

(a) first, the health and well-being of water bodies and freshwater ecosystems

(b) second, the health needs of people (such as drinking water)

(c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

114 Policy 1 of NPSFM 2020 states as follows:

> Fresh water is managed in a way that *gives effect* to Te Mana o te Wai.

115 In the course of the hearing, Commissioner Williams put to Mr Drury, and he agreed, that while all of the various provisions of the planning instruments covered in the Planning Assessment are relevant, the most material to our deliberations are as follows:

- NZCPS Policy 23
- NPSFM 2017 Policy A4 (implemented through Policy 72A of the RRMP)
- RPS Objectives 34, 35, 37 and 40 (and associated policies)
- RCEP Objectives 16 and associated Policies 16.1 and 16.2
- The concept of Te Mana o te Wai and Policy 1 of NPSFM 2020.

116 The text of these most material provisions is as set out in Appendix 1 to this decision.

117 For completeness, we record that Mr Drury (who prepared the Planning Assessment) gave evidence clarifying that while the outfall was located within the Whakamahi Lagoon Wildlife Management Reserve, the discharge itself was not located within that reserve[65] such that a concession is not required for the discharge but only the new outfall structure itself.

Notification and Submissions

118 The application was publicly notified on Tuesday 13th August 2019 and closed on Tuesday 10th September 2019.

[65] Paragraphs 16 to 17 of Mr Drury's evidence.

119 22 Submissions were received in total, five of these submissions were neutral, one was in support of the proposal and 16 were in opposition to the overall proposal, or specific parts of the proposal.

120 Two of the submissions were received by HBRC after the submission period had closed; these were the submissions received from Ngā Tokorima a Hinemanuhiri Trust and a joint submission from Ngāti Kahungunu Iwi Incorporated (NKII) and Ngāti Kahungunu (Wairoa Taiwhenua) Inc. The Applicant confirmed that there was no concern with the two late submissions being received and the s 42A report notes that a decision is requested of the commissioners to extend the time limit pursuant to s37(1)(b) for lodging submissions directed by s 97(2). That extension is hereby granted.

121 There were originally two submissions in support of the application (submission 11 – John Waihape and 15 – Christina Stockman). On receipt, these two submissions did not appear to support the proposal and the reporting officer sought clarification from the submitters. Christina Stockman (submission 15) confirmed her submission was in opposition rather than support once submissions had closed. No response was provided from John Waihape (submission 11), however the s 42A report notes the wording of the submission is not supportive of the application.

Hearing

122 The hearing was held over two days on Monday 30th November 2020 – 1st December 2020 at the War Memorial Centre, Queen Street, Wairoa.

123 The Applicant (WDC) and their technical experts were heard on 30th November.

124 Public submissions on the application were heard on 1st December, the second day of the hearing.

125 At the outset of the hearing, an objection was raised by one submitter (Ms McIlroy) to Commissioner Williams' presence on the Hearings Panel, in light of the way it was assumed he had voted on the issue of Māori seats as a regional councillor earlier that month. After hearing from Ms McIlroy (and other submitters who wished to comment), the Panel conferred and resolved that Commissioner Williams was competent to continue in the role as Chair, retaining a sufficiently open mind on the issues raised by this application, and without any "conflict of interest" arising of relevance to this hearing.

Evidence Presented

<u>Mr Matthew Lawson</u>

126 At the commencement of the hearing Mr Lawson, legal counsel for the Applicant, presented a synopsis of opening submissions addressing the range of resource consents sought, and noting in particular the two consents sought for the potential discharge of untreated wastewater from the pump station overflows.

127 Regarding those overflows, he observed that any discharge would only take place during periods of very high rainfall and infrequently, noting the considerable work done to minimise the risk of those overflows occurring and attempts made to avoid them if at all possible.

128 Mr Lawson referred to three fundamental principles that he submitted must be acknowledged:

(a) Firstly, the Wairoa township has a population of approximately 4,600 people currently serviced by a reticulated wastewater system. On-site wastewater disposal for the township is not an option.

(b) There is currently a reticulated wastewater system, the need for which is ongoing, with a corresponding need for a wastewater discharge of some sort.

(c) That there is widespread if not unanimous support for the proposition that if there is an economically viable and affordable alternative to the discharge of wastewater to the Wairoa River, that would be preferred.

129 Mr Lawson gave an overview of the proposal with the suite of applications seeking to introduce a new wastewater discharge regime incorporating filtration and ultraviolet disinfection treatment of the secondary treated waste stream, the establishment of additional storage capacity at the wastewater treatment plant, and a discharge regime for more restricted and limited discharge at times of reduced river flows.

130 Mr Lawson submitted that while providing greater flexibility for levels of discharge when the River is at or above three times the median flow, aligning the timing of the discharge with the outgoing tide and river flow conditions, means that they would occur when most appropriate in terms of flushing the discharge from the river, and mitigating the possibility of effects on public use by ensuring that the discharge "occurs during effectively flood periods when the use of the river mouth for recreation and food gathering would not be possible".[66]

131 Mr Lawson referred to the proposal as involving a "stepwise" increase in the ability to manage wastewater discharges, recording the concern identified during consultation and engagement that the community did not want WDC to "simply obtain consent, put it in the drawer and carry on discharging until such time as the next resource consent renewal was required".[67]

132 Mr Lawson referred to the conditions requiring WDC to undertake a review of the system to "look at" increased storage, greater use of discharges to land and a more refined discharge regime that avoids discharges when river flows are less than half the median flow.[68]

133 Mr Lawson then submitted as follows:

> It is acknowledged that these conditions requiring a review of the system are aspirational and the implementation of those aspirations could only be achieved if it is affordable for the Wairoa

[66] Paragraph 13 of Mr Lawson's submissions. We note Ms McIlroy's observations on this point, as recorded later in this decision.
[67] Paragraph 15 of Mr Lawson's submissions.
[68] Ibid.

community or outside funding was available. While the concept of moving to a fully land-based system is easy to say, we cannot avoid the fact that it is currently beyond the financial capabilities of the community and any move to land-based disposal requires long term commitment, long term planning and long term financial management.[69]

134 Mr Lawson gave an overview of the application and engagement process preceding the application, culminating in a February 2018 Council decision to adopt what was referred to by the Applicant (including in evidence) as the "Package", of which this suite of applications forms part.[70]

135 Mr Lawson submitted that consultation had been fulsome and meaningful and that to the extent there is still opposition to the application, this reflects the already acknowledged reality that all parties would prefer for there to be no river discharge.[71]

136 In addressing the s 42A report, Mr Lawson submitted that the concession process was not one which the Hearing Commissioners need turn our attention to (as addressed earlier in this decision). His submission was that obtaining the current resource consents would, in line with Court of Appeal authority, simply be to no avail unless the concession from the Matangirau Reserves Board was forthcoming.

137 Mr Lawson also addressed the issue of consent duration with reference to Rule 29.2.3 of the RCEP, noting that the programme of staged improvements and system reviews is such that a consent duration of 27 years is necessary for full implementation of those conditions as proposed.

138 Mr Lawson also submitted that there were no "disqualifying features" identified in RCEP s 29.2.3 which would mean that a term of less than 35 years is appropriate.

139 Finally, working within what is "realistically affordable for the community", Mr Lawson referred to aspirations reflecting the community's commitment to "continually strive" to move to a better form of discharge, and ultimately should an affordable option present itself, to a land-based discharge regime. Mr Lawson submitted that the Applicant is seeking to make a commitment to its community to "continually strive" for a better outcome and the conditions of consent to hold it to that commitment.

140 While presenting his submissions, Mr Lawson acknowledged that the Applicant cannot shy away from the Māori tikanga effects, and that the essential contest presented by the application is between the effects on the Māori tikanga values and community, on the one hand and the ability of that community to afford a land-based solution, on the other. Mr Lawson described this is a "fine line" that has to be trod, but submitted that the Council had set in train an aspirational process, with measures to "lock in" that aspiration.

[69] Paragraph 16 of Mr Lawson's submissions.
[70] Paragraph 24 of Mr Lawson's submissions, refer also overview of Mr Heath's evidence below and section 1.0 of the CIA.
[71] Paragraph 26 of Mr Lawson's submissions.

141 In answers to questions, Mr Lawson expressed a preference for reporting dates requiring substantial progress over fixed dates for particular steps to be achieved such as securing land for irrigation, or a shorter duration of consent which he submitted would mean that the Council loses momentum. Mr Lawson elaborated on the complexities associated with identifying suitable land for irrigation which would not only need to be available, but be of sufficient area, slope and appropriate soil type i.e., "it would have to work" for the irrigation purpose desired.

142 Mr Lawson submitted that a potential review being triggered, if (for example) the initial 50 hectares of land was not secured within a given timeframe (following which the discharge regime becomes more restrictive), would not advance the situation very far beyond the framework of conditions already put forward.

143 It was put to Mr Lawson by Commissioner Kirikiri that the conditions framework "lacked punch" in terms of locking in specific commitments or "stakes in the ground along the way". Mr Lawson responded that the Council was trying to avoid any impression of simply putting the consent in the drawer, or whereby it had not taken any steps, but instead that the Council is held to its objective of undertaking reviews and reporting on progress in terms of looking at the options, doing the trials and moving to a land-based discharge over time.

144 Mr Lawson did however acknowledge that amendments could be made to ensure that the Council was required to go through the processes and give genuine and proper consideration to alternatives for a continued Wairoa River discharge.

Dr Shaw Mead

145 Dr Mead, an environmental scientist employed at eCoast, provided expert evidence on ecological and numerical modelling investigations and assessments that he had conducted to date for the Applicant.

146 Dr Mead described the Wairoa rivermouth estuary as "sediment stressed".[72] He acknowledged that it was difficult evaluating impacts of the current outfall on the estuarine benthos given "low species diversity and wider degraded nature"[73] of the estuary but, nevertheless, and based on existing (albeit limited) historical data, concluded that "the existing discharge does not appear to be compounding the effects of sediment stress to a substantial degree" and that "the impacts of the existing discharge are considered to be no more than minor and localised (within 100 m of the existing outfall)".[74] Dr Mead's view was that "benthic ecology and habitat quality in the estuary are impacted by catchment activities, which are mainly associated with high fine sediment loads".[75]

147 Dr Mead described the numerical modelling of the estuary hydrodynamics that he had performed for the Applicant to assist with the assessment of potential ecological effects and with certain elements of the project design. The modelling results are contained in three

[72] Dr Mead's statement of evidence, 16 November 2020, para. 20.
[73] Ibid., para. 24.
[74] Ibid., para. 25.
[75] Ibid.

technical reports that address: a variety of current and future outfall scenarios and overflow events; extreme events for scour protection calculations; and modelling of the new/extended outfall location with comparison to the existing outfall location. Dr Mead described how he calibrated the model, and argued that the modelling results are conservative, fit for purpose and reliable.

148 Dr Mead presented an assessment of the environmental effects on the marine ecology in the estuary due to the proposed discharge with the outfall in its present location, and a second assessment with the outfall extended 200 m into the channel. A specific assessment was undertaken to support the application for a concession for the new extended outfall, which was supported by additional survey data (September 2020) that showed the presence of adult pipis along the final ~50 m of the proposed extended pipeline route and at the diffuser.[76]

149 Dr Mead's opinions are clear: given that there is "little evidence for negative environmental effects for sediment quality and benthic community composition associated with the existing wastewater discharge"[77] and that "the strategic staged modifications will improve the wastewater quality"[78] then the "the potential for negative impacts … [is] likely to be negligible over the longer term".[79] With the extended outfall, "dilution will occur more rapidly", which will be an "improvement with respect to environmental impacts".[80]

150 Dr Mead also opined that "improvements to the benthic ecology will also rely on improvements being made to upstream catchments to reduce sediment and other contaminants entering the Wairoa River that are transported to the lower estuary".[81]

151 Dr Mead assessed the potential environmental effects arising from construction and operation of the extended outfall. Direct construction effects were assessed as being minor, short-term and localised; indirect effects were assessed as being minor to less than minor against the background of sediment stress in the estuary.[82] Ways to minimise impacts on pipi (and the benthic ecology in general) during construction were listed, which are to be included in a proposed construction Environmental Management Plan.

152 During questioning and regarding his modelling, Dr Mead clarified that by "worst case scenario"[83] he was referring to the horizontal position of the rivermouth used in his model. He also confirmed his view that physical mixing is the dominant process that governs the dilution of effluent in the receiving environment, which legitimises his decision to model a conservative tracer rather than specific contaminants. Dr Mead explained his view that it was extremely unlikely that effluent could pond upstream of the outfall, and described the model runs that he

[76] Ibid., paragraphs 30 and 50.
[77] Ibid., para. 46.
[78] Ibid., para. 48.
[79] Ibid.
[80] Ibid., para 49.
[81] Ibid., para. 48.
[82] Ibid., para. 52.
[83] Ibid., para. 33.

had done to confirm that view. Dr Mead also explained and defended the way he calibrated the model using salinity data.

153 Regarding the estuary ecology, Dr Mead agreed with each of Mr Smith's conclusions in his statement of evidence.[84] Dr Mead also agreed with Mr Smith that there are no observations of the state of the estuary during times when the rivermouth is closed / restricted, and confirmed that there had been no modelling of periods of rivermouth closure. Dr Mead affirmed that, even without any of the "aspirational" components of the project, he would still expect improved wastewater treatment and associated "environmental benefits". Dr Mead was asked whether he was confident that his expanded sampling regime (that is, eCoast's 2018 sampling with 7 additional new sites[85]) shows the same result – no or very localised impact – as earlier work that used an apparently faulty methodology, to which he replied "yes'". Dr Mead was asked to comment on potential effects in the shallow coastal area seaward of the rivermouth. He replied that, from first principles (consideration of dilution, distance from outfall, water depth and the like), he would expect there to be no effects.

154 Dr Mead was asked what his opinion would be as to the effects of the discharge on the estuary in its current state, assuming that the current applications were for a new proposal (rather than renewal of existing consents) and also relative to a future environment with improved background sediment loadings as are likely to eventuate over the requested term of consent.

155 In both contexts, Dr Mead advised that his opinion would remain that, in ecological terms at least (that is, putting aside tikanga ł concerns), the effects would remain minor and localised given the extent of dilution achieved, particularly the with the outfall in its new location.

Mr Gary Teear

156 Mr Teear, a Director of Offshore & Coastal Engineering Limited, which is an engineering consultancy firm specialising in marine/maritime work, described the existing discharge structure and explained its limitations, including that it is frequently blocked by sediment as the main channel moves (which necessitated the installation of a riser in 2017 to lift the discharge above the riverbed) and that the outfall is coming to the end of its economic life. This necessitates replacement, by a more resilient structure that discharges directly into the middle of main channel. Mr Teear described the design parameters and resulting design solution, which involves a new 400-m-long polyethylene pipeline with a diffuser structure installed at the end of the pipeline. The pipeline will be buried in a trench, with piles providing lateral stability, and the diffuser will extend above the riverbed. Mr Teear also described the proposed construction methodology.

157 During questioning, Mr Teear confirmed that the new structure had been designed to withstand impacts by trees that are frequently brought down in floods, and that the new outfall with its greater capacity had been designed to completely eliminate surcharge overflows. Mr Teear clarified that repositioning the riser (to respond to future riverbed migration) will not be a matter

[84] Mr Smith's statement of evidence, 23 November 2020, paras. 35–59.
[85] eCoast (2018) Report A3D3.

of literally "sliding" the riser to a new position. Rather, a hole will be drilled in the pipeline at the new location, and the riser attached above the new hole.

158 Mr Teear also explained that in his opinion the proposed pipeline trench depth (1.5 m) was achievable, and more cost effective than the greater depth of 2 m suggested by the Council's reviewing engineer, Mr Kuta, with geotextile bags covering the final 20 m of the pipeline as proposed by Mr Kuta to provide additional protection from scouring.[86] We record here, that we accept that position.

Mr Philip Lake

159 Mr Lake, an environmental scientist at Lowe Environmental Impact Limited, described the preliminary design of the sand filtration and UV disinfection system, pointing out that WDC "need certainty of its consent requirements before investing further time and funds".[87] On the matter of performance measures for the UV system, Mr Lake opined that, "if the discharge quality within the limits set for the period prior to installing UV is found to be acceptable for discharging to the river (and it seems that HBRC accept that it is), then there is no reason to lower those limits after installing UV simply because it is more capable of achieving lower limits …. [especially since] the effects of the current discharge are less than minor as indicated by Dr Shaw Mead [in his evidence]".[88]

160 Mr Lake showed data that demonstrated that "the wastewater quality prior to 2010 is not much different from that of more recent years", which he opined as being due to decreased dilution of the wastewater stream achieved by improvements in I&I performance tending to be balanced by improvements in the WWTP treatment performance [that are gained when the wastewater stream is less dilute].[89]

161 Mr Lake discussed differences of opinion on the value of the median flow for the Wairoa River, to which the proposed discharge regime will be tied. A value of 60 m^3/s was used "throughout the conceptual design, hydrodynamic modelling, consent application AEE, and consent conditions".[90] However, HBRC hydrologists now consider the median to be 79 m^3/s. Mr Lake opined that such an increase in the value of the median river flow (as dictates the discharge regime, being proportionate to that flow) will "not greatly affect WDC's ability to meet the discharge criteria, and will probably have minimal effect on the numbers of days per annum that discharges occur for each river flow bin" (i.e., not affecting the number of days above and below median flows).[91]

162 Mr Lake addressed a concern raised by submitters, which was that the proposed discharge regime appeared to be less restrictive than the existing regime. Mr Lake opined that the proposed regime was more restrictive below 3x the median river flow, to protect river water

[86] Paragraph 21 of Mr Kuta's evidence.
[87] Mr Lake's statement of evidence, 16 November 2020, para. 15–17.
[88] Ibid., para. 19.
[89] Ibid., para. 12 and 13.
[90] Ibid., para. 24.
[91] Ibid., para. 26.

quality and ecology, but less restrictive, "in terms of volume and timing than the current discharge limits only when the river is in flood, which is when the discharges will have no or negligible effects and wastewater flows typically increase dramatically".[92]

163 Finally, Mr Lake commented on the "vital" need for storage for "achieving the proposed discharge regimes both to the river and for implementing appropriate land discharge systems".[93]

164 During questioning, Mr Lake was asked to comment on concentration-based versus load-based effluent standards. Mr Lake favoured the former, because the discharge regime is tied to flow, and concentration-based limits guarantee proper dilution in the receiving environment. Mr Lake conceded, though, that concentration-based standards cannot necessarily guarantee any improvement in plant performance, as load-based standards might. Mr Lake also expressed confidence that WWTP treatment performance would not be affected by any decreased dilution of the wastewater stream achieved by improvements in I&I performance.

Mr Stephen Heath

165 Mr Heath, employed by WDC as Group Manager for community assets and services, gave a background to wastewater treatment in Wairoa and summarised the consultation process associated with this application, a key aspect of which has been "strong inclusion of local Māori".[94] Mr Heath acknowledged that consultation has consistently shown that "land discharge is the long-term goal of both the community and WDC", which has therefore committed to developing land treatment, but also noted that "all parties have acknowledged that it will be expensive, difficult, and over many years".[95] Mr Heath noted that the reality is that river discharges cannot stop any time soon, but that the addition of filtration and UV treatment along with changes to the discharge regime (all part of this application) are seen to address public health, recreation and some of the tikanga concerns expressed about a continued river discharge.

166 Mr Heath sees the current application as part of what he referred to as a "much wider package", the components of which include "reticulation improvements, storage, additional treatment, land application, continued river discharge and Wairoa River enhancement work".[96] A "fundamental requirement of the Package is the continual discharge, at least in the short term, of wastewater to the Wairoa River".[97]

167 To conclude, Mr Heath outlined WDC's past improvements to reticulation, pump stations (installation of chopper pumps), and the WWTP prior to lodging the consent applications, and reiterated that "implementation of land discharge systems requires time, consents, and funds. The river discharge consent needs renewal regardless and the river discharge needs to

[92] Ibid., para. 29.
[93] Ibid., para. 35.
[94] Mr Heath's statement of evidence, 16 November 2020, para. 16.
[95] Ibid., para. 17.
[96] Ibid., para. 20.
[97] Ibid.

continue until alternative land discharges are able to be implemented".[98] This, in his view, necessitates a 35-year consent.

168 During questioning, Mr Heath acknowledged that funding is currently not available to purchase land for the purpose of receiving treated effluent. Mr Heath also confirmed that no system could realistically operate without having recourse to overflowing pump stations from time to time, for instance, during power outages. When asked about performance measures for planned improvements to the reticulation network to reduce inflow and infiltration, Mr Heath responded that they could be formulated.

169 Mr Heath was also asked for his view on whether the authorisations sought for continued discharge of untreated wastewater from the pump station overflow discharge pipes would be needed in the longer term, particularly given the progress towards completion of the relining programme (400 properties fixed, 30% complete, aiming for completion of its current relining programme by March 2022), and expressed the view that at least emergency discharges would always be needed regardless, particularly for situations such as extreme weather events, power outages, chopper pump failure, tsunami or earthquake.

170 Mr Lawson also addressed that question, submitting that best practice would be to provide specific resource consent authorisation for continued discharges as and when they might occur, enabling better management and reporting than to rely on the emergency provisions of the RMA as a form of defence.

171 Mr Heath also confirmed that in his view, even with a scenario of full land disposal, the outfall and discharge would still be required, for emergency events. We note here that Mr Lowe appeared to give a similar answer, in noting the necessarily reduced irrigation capacity during winter, and unless some 10 hectares of storage was available.

Mr Hamish Lowe

172 Mr Lowe, an environmental scientist at Lowe Environmental Impact Limited and project manager, explained the process undertaken by the Applicant to develop their consenting strategy for managing wastewater in Wairoa and to engage with the community.

173 Mr Lowe explained how engagement was key for the Applicant from the outset and how consultation with the community helped to inform the consenting approach. Mr Lowe and his team understood from the outset that the community sought to remove the wastewater discharge from the Wairoa River but faced a challenge in how to achieve the objective of no river discharge given the limits of funding and proximity and suitability of available land for a land-based discharge. In looking at alternatives to the river discharge, soils within a 10 km radius of the WWTP were mapped to understand the capacity of the land to receive wastewater. It was determined that approximately 600 ha of land was required to allow land-based discharge and an additional 10 ha of storage would be required. Irrigation is estimated

[98] Ibid., para. 29.

at $20,000–$30,000 per hectare. As such, cost was considered the key limiting factor, particularly when weighed against community affordability.

174 In addition, there was acknowledgement of tikanga Māori and Mr Lowe's team sought information from Hastings District Council about their use of contact with land (Papatūānuku) to reduce tapu of the wastewater, however this option was ultimately considered to be tokenistic in terms of impacts and the overall restoration of the mauri of the river. Mr Lowe considered that more can always be done to incorporate tikanga values and welcomed discussion about how tikanga values can be further incorporated into the consent.

175 In his written evidence, Mr Lowe provided a summary and response to a series of discussions that had been had with submitters and HBRC in regard to the application since its lodgement and sought to clarify a number of issues raised since the application's lodgement.

176 Mr Lowe explained how a series of scenarios were considered, but ultimately no consent was sought for the discharge of wastewater to land given the fact that the Applicant was still in the process of securing land for a land-based discharge. To provide reassurance to the community that alternatives to the river discharge were being sought, the Applicant has helped to develop conditions of consent that it sees as locking WDC in to constantly reviewing and seeking opportunities to meet the target of ceasing discharge into the river.

Mr Cameron Drury

177 At the hearing, Mr Drury briefly addressed his written statement of evidence, principally focussing on the consent condition structure. The essential point being advanced by Mr Drury was that in this type of situation it would be preferable to set a framework rather than prescriptive requirements, given the "big steps" being contemplated and the time needed to achieve them over the lifetime of the consent.

178 Mr Drury gave an overview of the key conditions within Version 22 which were set to (as he put it) "bring the community along" as well as various other groups and stakeholders on a journey towards a new starting point, being (ultimately) the destination everyone wants to arrive at (land-based irrigation). He observed that there were multiple objectives and multiple parties who all needed to sit together at the table for this purpose. He noted that in terms of Condition 28 (Version 22) to do with cultural monitoring, WDC acknowledged that it was not best placed to undertake that and as such a structure had been put in place so that the Council would have to provide for it to be undertaken by the most appropriate people, with the outcomes to sit alongside the western science findings of the various monitoring obligations.

179 Mr Drury also referred to the system review reports that, with the involvement of the wastewater stakeholder group, would draw all of the various threads together, consider what had been working well, what could be improved, and with more funding available, WDC then committing to greater areas of storage and land-based irrigation.

180 Mr Drury was of the firm opinion that this type of approach was more effective and complete than a blunt consent conditions review process, given the opportunities for community

involvement throughout, with very clear objectives of what was sought to be achieved. By that, we took Mr Drury to mean that this approach was preferable to fixed reviews over short-term timeframes, or as set with reference to whether specific milestones such as adoption of land-based irrigation stages had in fact been achieved.

181 On being questioned regarding the key requirements of the various planning instruments, and as noted above, Mr Drury agreed that relative to his planning assessment, the key provisions were as set out earlier in this decision.

182 This included discussion of Mr Drury's view that Policy 23 did not apply to the Kopu Road pump station outfall.

Ms Michelle McIlroy

183 Ms McIlroy (Ngāti Kahungunu*)*, a tangata whenua representative on the Wairoa Wastewater Stakeholders Group, spoke to her submission and stated that she opposes the discharge of treated and untreated wastewater into the Wairoa River, and also opposes the 35-year consent duration applied for. Her opposition was primarily on the grounds that the continued discharge of wastewater into the Wairoa River was objectionable from a tikanga perspective, for reasons – amongst others – elaborated on by her support expert witnesses.

184 In addition, as a Tātau Tātau o Te Wairoa representative on the Matangirau Reserves Board, Ms McIlroy considered that she was obliged to oppose the application because both bodies were in opposition to it, and the discharge outlet is within the jurisdiction of the Board.

185 Ms McIlroy raised concerns about the process and the proposed activity, summarised as follows:

- How the Applicant engaged with the public in the pre-application stages of the project including not taking minutes of meetings and assurances that were made to the community not being followed through.
- The application submitted by WDC does not faithfully reflect the discussions with the community, particularly those on transferring the discharge to land.
- WDC had received funding for Three Waters reform from central government which Ms McIlroy considers could be better spent on removing the discharge from the river.
- The Applicant altered the recommendations/conclusions of the Cultural Impact Assessment such that the author had subsequently distanced himself from the report, and did not want his name associated with it.
- The "aspiration goals" referred to in the application do not provide a clear pathway to removing wastewater discharge from the Wairoa River.
- The proposed "24/7" discharge, although being more restrictive given the proposed minimum flow requirements, did not suit tangata whenua because:

- tangata whenua rely heavily on gathering kai from the awa,
- kai gathering practices occur at all hours of the day, and
- kai gathering practices occur under all flow conditions (including high flow).

- In the context of the hierarchy of obligations set out in "Te Mana o Te Wai", the discharge of wastewater does not enhance the mauri of the wai, but instead degrades it.
- The continued discharge of wastewater into the awa, particularly that of untreated and mortuary waste, is abhorrent and unacceptable, to tangata whenua. A means for dealing with this needs to be found soon!

186 In response to a question on what the duration of a new consent should be if the application succeeds, Ms McIlroy suggested 20 years – in line with the s 42A report recommendation. In her view this would not be unreasonable given the time it has taken to get to the point where the Council is at last giving the matter serious consideration. She stated that expeditious removal of discharge was preferable so as to restore the mauri of the awa as soon as possible. In the event, Ms McIlroy would like to see a timeline included as part of the consent, with milestones for improving the health of the wai and for the removal of discharge. As she put it, "there is no certainty in an aspiration" and how can consent be granted on a "may be"?

187 Ms McIlroy stated that she would also like WDC to be required to provide annual progress reports, and for there to be a warning system in place to alert the community to unforeseen events, like untreated discharges into the wai.

188 Nevertheless, her preference remained for the immediate cessation of discharge. Overall, her preference remained for the immediate cessation of the discharge.

Mr Adrian Manuel

189 Mr Manuel (Ngāti Kahungunu*)*, provided expert witness evidence for Ms McIlroy and gave examples of two alternative solutions for disposal of wastewater that did not require the discharge of wastewater into a waterway. This included a sewage system utilising wetlands in East Kolkata, India, and a waste processing system known as the "Living Machine" developed in Moray, Scotland.

190 Mr Manuel also highlighted how Ngāi Tahu is suing the Crown over ongoing degradation of waterways in their rohe, and how this demonstrates the shift in environmental management occurring in Aotearoa that this application would do well to heed.

Ms Hira Huata

191 Ms Huata (Ngāti Kahungunu), a recognised kaiako (teacher), artist and Ngāti Kahungunu advocate, also provided expert witness evidence for Ms McIlroy. She used pūrākau (story telling), karakia (incantation), waiata (song) and whakapapa to give context to the significance

of wai in the Māori world view, and therefore the pre-eminence of the Wairoa River as an example.

192 The bottom line for her is the fact that the Wairoa river is sacred and should be treated as such – fullstop! In her words:

He atua te wai	– Water is divine
Tiakina te kawa	– Safeguard its purity
I te pō, i te ao	– (And do so) at all times, night or day.

193 Ms Huata highlighted how the Wairoa River defines and provides identity for the people of Ngāti Kahungunu ki te Wairoa. Its whakapapa stretches back to Ranginui and Papatūānuku and its history in Aotearoa emanates from the voyagers on "te waka tapū o Tākitimu" (the sacred canoe Tākitimu). They are inseparable.

194 She stated that Tātau Tātau o Te Wairoa have "mana o te wai" and this needs to be respected in decision making process.

195 Ms Huata compared the western science viewpoint of the world – which compartmentalised water into discrete pieces of research – with the tangata whenua holistic view steeped in spirituality (atuatanga). For tangata whenua, the universe is one – the earth, man and water are linked, not separated entities.

196 Ms Huata also noted that the Wairoa rivermouth is a sanctuary for native and migratory species, where birds come for kai and fish come to live and spawn. But, as mentioned repeatedly throughout the hearing, the river's ability to sustain mahinga kai has been seriously curtailed. Nevertheless, Ms Huata argued that these species need to be protected, but that it is difficult to see how that will be achieved through the continuation of wastewater discharge into the awa for another 35 – or however many – years.

197 Ms Huata was adamant that sewage should not be discharged into water but should be "returned" to land, just like the placenta is in traditional Māori society, and the dead are too. Mankind originates out of Rangi and Papatūānuku and should ultimately return to Papatūānuku according to tikanga. Moreover, Ms Huata does not see an ocean outfall as an option, because that too cuts across the tikanga principle of returning everything to Papatūānuku.

198 She acknowledged that a move away from river discharge would take time, but noted that these systems were first implemented (she advised) in the 1980s, and for the Council to now be seeking a further 35-year consent is irresponsible. Ms Huata stated that new technologies for managing wastewater discharge are long overdue, and that the time for change was now.

199 Almost as a parting gesture Ms Huata questioned how scientists can conclude that discharge is acceptable when there are "No Swimming" warning signs along the river.

Ms Christina Stockman

200 Ms Stockman (Ngāti Kahungunu), presented as a kaiako, and as an operator of a waka ama programme on the Wairoa river.

201 She explained that the key goal of the waka ama programme is to sustain the oranga (wellness) of both young and older people, but this is proving difficult on the Wairoa River because of its degraded state (so much so, that some parents no longer allow their children to participate in the programme).

202 Ms Stockman added that paddlers are known to occasionally suffer ear infections and stomach upsets – yet wastewater continues to be discharged into the river.

203 She argued that because paddlers use the river a lot for recreational purposes, and over fairly wide areas, they have a good understanding of the state of the river and what is normal. Yet they seem not to be listened to as the discharge into the river continues unabated despite pleas to address the problem.

204 Ms Stockman acknowledged that whilst the WDC is not solely responsible for degrading the river, this is an opportunity for all to make a difference, the community and the Council together. However, at the present time, perceived mixed messages from the Council are considered worrisome.

205 On the one hand the Council supports activities like waka ama on the river, whilst on the other, they persist with discharging wastewater into it. This doesn't' make sense in her view.

206 The key message that the health of the Wairoa River is of prime importance, and that discharges into the river are no longer acceptable, is one Ms Stockman fully agrees with. What she wants, therefore, is a plan to put a stop to the discharge.

Ms Ina Kumeroa Kara-France

207 Ms Kumeroa Kara-France (Ngāti Kahungunu), spoke on behalf of Hope O Te Wairoa (RWT) Ltd Rangi-Houa Māori Land Owners Wairoa. She reiterated the points made in her statement of evidence, which in summary, advocated for:

- cessation of discharge;
- international best practice land-based discharge;
- financial compensation to the Wairoa community for the distress suffered over 20 years of discharge; and
- restoration of the mauri of the awa so that the water is drinkable and swimmable (again).

208 Ms Kumeroa Kara-France's written statement contained a helpful overview of Regional Council Cultural Values reporting with respect to recreation, ecology, fish, wildlife, landscape, scenic attributes and water quality.

209 At the hearing, she reinforced the statements of other tangata whenua expert witnesses with respect to the pre-eminence of the awa as a spiritual and cultural beacon for Ngāti Kahungunu.

210 A key concern of hers was the continued failure of the Council to interact directly with owners of land adjacent to the outfall in the face of ongoing opposition to the discharge.

211 Ms Kumeroa Kara-France compared degradation of the mauri of the awa to the social deprivation in Wairoa.

212 Ms Kumeroa Kara-France also drew a clear link between the culturally offensive nature of the discharge, and the high levels of poverty, substance abuse and gang activity, with whānau relationship breakdowns in the community.

213 Whilst Ms Kumeroa Kara-France acknowledged that the Applicant has included mauri monitoring and cultural engagement in the draft conditions of consent, she remains sceptical because Māori landowners have persistently been ignored and dismissed over the years.

Ms Esther Foster

214 Ms Foster (Ngāti Kahungunu), Managing Director of Hope O Te Wairoa Ltd Rangi-Houa Māori Land Owners Wairoa (and who owns land on the corner of Fitzroy and Kopu roads), spoke to her written evidence and declared her opposition to the application.

215 Her comments mirrored those of Ms Kumeroa Kara-France and previous tangata expert witnesses in referring to the awa as a "taonga", and in reinforcing the message that the Wairoa river had a personality and spirituality that needed to be more widely acknowledged and protected.

216 Ms Foster added that historically the river was used for baptisms, to bathe in, to drink, for food and for entertainment, and that it was once a transport corridor. She bemoaned the fact that much of this was no longer practised these days.

217 Overall, Hope O Te Wairoa would deem it offensive to be advised that they could not use the river to bathe, swim, fish or gather food, due to the wastewater discharge, and insists that the mauri of the river be restored. She also bemoaned the lack of engagement with Hope O Te Wairoa regarding wastewater discharged at their front door, and considered Hope O Te Wairoa to be a significant stakeholder.

Ms Katarina Kawana

218 Ms Kawana (Ngāti Kahungunu and Ngāi Tūhoe) gave evidence on behalf of Ngāti Kahungunu Iwi Incorporated (NKII), and submitted that a requirement of WDC to undertake mauri

monitoring as a condition of consent should be included. She noted that this was requested in the application as lodged.

219 In Ms Kawana's opinion, the importance of mahinga kai to the community has not been adequately represented in the (then) current version of consent conditions (Version 21). Māori view the awa as a supermarket or food cupboard (kāpata kai) and advised that gathering kai is a regular (daily) tangata whenua practice. Practitioners usually have a good understanding of the conditions of the area in which they are gathering kai, and in her view this makes them "experts" in no less a way than scientists are regarded.

220 Her submission also discussed the need for a monitoring tool as a means of measuring improvement to the mauri of the wai, and therefore the health of the awa – assuming the application proceeds. In this regard, Ms Kawana mentioned one such tool developed in nearby Gisborne – the "Mauri Compass".[99] Her evidence outlined the "3 Kete" application under this method; Tangata whenua, Tāne and Tangaroa, which she helpfully expanded upon at the hearing. Ms Kawana noted that WDC is interested in investigating the possibilities of using this tool, adding that, in the event, a monitoring programme has to be developed that is suitable for Wairoa, and which involves the right people. She described this method as "bridging the gap" between the western world view and the Māori world view.

221 Ms Kawana explained that tuna (eels) are used as a sentinel species to provide indicators for anthropogenic effects such as climate change or environmental degradation, and that it is species like this that should be used as indicators of the health of the awa.

Mr Shade Smith

222 Mr Smith (Te Rarawa, Te Aupouri), a consultant marine scientist at Triplefin Environmental Consulting, presented on behalf of NKII, and provided evidence on the effects of the outfall discharge on sediments and benthic ecology, and the potential effects of the proposed new outfall extension and discharge.

223 He concluded that immediately downstream of the outfall, treated wastewater is "likely to be having a persistent adverse effect on sediment quality from organic loading",[100] but [that] there are no effects on sediment composition,[101] and effects on the "oxic status of sediments beyond 50 m of the outfall are considered no more than minor".[102]

224 Mr Smith's assessment is that "the magnitude of the effect on infauna however is slight-minor, though there is also some evidence of a deterioration of infaunal characteristics of the Wairoa River as a whole".[103] When the rivermouth is unrestricted, the contribution of these localised, negative effects "to the suggested overall estuary deterioration is likely to be less than

[99] One of the founders of the Mauri Compass monitoring programme, Ian Ruru, was meant to have appeared before the panel but unfortunately was unable to make it on the day.
[100] Mr Smith's statement of evidence, 23 November 2020, para. 35.
[101] Ibid., para. 36.
[102] Ibid.
[103] Ibid., para. 59.

minor",[104] although at "times of river mouth restriction, when wastewater lingers in the basin, it is suggested that the discharge constitutes a significant adverse effect".[105] During questioning, Mr Smith conceded that, to his knowledge, there were no observations of such effects.

225 As for potential effects, Mr Smith commented that "given that the effects of the discharge are no more than minor during times when the river mouth is unrestricted around the outfall and that the composition of the treated effluent will remain the same, potential effects around the proposed site will depend on the sites [sic] hydrodynamic, physical and biological characteristics only".[106]

226 Mr Smith made a comparison between Dr Mead's dilution modelling and measurements of dilution from a 2007 study, which we comment on elsewhere, and also submitted that there are records that show that the rivermouth closes on average twice a year for "anywhere up to 7 days".[107]

227 Overall, under the current discharge regime, Mr Smith considered that the effects on the ecology and sediments around the outfall are no more than minor when the rivermouth is open and unrestricted, and but when the mouth is closed or restricted, adverse effects on ecology and human health are more than minor.[108]

228 At the hearing, Mr Smith advised that, when the rivermouth is closed, the effluent will impact the use of the receiving waters for recreation and for collecting kai moana (seafood) for human consumption. Mr Smith suggested creating storage to hold treated effluent for up to seven days as a possible solution. With an average daily flow of 2,700 m^3/day over seven days, 20,000 m^3 of storage would be needed. Mr Smith opined that rivermouth closure frequency and duration need to be taken into account to properly size storage of treated effluent.

229 Mr Smith also recommended that, to account for times of rivermouth closure/restriction, effluent discharge from the WWTP should be linked to actual discharge through the mouth of the estuary, rather than to just the river median flow. However, during questioning, Mr Smith was unable to provide details on how such an arrangement would work, or what information would be needed to underpin it.

230 Mr Smith opined that potential effects on larger-scale mahinga kai – pipi in particular – are not known with any certainty, mainly because the extent of the mahinga kai resource is not well known. This, in Mr Smith's opinion, warrants broad-scale habitat mapping and monitoring throughout the wider estuary.

231 Mr Smith further advised that despite the degraded health of the awa, the waterbody remains an important mahinga kai and should be protected accordingly. In response to questions from

[104] Ibid., para. 60.
[105] Ibid., para. 61.
[106] Ibid., para 63.
[107] Ibid., para. 72.
[108] Ibid., para.75,

commissioners, Mr Smith agreed that the awa is stressed and in a degraded state from many activities – not only those for which consent is being sought.

232 Mr Smith recommended monitoring of the cumulative impacts on the river and noted that the single monitoring site currently used does not provide sufficient information on the wider estuary. Finally, Mr Smith sought dedicated conditions setting "big and bold" timeframes to establish land-based disposal, and to incentivise that transition.

Mr Ngaio Tiuka

233 Mr Tiuka (Tūhoe, Ruapani), Director of the Environment and Natural Resources Unit at NKII, also presented on behalf of NKII.

234 Like other tangata whenua expert witnesses (including Ms Kawana), Mr Tiuka lamented the lack of recognition given to the importance of mahinga kai in the application, as reflected in the following sentiments:

It's the place – Where gathering food takes place is as important as ...

It's the practise – How the food is gathered; but most important is ...

It's the kai – The actual food that is gathered.

Mr Tiuka acknowledged that we don't know enough about the state of mahinga kai in the awa, hence the need to better and more comprehensively address the issue "forthwith". Mr Tuika made a plea for much more information on the state of mahinga kai in the awa to assist with finding a clear pathway ahead.

235 Mr Tiuka noted that the adverse effects on mahinga kai are prominent on the eastern side of the rivermouth during a closure or reduced rivermouth flow as the effluent gets deposited in this area, and there are no flushing flows.

236 He questioned the efficacy of trying to deal with the adverse effects of wastewater discharge on tikanga through a working party system such as the Wairoa Wastewater Working Group. In his view, processes of this sort usually fell short of actually doing anything because of lack of follow through.

237 Similarly, Mr Tiuka advised that monitoring programmes do not adequately address adverse effects on tikanga as they can be little more than data collecting mechanisms. Consequently, Mr Tiuka was adamant that any conditions imposed must not be limited to working group findings and data collection.

238 Mr Tiuka advised that from a Te Ao Māori perspective, we should start from considering what does the mana of the awa need? Mr Tuika outlined some 13 points of additional conditions and requirements towards that objective, including a requirement to remove mortuary waste immediately; a UV and filtration system within 1 year; broader tangata whenua representation in the conditions of consent; cultural health monitoring; rivermouth location and flow

monitoring; a fixed commitment to land-based treatment and greater storage; and linking the discharge regime to flows at the rivermouth.

Hawkes Bay District Health Board (HBDHB) / Mr Cameron Ormsby

239 HBDHB made a written submission that neither supported nor opposed consent, but did make some recommendations with the aim of protecting public health. HBDHB supported WDC's proposal to install sand filtration and UV light disinfection as a step prior to discharge, but also noted that the efficacy and operation will need to carefully considered to ensure treatment is to a high standard, especially during periods of heavy rain / high flows. Any conditions attached to a consent should specify minimum performance standards for, for instance, UV irradiance, turbidity and flow through the WWTP. HBDHB stated that they are unhappy with overflow discharges of untreated wastewater at pump stations, which pose a risk to the community, and that a programme of continuous improvements should be adopted by WDC that reduces ingress of stormwater into the wastewater system. Episodes of raw wastewater discharge need to be communicated to the public in a timely way so that contaminated water can be avoided.

240 During questioning, Mr Cameron Ormsby, for the HBDHB, stated that he was satisfied that no QMRA (Quantitative Microbial Risk Assessment) was necessary in this case to quantify risk to humans due to wastewater discharge, and that any human health risk could be managed effectively by proper maintenance of and performance standards for the UV/sand system, and good communication (signage, social media, print media) in the event of overflows from pump stations.

241 Mr Ormsby advised that the DHB is generally happy with the way the modelling of physical dilution has been undertaken by the Applicant's consultant (Dr Mead) and acknowledged that what is proposed is an improvement. However, he did question the discharge on an incoming tide.

242 The DHB is keen to require the improvement of communication to the public when discharging into the river and are working towards the inclusion of tikanga Māori in decision-making.

Ms Lis Battes

243 While not presenting evidence to the Panel at the hearing as such, in her written submission entitled "Submission to 30 November 2020 Hearing", Ms Lis Battes, a private citizen and resident of Wairoa, stated that there had not been genuine engagement by the Applicant with the community; that the engagement process was about "face" (entirely focused on obtaining a resource consent instead of finding out what the community wants); that there were significant defects in process, including record-keeping; that the Applicant has not been completely forthcoming with information; and that cost has not been properly considered by the Applicant. Ms Battes highlighted three issues raised by Ms Lucia Ehu-Hamilton in her submission, these being ongoing discharge of "smelly wastewater … in a heavily used

recreation area because of a compromised outfall"[109]; discrepancies in cost estimates for an ocean outfall option; and accumulation of debris on the mesh fence beyond the overflow pipe. Furthermore, Ms Battes claimed that "what is now proposed is a substantial departure from what was discussed during pre-lodgement dialogue and the likes".[110]

244 Ms Battes raised a further six issues, prompted by her review of the s 42A report. These were: safety of surfers who surf the Wairoa Bar; odours in the vicinity of the wastewater ponds; overflows at pump stations; the need for performance measures for proposed reticulation network improvements that are designed to reduce inflow and infiltration; annual reporting; and failure to comply with certain consent conditions to date.

245 Ms Battes accompanied her submission with newspaper articles, a photograph of debris in the vicinity of the mesh fence around the outfall, and minutes of the "second pre-hearing meeting" held on 28 February 2020.

Mr Nick Dempsey

246 In his 5 November 2020 statement of evidence, Mr Dempsey, an engineer with experience in wastewater treatment and Technical Director – Water at Mott MacDonald New Zealand Limited, referred to a review that he had done for HBRC[111] on the existing wastewater treatment system, staging of the proposed works, management regimes and monitoring conditions.

247 Amongst Mr Dempsey's specific recommendations were requirements to: revise pathogen conditions once pilot trial information had been obtained; specify in greater detail how the UV disinfection system will be operated; have conditions to ensure satisfactory progress with reticulation network improvements; include temperature in monthly field tests; and report treatment performance annually. Mr Dempsey also made several recommendations regarding the broader application, including inclusion of an issues list / key outcomes and regular review of achievement to underpin any conditions, and the suitability of a 35-year consent term.

248 Mr Dempsey provided supplementary evidence consisting of responses to nine questions asked by Commissioner Green during the hearing.[112] Amongst other things, the questions concerned the performance of the planned UV and filtration installations; effluent discharge standards for pathogens; the need for performance standards for the reticulation network improvements; load-based standards for effluent; whether the proposed conditions represented a significant level of relaxation in treatment performance; issues around the design and operation of the UV disinfection system; and sludge management.

249 Summarising Mr Dempsey's supplementary evidence:

[109] Ms Battes' submission, page 3.
[110] Ibid.
[111] Mr Dempsey's letter to HBRC, Wairoa WWTP discharge consent – review of consent application and s 92 responses (Rev C), 6 October 2020.
[112] Supplementary evidence of Nick Dempsey, December 2020.

(a) On the performance of the planned UV and filtration installations, Mr Dempsey advised that the conditions (as they stood at the time) "do not provide improved pathogen removal", which "will not improve upon the current level of public health protection provided by the treatment plant". Furthermore, in order to "improve pathogen removal, conditions are required that reflect reduced pathogen levels in the discharge".

(b) On the need for performance standards for the reticulation network improvements, Mr Dempsey opined that performance standards are "crucial to reduce overflows at pump stations and to ensure the ongoing efficacy of the treatment plant". Furthermore, investment in I&I improvements "without measurement of the improvements is atypical".

(c) On load-based standards for effluent, Mr Dempsey opined that these could be a "useful indicator of the effect of increasing (or decreasing) population, and the staged shift of discharge volumes from the river to land". However, implementing meaningful standards would impose a significant cost on the plant operators and, given the lack of a demonstrable need, is not recommended.

(d) On whether the proposed conditions represented a significant level of relaxation in treatment performance, Mr Dempsey opined that "the discharge conditions [at the time] now reflect a continuation of performance for the treatment plant".

(e) On the design and operation of the UV disinfection system, Mr Dempsey recommended that an "effective way of ensuring that disinfection is occurring on a consistent basis is to measure and record UV transmissivity (typically online) and UV dose (which is a product of the UV intensity of the system and the flow through it)". Furthermore, "including these parameters as reported values with conditional limits would be valuable to ensure that effective disinfection is occurring at all times". Measurement of these parameters is commonly designed into modern UV disinfection systems

(f) On sludge management, Mr Dempsey agreed that there is no need for specific conditions relating to sludge management since sludge will have to be effectively managed anyway in order to comply with discharge standards.

Dr Shane Kelly

250 Dr Kelly, a marine ecologist and Director of Coast and Catchment Ltd, referred in his statement of evidence (November 2020) to his work done for HBRC that included a review of the application, comments on draft conditions, and advice provided in a series of memoranda that informed HBRC's s 92 request for further information and provided comments on the responses duly received.

251 In his memorandum to HBRC of 13 February 2019, Dr Kelly raised several issues, including the scope and adequacy of the hydrodynamic modelling and potential effects of emerging contaminants of concern. Regarding the hydrodynamic modelling, Dr Kelly recommended that further information be sought on sensitivity of the model outputs to changes in the geomorphology of the rivermouth and the position of the outfall; what key decisions had been

predicated on the model outputs; what contingencies had been put in place to manage uncertainties; and how the dispersal and dilution patterns should be interpreted for different contaminants.[113]

252 Dr Kelly viewed the assessment of impacts on benthic macrofauna and sediment quality under the current configuration of the outfall favourably, but opined that the effects of repositioning the outfall had not been addressed. Dr Kelly provided extensive comments on the proposed discharge monitoring parameters (including consideration as to how the effects of the discharge can be separated from effects of other activities), and listed the parameters that would appear in a typical monitoring plan. He also said that the monitoring plan should be explicitly linked to issues and objectives. An important issue raised by Dr Kelly was the lack of information on edible species that are gathered, recommending that further information be sought on that matter.

253 In his memorandum to HBRC of 4 July 2019, Dr Kelly commented further on the hydrodynamic modelling, benthic habitats and ecology, effects of repositioning the outfall, kaimoana, proposed discharge monitoring parameters and staging of UV disinfection. Dr Kelly highlighted a lack of information on nuisance macroalgae blooms, the potential for adverse human health and ecological effects to be greater when the rivermouth is closed, the cumulative effects of multiple catchment activities, that impacts on kaimoana had not been adequately addressed, and risk of disturbance of pipi beds associated with moving the outfall into the channel.

254 In his memorandum to HBRC of 6 October 2020, Dr Kelly provided extensive comments on and recommendations for water-quality / ecological monitoring. At that time, Dr Kelly was still of the view that, even though the Applicant had now fixed on alignment and location of the proposed new outfall and also committed to surveying the seabed ecology along its alignment, he (Dr Kelly) had only seen preliminary observations from that survey, and he was still not able to provide advice on likely ecological effects.[114]

Ms Tania Diack

255 Tania Diack, processing planner for HBRC, submitted her evidence and confirmed that after hearing and reading the evidence of the Applicant and the submitters, the conclusion of the s 42A report remained, being that the consent should be granted subject to suitable conditions of consent.

256 Regarding the approval of the overflows from Kopu Road, Alexandra Park and North Clyde pump stations, which were deliberately not included in the recommended consent structure, WDC had led HBRC to believe that the improvement works to I&I and with the proposed new outfall structure undertaken would significantly reduce the likelihood of having to discharge raw wastewater in the river. Ms Diack considered the emergency provisions of the RMA to be

[113] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 13 February 2019, p. 3.
[114] Dr Kelly's memo to HBRC regarding Wairoa wastewater discharge consent application APP-123774, 6 October 2020, p. 9.

more appropriate to address this issue when it occurred and that the emergency generators should be installed with some urgency.

257 As to consent duration, Ms Diack had considered this matter again, however did not believe that the proposed consent conditions from the Applicant would require them to undertake any further treatment other than UV disinfection and filtration. They did not, in her view, sufficiently address tikanga effects as raised by the submitters. Ms Diack confirmed the 20-year duration recommendation of her s 42A report remained unchanged.

258 Ms Diack discussed the further information points from the conclusion in the s 42A report:

- Point 1 – Mahinga kai information is still outstanding as discussed in Dr Kelly's evidence.
- Point 2 - Through the evidence presented at the hearing it has been confirmed that a concession has been lodged with the Reserve Board, however it seems it may not be looked at favourably from the comments made at the hearing, and Ms Diack would recommend that alternative options be looked at by the Applicant.
- Point 3 - Irrigation and land discharge is still a sticking point for everyone involved and the 10,000 m³ of additional storage that has been confirmed is positive (and has been added to the suite of consent conditions proposed by the Applicant). However, irrigation to land is still not resolved. Ms Diack believed that a staged approach similar to that outlined in Table 3.1 of the AEE may still be the solution to resolve this.

Response to Requested Information

259 WDC filed its response to the information requested in the Panel's minute issued following conclusion of the hearing, on 30 July 2021.

260 That response advised as follows:

(a) That the concession application before the Matangirau Reserves Board was still pending, with the Board considering the merits of a "cheaper modification" to the existing pipe instead of the new replacement pipe proposed under the consent application.[115]

(b) That the Long Term Plan had been adopted on 30 June 2021 without any changes to the proposed works and funding originally published in the draft for consultation, but including some $9.29 million (principally) for Wairoa wastewater facilities including $3.32 million of Three Waters stimulus funding, contingent on the assumption that these consents are granted, and the works completed or underway by 31 March 2022.

(c) That there is only sufficient funding in the Long Term Plan for the designing and construction of a pump station and an area of irrigation (perhaps 5 to 10 hectares)

[115] An option that had been raised during the hearing by Mr Smith and Mr Tiuka for Ngāti Kahungunu Iwi Incorporated.

during 2021/2022, and a modest storage pond (up to 30,000 m^3) with no further irrigation or storage planned during the next 10 years.

(d) That the Long Term Plan contains a number of performance standards for wastewater reticulation and pump station overflows directly related to the I&I rates, with very significant progress made in the last five years in reducing I&I to the point where, in 2020, annual, winter and peak flows were similar to or below those anticipated for 2040 (as presented in Table 5.2 of the AEE), with several months of 2020 and 2021 being the lowest recorded since 2009.

(e) That with reference to the original average flow assumptions applied on designing the WWTP, the I&I work could be expected to reduce annual average flows to approximately 1,600 m^3 per day, approaching the 1992 to 1995 flows (and being 45% below the flows in 2016 to 2018).

(f) That in the result, a storage pond of approximately 200,000 to 300,000 m^3 and a land area of 200 to 300 hectares may be sufficient for irrigating average flows in future.

(g) With reference to the previous assessments of land suitability and availability for irrigation, the only realistic potentially available areas are hill country sites with slopes commonly greater than 20 degrees and subject to erosion, or river flats subject to flooding or periods of high water content.

(h) That WDC had been liaising with farmers near the WWTP with Memoranda of Understanding signed with two farmers. Initial irrigation and storage designs developed indicated that these two farms could accommodate most if not all summer flows during typical seasons, particularly if flows remain similar to or less than the 2021 summer flows. Initial cost estimates for these irrigation designs across 50 hectares are $2 million (ignoring purchasing or leasing costs).

(i) That WDC is mindful of investing a significant portion of the limited funding available in the Long Term Plan into detailed site investigations and resource consenting, which would reduce the amount of funding that could be used to construct the irrigation systems.

(j) That WDC could commit to implementing a small area of irrigation during the first two years and a storage pond of up to 30,000 m^3 in 2023/2024, enabling some of the summer flows to be irrigated and sufficient to enable the ceasing of river discharges during periods of rivermouth closures.

(k) That it is not possible or helpful to speculate on the potential beneficial impacts of Three Waters reform in terms of overcoming funding constraints for WDC.

(l) That WDC is working closely with Gisborne District Council which has recently prohibited mortuary wastes within its Trade Waste Bylaw, and examining options which could see Wairoa develop a dedicated facility for disposal of mortuary waste at its

cemetery, and a draft amendment to the Trade Waste Bylaw has been prepared in readiness for future review as envisaged by consent conditions before the Panel.

(m) That a specific independent mahinga kai assessment has been commissioned.

(n) That a Quantitative Microbial Risk Assessment is unnecessary.

261 We have factored in these responses particularly in considering the most appropriate condition framework to "lock in" (as Mr Lawson put it) specific steps and milestones towards progressive implementation of the aspirational package before us, and on the issue of consent duration. This is as addressed further below.

Closing submissions from Applicant

262 Following the granting of an extension, counsel for WDC filed closing submissions on 3 September 2021.

263 The closing submissions addressed a range of matters including as follows:

(a) That the three fundamental principles addressed in opening must be viewed in the context of the consenting requirements faced by WDC and its overall statutory obligations including under the Local Government Act 2002 (LGA) in relation to the provision of water and sanitary services and funding, including the requirement for prudent financial management set by s 101 of the LGA.

(b) That WDC does not have the ability to commit funding to operations and expansion of infrastructure that it cannot afford as a matter of prudent long-term financial planning, and that it would be unethical and illegal to knowingly impose a financial burden on the community which is well known to be struggling with other financial pressures and priorities.[116]

(c) That the suite of applications represents how WDC considers it can achieve the purpose of the RMA while achieving the balanced budget and prudent financial management imperatives of the LGA, and that even if affordable, land-based alternatives raise serious technical limitations which would need to be overcome to make land discharge, certainly 100%, a reality.[117]

(d) That the relatively few submissions made in opposition to the application are not representative of the views expressed in the course of the wider community consultation undertaken which includes two Long Term Plan rounds, hui, community meetings and print and social media, with it being notable that opposition to WDC's wastewater planning had not featured in the recent Long Term Plan and Annual Plan processes.[118]

[116] Paragraph 23 of the reply submissions.
[117] Paragraphs 25 and 26.
[118] Paragraph 28.

(e) That it is incumbent on local planning authorities rather than WDC as consent Applicant to give effect to the NZCPS; conversely that the obligation for applications for resource consent is to "have regard to" the NZCPS.[119]

(f) That the part of the application which falls within the coastal marine area[120] is consistent with the NZCPS and in particular policy 23 of the NZCPS.[121]

(g) That (by contrast) the main discharge at the outfall is not one which falls within the ambit of the NPSFM 2020, as it is not a discharge to fresh water.[122]

(h) That the Kopu Road pump station is located both outside of the coastal marine area and coastal environment and therefore not subject to policy 23(2) of the NZCPS, and (regardless) the objectives and policy approach under the regional planning instruments is the same regardless of whether the Kopu Road pump station is within or without the coastal environment.[123]

(i) That if the Kopu Road pump station discharge is considered to be within the coastal environment, given the limited durations of any discharge on rare occasions of heavy rainfall into a high-flow river environment, the effects would be de minimis.[124]

(j) That the NPSFM 2020 does apply to the discharge of untreated wastewater from the Alexandra Park and North Clyde pump stations. Again however, the obligation to give effect to the NPSFM lies with the Regional Council, whereby the regime envisaged by the NPSFM is "in its infancy" in terms of Regional Council implementation, such that in the meantime occasional unavoidable discharges are consistent with the effects management hierarchy of the NPSFM.[125]

264 Addressing the issue of consent duration specifically, counsel pointed to the key components of the overall conditions framework comprising:

(a) A series of initial actions that have been committed to (for example UV treatment, storage, wastewater education plan, catchment enhancement plan and mortuary waste); and

(b) A framework of reviews and follow up actions involving three sets of system review and improvement plans over a 25-year period; and

[119] Paragraphs 31 to 36.
[120] This submission being understood to refer to the main outfall rather than any of the pump station overflows.
[121] Paragraph 39 of the reply submissions.
[122] Paragraphs 40 to 43 of the reply submissions.
[123] Paragraph 50 of the reply submissions.
[124] Paragraph 51 of the reply submissions.
[125] Paragraphs 57 to 68 of the reply submissions.

(c) Progression through these reviews to the common goal of reducing and ultimately ceasing discharges to the Wairoa River during low flows, with expansion and ongoing investigation into land-based discharge and storage options.[126]

265 It was submitted that the NPSFM 2020 does not comprise a relevant basis upon which to foreshorten the duration of the consent.[127]

266 It was further submitted that WDC's commitment to specific actions within the first 10 years and regular review and implementation cycles makes the consent conditions real not merely aspirational. Conversely, the design, construction, installation and commissioning process for each aspect of irrigation and storage would inevitably take time including for procurement and land purchase along with further consenting.[128]

267 It was starkly submitted that a shorter duration consent would derail implementation of these actions, and whereby based on the agreed sequence (from expert conferencing) they would not be completed for at least 25 years, whereby a full and proper replacement application could be prepared.[129]

268 It was further submitted that a consent renewal process could have a negative impact on implementation of further initiatives to reduce discharges to the river and that no further improvements or developments of storage and land-based discharges would occur while a fresh consent application is being compiled and processed.[130]

269 Finally, an update was given on the concession application.

270 Notably, the reply submissions advised that discussions had progressed to the point where conditional support from Tātau Tātau o Te Wairoa had been provided for a concession to be granted, such that WDC was confident that a concession would be granted, conditional on these resource consents being approved.[131]

271 Counsel repeated submissions made in opening that the concession process was not relevant to our consideration as a Hearings Panel, with consents being permissive in nature and unable to be implemented in the absence of the concession.[132]

272 The issue of consent duration is addressed later in these submissions.

273 For present purposes we record that we reject counsel's submissions (including as made in opening) that the concession process is not a relevant consideration.

[126] Paragraph 71 of the reply submissions.
[127] Citing a recent Environment Court decision in *Rangitane o Tamaki Nui a-Rua Incorporated v Manawatu Whanganui Regional Council* [2021] NZEnvC 84 at [10].
[128] Paragraphs 76 to 78.
[129] Paragraph 79.
[130] Paragraph 81.
[131] Paragraphs 88 to 93.
[132] Paragraphs 94 to 95 of counsel's closing submissions.

274 While consents may generally be permissive and unable to be implemented in the absence of a relevant land interest, the situation here is one where the consented activity is currently imposing what is acknowledged to be a culturally unacceptable effect on the Wairoa River estuary.

275 Further, whereby the new outfall subject of the concession application was as Mr Lawson submitted both extremely important and fundamental to the process and the discharge currently being proposed, including by way of mitigation (therefore) of that tikanga impact. From a pure western science perspective, as Dr Mead observed, he would be concerned if there were any delay to its installation given the great improvement in dilution secured and the fact that the estuary is currently in a "bad way".

276 Therefore, while in general terms it might not matter from an environmental effects perspective whether a particular consent or consent element was ultimately implemented, that is simply not the situation here. In that regard, we find the issue of the concession to be not just relevant per se, but also in relation to the issue of duration as addressed later in this decision.

277 We record that we also reject the (we consider) strained argument made by counsel in closing that the NPSFM 2020 is not relevant to our assessment, particularly in terms of the discharge at the principal outfall.[133]

278 s 1.5 of NPSFM 2020 states:

> This national policy statement applies to all freshwater (including ground water) and, to the extent they are affected by freshwater, to receiving environments (which may include estuaries and the wider coastal marine area).

279 As we read it, the latter part of this statement is additive, rather than creating an exclusion. While freshwater is not defined under the NPSFM, we do not understand this instrument to be providing that where freshwater contains an element of sea or salt water, the instrument does not apply. Instead, it is saying that, on an inclusive basis, the opposite is the case – i.e., the ambit of the instrument might extend to include estuaries and the wider coastal marine area as receiving environments.

280 It would also be entirely contrary to the more holistic integrated management approach envisaged by NPSFM Policy 3.5 (ki uta ki tai, i.e., mountain to sea) reflected in the full name of the Wairoa River itself.

281 Finally, we find (as noted above) that the Kopu Road discharge point is within the coastal environment, not least for being included within the coastal margin as applied under the RCEP as recorded earlier in this decision.

[133] With reference to s 1.5 of the NPSFM 2020, paragraphs 40 to 42 of counsel for the applicant's closing.

Tikanga Issues – Findings

282 A respectful step in reaching a decision on whether the application should proceed or not is to acknowledge the key position of tangata whenua in the Wairoa rohe[134]. This is premised on the comprehensive history and tradition of Māori settlement there, and on the fact that the township of Wairoa derives its name from the very river that flows through it.

283 In the 2018 census, 66.9% of the population of Wairoa was Māori. In 2020, the total population of the Wairoa District was 8,960, so the Māori component of that, going on the 2018 census calculations, would be sizable indeed. This underscores the importance of tikanga Māori[135] matters in the assessment of this application.

284 To tangata whenua the Wairoa River is more than simply a geographic feature on the local landscape. As quoted by Hira Huata in her rousing presentation to the hearing:

Ko te awa ko au, ko au te awa (The river is me and I am the river)

285 The River has a personality, it is part of the holistic worldview that Ngāti Kahungunu adheres to, and it is regarded with great affection and reverence, much like all other iwi respect their respective awa. Consequently, awa evoke much emotion in the everyday lives of tangata whenua, and the Wairoa River is no exception, as the Panel heard consistently throughout the hearing.

286 Te Wairoa Hōpūpū Hōnengenenge Matangirau is its full name - (The long water that bubbles, swirls and is uneven). It is a taonga, a treasured component of the iwi/hapū/whānau fabric of Ngāti Kahungunu. It is recognised as such by all iwi of the motu. It has its own whakapapa that is linked to the people and the land; a whakapapa that is derived from the very beginning of mankind, from Ranginui and Papatūānuku.

287 Te Wairoa Hōpūpū Hōnengenenge Matangirau is steeped in spirituality. The Panel was told that it is tapū, and that it must be treated as such. Indeed, there are various tapu places along the awa that reinforce this.

288 The awa (river) has traditionally been an important mahinga kai (food gathering source), a topic the Panel was consistently reminded of. It fed the various communities that lived on its banks from the advent of the famous waka Tākitimu down through the ages.

289 Traditionally it also provided opportunities for bathing and some ritual practices. It was also a transport corridor.

290 However, the Panel was to hear that this was no longer the case and this fact has been central to much of the commentary on – and opposition to – the application.

[134] Whilst Ngāti Kahungunu is the prominent iwi of the Hawke's Bay rohe whānui (wider Hawke's Bay area) those around Wairoa are typically referred to as Ngāti Kahungunu ki Te Wairoa.
[135] We have opted to use the words “tikanga Māori” instead of “cultural” primarily because it is the way most Māori would characterise it. Few refer to “cultural”, but all recognise “tikanga”.

291 Mahinga kai have been adversely affected and bathing opportunities, especially in the vicinity of the rivermouth where the outlet is situated, are limited.

292 Another factor worth mentioning with respect to the significance of the awa to tangata whenua can be seen in whaikōrero (speechmaking). The pepeha (traditional personal introduction) used at the opening of whaikōrero made by local tangata whenua (i.e., those born in the rohe) traditionally resemble the following:

Ko Whakapunake te maunga – Whakapunake is the mountain

Ko Te Wairoa Hōpūpū Hōnengenenge Matangirau te awa – Te Wairoa is the river

Ko Ngāti Kahungunu te iwi – Ngāti Kahungunu is the tribe

Ko Tākitimu te waka – Tākitimu is the canoe

Ko Kahungunu te tangata – Kahungunu is the man

293 This is a template used throughout Māoridom demonstrating the consistent non-use of one's personal name in more formal introductions of this sort. What is more important is the reference to geographic features like rivers, lakes and mountains to identify where one is from rather than announcing oneself by name. The significance of this is not to be underestimated.

Concerns for Tangata Whenua

294 In a nutshell, discharge of wastewater into the Wairoa River is offensive to tangata whenua. Its well-being is paramount physically and spiritually, but aligning this with the western science view of the world is challenging, particularly in the current RMA discourse. The notion that an awa has a “personality” of its own barely, if ever, strikes a chord within the western science fraternity.

295 Yet, western science prevails, largely because the RMA process is underpinned by science. Resource consents, for instance, are predominantly decided on by science-based processes.

296 Tikanga Māori, or the “cultural dimension” as it’s popularly referred to nowadays, is less recognised. This appears to be the case here, arguably because tikanga Māori is not yet well enough understood by the RMA system, nor is it aligned or prioritised accordingly.

297 Conversely, western science is difficult for the uninitiated to comprehend and this includes a considerable cross-section of the Māori population. The two paradigms (tikanga Māori and western science) as it were often by-pass each other.

298 During the hearing, the Panel heard tangata whenua expert witnesses describe how special Te Wairoa Hōpūpū Hōnengenenge was in terms of its whakapapa, its sacredness/spirituality, its connectivity and its traditional food-producing capability.

299 In tikanga Māori terms it is the mauri (life force) of the awa that determines this. If the mauri is healthy then all is well. If not, we all bear the brunt.

300 The Panel was left in little doubt that the mauri of the awa is not in good shape. Consequently, there was much comment on redressing this state of affairs, and restoration of the mauri of the wai in Te Wairoa Hōpūpū Hōnengenenge Matangirau has become a catch cry.

301 How to achieve this though and, perhaps more importantly, how to measure and monitor such achievement tangibly, is challenging. But tangata whenua and WDC appear up to it in their shared determination to restore the health of the awa to some of its former glory.

302 To that end, monitoring options are being considered, and in the hope that whatever process is agreed to presents an opportunity for greater and more meaningful tikanga Māori and western science interaction.

303 Similar situations nationwide have spawned what have become known as “mauri monitoring” models. One favoured by at least one of the tangata whenua experts is the “Mauri Compass” model developed in nearby Gisborne, which purports to bring tikanga Māori and western science together to assess and restore the mauri of any waterbody.

304 In reality, little is known about how the model works and it remains to be tested if it indeed becomes the option of choice.

305 The RMA refers to “kaitiakitanga” as guardianship or stewardship of the natural environment. The typical Māori postscript to this definition is that such guardianship has to ensure that the environment is passed on to successive generations in as good a condition – preferably better – as it is now. As kaitiaki (guardians), Māori take that responsibility seriously.

306 The application was noticeably silent on this matter.

307 A concern for tangata whenua expert witnesses in this respect was the diminution of their ability to fulfil their kaitiaki responsibilities for a taonga like Te Wairoa Hōpūpū Hōnengenenge Matangirau through apathy on the part of the RMA system. Apathetic dismissal is unacceptable in their eyes.

308 Not surprisingly, therefore, tangata whenua submitters and expert witnesses highlighted their inability to exercise kaitiakitanga over the awa as a key issue in the ongoing struggle to improve the mauri of Te Wairoa Hōpūpū Hōnengenenge Matangirau.

309 Tangata whenua experts were also asked their views on the duration of a new consent if the application were to proceed. Given that the current consent dates back to 1999, and given that the local community has tried unsuccessfully over many years to get the Council to do something about the health of the awa, they were unanimous in settling on less than 35 years.

310 20 years – in line with the s 42A report suggestion – was generally favoured even though the preference was for immediate cessation of any further discharge if possible. For the most part

this assessment was based solely on tikanga and paid little heed to science or political prescriptions. They wanted their taonga to be "healed" as quickly as possible, no matter the cost, and 20 years seemed a more than reasonable timeframe for that to happen from that perspective.

311 With respect to possible alternative options, tangata whenua experts were unanimous in their push for a land-based system of wastewater discharge, for obvious practical reasons. But there is a tikanga angle to this as well. Returning waste generally to land – rather than water – is a practice steeped in lore and tradition.

312 In addition, it was clear to the Panel that total tangata whenua participation (i.e., partnership) in the overall restoration process was an absolute necessity. Tangata whenua presence on the various committees, working groups and other decision-making fora to date has been instructive in enabling a more informed and productive working atmosphere. Continuing to build on that would seem eminently sensible, even if it might appear that tikanga Māori and the RMA system are not yet quite on the same "waka".

Technical Issues in Contention

313 We now address our findings on the western science 'technical' issues in contention, as recorded earlier in this decision:

(a) Hydrodynamic modelling The adequacy of the hydrodynamic modelling used to support the assessment of potential adverse effects and certain elements of the project design was challenged on several fronts, these being: (i) the validity of using a conservative tracer for the dilution modelling; (ii) an apparently unfavourable comparison of the dilution modelling against 2007 observations of dilution; (iii) the fact that a closed rivermouth was not modelled; and (iv) the effect on the accuracy of the modelling of potential variations in the position of the rivermouth.

(b) Ecological effects Three issues concerning the ecology of the estuary were in contention: (i) the current state of the estuary and current and potential future effects of discharges from the WWTP; (ii) potential effects of extending the pipeline on macrobenthos and bed sediments; and (iii) potential effects arising from the occasional, as and when needed, relocation of the outfall diffuser that is attached to the pipeline.

(c) Mahinga kai The issue of potential adverse effects on mahinga kai associated with discharges from the WWTP and with construction and maintenance of the outfall was raised by submitters and an expert witness.

(d) Human health The matter of human health was pertinent, arising in several different contexts: (i) safety of surfers and fishers during summer months; (ii) use of quantitative microbial risk assessment (QMRA) to understand human health risk associated with WWTP discharges; (iii) operation of and performance measures for the proposed UV and sand filtration treatments; (iv) performance measures for ongoing and proposed

reticulation network improvements designed to, amongst other things, reduce pump-station overflows

(e) Operation of the WWTP Issues in contention were: (i) the need for specific conditions relating to sludge management; (ii) the interpretation of photographs that appear to show accumulation of debris on the mesh fence around the current overflow pipe; (iii) the risks associated with discharge of treated effluent on incoming tides; and (iv) a widespread concern that the proposed discharge regime is less restrictive than the current regime.

Analysis of Technical Issues in Contention and Findings

(a) Hydrodynamic modelling

314 Dr Mead conducted hydrodynamic modelling to assist the assessment of potential ecological effects associated with the discharge of treated and untreated wastewater into the river/estuary, the design of a discharge regime, and design of a new outfall structure.

315 Ten scenarios with the rivermouth open and the outfall in its current location were simulated by Dr Mead with a numerical hydrodynamic model of the Wairoa river/estuary. Each scenario consisted of a different combination of outfall flow, discharge timing (relative to the tide) and river flow, representing potential outfall discharge regimes. For each scenario, "dilution of the wastewater spatially throughout the estuary" was simulated.[136] Dr Mead found that dilution reduced the concentration of ammonia-N, deemed to be the key contaminant of concern, to less than the ANZECC trigger value within 100 m of the outfall in all cases.[137]

316 Dr Mead undertook additional model simulations with the outfall discharging 200 m into the main channel beyond the present outfall, which is proposed. In this case, there is a "significant improvement" in that the dilution is greater, compared to dilution with the outfall in its present location.[138]

317 Dr Mead also used the model to investigate the effects of a 3-year ARI rainfall event that resulted in a wastewater spill at each of 3 locations. The simulation showed that rapid mixing of the overflow plumes reduced contaminant concentrations to levels that do not present a threat to benthos within 25 m of the overflows.[139] Dr Mead concluded that "while rain events can lead to overflows, they also create conditions where spilled substances can be rapidly diluted and flushed from the river by increased river flow".[140]

318 The adequacy of the hydrodynamic modelling was questioned on several fronts.

[136] Dr Mead's statement of evidence, 16 November 2020, para. 33.
[137] Ibid., para. 5f.
[138] Ibid., para. 44.
[139] Ibid., para. 5e.
[140] Ibid., para. 39.

319 (i) Modelling dilution of conservative tracer. Specific contaminants (such as bacteria, nutrients, viruses and sediment) were not modelled.[141] Instead, simple dilution of the WWTP discharge was modelled, which is explained in report eCoast, 2018:C1.1 (p. 22). In the modelling, the outfall water was treated as a conservative tracer, meaning that its concentration evolved only by physical mixing with the water in the receiving environment. Although Dr Mead elaborated that conservative tracer modelling was undertaken so "that any contaminant dilution could be assessed from the known input concentrations from the outfall",[142] no "assessments of discharge effects on river water quality were included in the modelling report".[143]

320 Dr Kelly noted that "while a conservative tracer may be a reasonably good proxy for soluble and microbial contaminants that remain in suspension (at least over short periods), it may not be suitable for particulates that settle out and affect seabed communities", which includes sediment and organic matter, and contaminants that bind to those.[144]

321 During questioning, Dr Mead argued that, particularly in fast-flowing, deep, turbid water, physical mixing, which is included in Dr Mead's model, will dominate over other non-conservative processes. Furthermore, and also during questioning, Dr Mead noted that non-conservative models do exist and are used, but their added complexity can make it very difficult to interpret or have confidence in the predictions, unless great care is taken with model calibration and validation.

322 Consideration of ammonia toxicity provides a good example of how the dilution modelling was used. The initial modelling (eCoast 2018:C1.1) simulated the dilution of wastewater from the outfall in its current location. The model predicted that, for various scenarios of river flow and WWTP discharge volume, effluent will be diluted by about 200 times within 100–200 m of the outfall. Multiplying this dilution by the concentration of ammonia-N in the effluent predicts that dilution will reduce concentration of ammonia-N, which is the "key contaminant of concern",[145] to "below the ANZECC (2000) marine toxicity trigger value" within 100 m of the outfall when the estuary is open.[146] Dr Mead undertook additional model simulations of the proposed 200-m extension to the pipeline, which locates the diffuser in the centre of the main channel, where current speeds are significantly greater compared to current speeds where the existing diffuser discharges.[147] The "results indicate that due to the increased flows in the central channel, with the extended pipeline/outfall location, greatly increased dilution is achieved in comparison to the existing location, with dilution levels below the ANZECC (2000) trigger value occurring within 25 m of the outfall",[148] which is an improvement compared to the outfall in its existing

[141] Dr Mead's statement of evidence, 16 November 2020, para. 35.
[142] Dr Mead's statement of evidence, 16 November 2020, para. 66.
[143] Ibid., para. 35.
[144] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 13 February 2019, p. 3.
[145] Dr Kelly called ammonia-N the "key contaminant of concern for toxicity effects", noting that "the effects of oxygen-demanding substances is a secondary concern" (Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 4 July 2019, p. 2).
[146] Dr Mead's statement of evidence, 16 November 2020, para. 38.
[147] Ibid., para. 5g.
[148] Ibid., para. 68.

location. Dr Kelly took exactly the same approach to assessing the potential for nitrogen toxicity.[149]

323 Further detailed comments on how the dispersal and dilution patterns, modelled using a conservative tracer, are provided in WDC's responses dated 19 March 2019 to HBRC's question(s) to the Applicant on 22 February 2019, and the responses dated 19 May and 25 June 2019 to HBRC's formal s92 request on 26 March 2019 (issue 1c).

324 We accept Dr Mead's argument that physical mixing, which is included in the model, will dominate over other non-conservative processes in fast-flowing, deep, turbid water, which is the case here. Therefore, we do not view modelling of a conservative tracer as being inadequate. Furthermore, we accept the argument that applying more complicated non-conservative models is not in any case guaranteed to provide more reliable predictions. We also do not view dilution modelling as not being useful, as shown by the assessment of nitrogen toxicity. We also accept that Dr Mead understands the limitations of this kind of modelling, and how it should be interpreted.

325 (ii) Dilution modelling appears to overestimate 2007 measured dilution. Ms Kawana[150] raised a concern that the Applicant's hydrodynamic modelling over-estimated pollutant dilution compared to a 2007 dye dilution study. Referring to the same issue, Mr Smith noted that "the dilution modelling associated with the application is overly optimistic, given the comparison with the estimated results from the 2007 dye dilution study (Barter 2007)".[151] Mr Smith showed in his Figure 2 dilution versus distance from the outfall plotted from (we presume) the dye-study data shown in Barter's (2007) Table 2, compared with modelled dilution. There is a considerable discrepancy between the two sets of results, with Dr Mead's model predicting much greater dilution (as much as a factor of 10) compared to the dye study.

326 Dr Mead conceded during questioning that he did not specifically calibrate or validate the model outfall mixing, but that he did test the model general mixing (as represented by the various eddy coefficients – see Table 3.1 in eCoast, 2018:C1.1) by comparison against salinity data.

327 The model calibration is described in detail in eCoast, 2018:C1.1 pp. 13–21, which includes the comparison against salinity data to evaluate the model mixing. Although there were several anomalies, which the authors discussed and evaluated in some detail and ascribed at least partly to the area being "very complex",[152] Dr Mead nonetheless concluded that the "numerical model calibrated reasonably well against measured field data in this hydrodynamically complex location, and replicated the important processes and degree of stratification identified in the measured data. This provided confidence in the results of the various modelled discharge and overflow scenarios modelled".[153]

[149] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 4 July 2019, p. 2.
[150] Submission, 10 September 2019.
[151] Mr Smith's statement of evidence, 23 November 2020, para. 71.
[152] eCoast, 2018:C1.1 pp. 16.
[153] Dr Mead's statement of evidence, 16 November 2020, para. 5d.

328 It is difficult to assess this comparison of model against data. For one thing, the model predictions are of percentiles, whereas the dye study reports a single observation. For another, although the river discharges are similar (model compared to dye study), it is not clear how well other conditions, such as tide range and time of outfall release relative to phase of tide and so on, match. Without being able to confidently assess Mr Smith's comparison of Dr Mead's modelled dilution against Barter's (2007) dye mixing study, and accepting that Dr Mead has openly evaluated his model performance, we accept Dr Mead's conclusion regarding the adequacy of his model and his confidence in the model predictions.

329 (iii) Closed rivermouth was not modelled. Dr Kelly commented on the fact that periods when the rivermouth is closed were not modelled, at which times he would expect that "both health and ecological risks … [would be] … elevated".[154]

330 Dr Mead countered that modelling "with a closed river mouth was not undertaken because the proposed increase of storage … (to 10,000 cubic metres) and development of irrigation will mean that discharge during closure will most likely not occur".[155] Dr Mead offered some observations to justify that claim. Firstly, according to "anecdotal information", which is attributed to S. Heath, pers. comm., the rivermouth has "been closed for 1–2 days in the past before re-opening, and that it will 'blow out' after a couple of days".[156] The "current storage capacity [5,400 cubic metres] is up to a week during normal flow rates, and 1–2 days during high flow rates, noting that the latter leads to re-opening of the entrance".[157]

331 Taking issue with Dr Mead's numbers around the rivermouth closing, Mr Smith said that records held by HBRC indicate that, "the Wairoa rivermouth closes on average twice a year for anywhere up to 7 days",[158] which "suggests that treated wastewater could potentially circulate for up to 5 days if additional storage of [only] up to 10,000 cubic metres were constructed".[159] As recorded earlier, Mr Smith opined during questioning that up to 20,000 (our emphasis) cubic metres of storage would be needed to prevent discharge being necessary when the rivermouth is closed.

332 Ms Diack pointed out that "the 10,000 cubic metres additional storage being suggested by the Applicant is not guaranteed through proposed consent conditions"[160] and "the 50 hectares of land treatment areas being suggested by the Applicant, as the initial treatment area needed, are not guaranteed through proposed consent conditions".[161]

333 As also noted earlier, we requested further advice on the matter of storage. The Applicant responded that "there is funding allocated for construction of a 30,000 (our emphasis) m^3 storage pond in 2023/24 …. [which] should be ample for ceasing river discharges during

[154] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 4 July 2019, p. 2.
[155] Dr Mead's statement of evidence, 16 November 2020, para. 67.
[156] Ibid.
[157] Ibid.
[158] Mr Smith's statement of evidence, 23 November 2020., para. 72.
[159] Ibid., para. 73.
[160] s 42A report, 6 November 2020, para. 15.
[161] Ibid., para. 16.

periods of river mouth closures",[162] albeit the location of this storage area is yet to be determined.

334 Dr Kelly acknowledged that risks when the rivermouth is closed are currently and will continue to be in the future managed by such measures as wastewater storage, rivermouth opening, and issuance of public-health warnings. Also in the future, risks should be "reduced through the application of filtration and UV treatment".[163] Dr Mead noted that there are, indeed, "proposed consent conditions relating to when the rivermouth is restricted such as the timing of discharging wastewater".[164]

335 We accept Dr Mead's reasoning that modelling a closed rivermouth is not strictly necessary if provisions are in place to store wastewater for the duration of the closure. We acknowledge that there is uncertainty in estimates of the volume of storage required to avoid discharge, however WDC's plan to construct 30,000 m^3 of storage in 2023/24 exceeds the highest estimate, and so should be sufficient. We also acknowledge that risks when the rivermouth is closed are currently and could continue to be in the future managed by such measures as wastewater storage, rivermouth opening, and issuance of public-health warnings, all of which could be codified in conditions attached to a consent.

336 (iv) Changes in position of rivermouth. Dr Kelly questioned the potential for variations in the position of the rivermouth to invalidate Dr Mead's model predictions of discharge dilution.[165] Dr Mead replied that, in his opinion, "the rivermouth location … [that was modelled] … is likely close to the worst case scenario. As such, the model outputs can be considered conservative".[166] The reasons for Dr Mead's opinion are elaborated in WDC's responses dated 19 March 2019 to HBRC's question(s) to the Applicant on 22 February 2019, and the responses dated 19 May and 25 June 2019 to HBRC's formal s92 request on 26 March 2019 (issue 1a).

337 Dr Mead's reasoning is extensively explained, and there is no information that indicates that his reasoning is faulty. We therefore accept that WDC has modelled the worst-case rivermouth position.

(b) Ecological effects

338 (i) Assessment of current state of estuary and current and future effects of discharge. Dr Mead called the estuary "sediment stressed"[167] and widely degraded.[168] In addition, and based on data collected to date, there is "little evidence for negative environmental effects for sediment quality and benthic community composition associated with the existing wastewater

[162] Responses from WDC to the Panel's questions raised in the First Minute dated 11 December 2020, 30 July 2021, para. 50.
[163] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 4 July 2019, p. 2.
[164] Dr Mead's statement of evidence, 16 November 2020, para. 67.
[165] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 13 February 2019, p. 3.
[166] Dr Mead's statement of evidence, 16 November 2020, para. 33.
[167] Ibid., para. 5c.
[168] Ibid., para. 14d.

discharge",[169] and that "it is my opinion that the impacts of the existing discharge are considered to be no more than minor and localised (within 100 m of the existing outfall)".[170] However, Dr Mead also cautioned that "evaluating impacts of the outfall on … [the benthos] … was difficult given the low species diversity and wider degraded nature of the lower Wairoa River estuary, as well as the initial monitoring only having a few sites likely within the zone of impact".[171]

339 Dr Kelly agreed with Dr Mead's assessment. Dr Kelly opined that the sampling design and methods (used to collect the data upon which the assessment was made) appear to be appropriate, and that there is "enough information provided to enable impacts on benthic macrofauna and sediment quality to be determined for the current outfall configuration".[172] Dr Kelly concluded that the benthic ecological and sediment geochemistry surveys (2007–2018) show that the "benthic ecology and habitat quality in the estuary are impacted by catchment activities, but the existing discharge does not appear to be compounding those effects to any substantial degree".[173]

340 Mr Smith[174] reported 2017 (Triplefin)[175] bed-sediment and macrobenthos data from the vicinity of the outfall in order to assess any effects associated with the discharge of treated wastewater, and compared the 2017 data with 2011 (EAM) data to assess trends. The data are from 4 sites.

341 As for bed sediments, Mr Smith noted that there is potential for accumulation of organic matter, with a corresponding change (fining) of bed-sediment texture (grainsize) around outfalls. Sediment texture is "an important factor determining the types of species that inhabit the sediment".[176] Mr Smith concluded that, based on the data, "it is suggested that the discharge [to date] is likely to be having a persistent adverse effect on sediment quality from organic loading at site A [downstream, worst-case for effects]".[177] Furthermore, "effects … on sediment composition are absent, and effects on the oxic status of sediments beyond 50 m of the outfall are considered no more than minor".[178]

342 As for the macrobenthos, Mr Smith noted that some macrofaunal species are highly sensitive to the kinds of changes in bed sediments associated with wastewater discharges, which can open the door to colonisation by less desirable opportunistic species.[179] Mr Smith concluded that, based on the data, "ecological condition among all sites is poor–moderate, though evidence indicates infaunal communities around the outfall are responding negatively to wastewater discharge. The magnitude of this effect on infauna however is slight-minor, though

[169] Ibid.
[170] Ibid., para. 25.
[171] Ibid., para. 24.
[172] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 13 February 2019, p. 4.
[173] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 4 July 2019, p. 3.
[174] Statement of evidence, 23 November 2020.
[175] We understand this to be what is called the "Triplefin 2018" dataset in eCoast, 2018:C5, p. 4.
[176] Ibid., para 20.
[177] Ibid., para 35.
[178] Ibid., para. 36.
[179] Ibid., para. 37.

there is some evidence of deterioration of infauna characteristics of the Wairoa River estuary as a whole".[180] (Mr Smith caveated that up-catchment sources of contaminants will also be contributing to any degradation of bed sediments in the river and estuary[181]).

343 Mr Smith went on to say that when the estuary is open, the "suggested [our emphasis] overall estuary deterioration is likely to be less than minor",[182] and when the rivermouth is closed, "it is suggested [our emphasis] that the discharge constitutes a significant adverse effect".[183] Mr Smith conceded during questioning that he is not aware of any evidence that demonstrates significant adverse effects during times of rivermouth closure. (Dr Mead, during questioning, also allowed that there is no evidence of this.) We note that Mr Smith's conclusions in para. 75 (by contrast) are not qualified: "effects of the current discharge on the ecology and sediments around the outfall are [our emphasis] no more than minor when the rivermouth is open and unrestricted, however, when the mouth is closed or restricted significant adverse effects on ecology and human health are [our emphasis] more than minor".

344 During questioning, Mr Smith stated that he agreed with Dr Mead's assessment of the state of the river/estuary ecosystem as being "stressed and degraded", with the effects of the current WWTP operations being "localised and not outstanding, by and large". During questioning, Dr Mead agreed with Mr Smith's assessment of the current state of the estuary on every point.

345 Dr Mead opined that "the [future] environmental impacts of discharges from the outfall will be minor and localised to within 25 m of the diffuser".[184] (The specific figure of 25 m derives from the hydrodynamic modelling that showed that "dilutions of <100x do not occur outside of the 25 x 25 m release cell/outfall location during any of the discharge scenarios, and dilutions of <200 do not occur over 25 m away from the outfall for most scenarios for the majority of the time"[185]).

346 The crux of Dr Mead's argument is that, since (1) the effluent quality will be improved by new treatment processes, the discharge regime will be tied explicitly to the river flow, which will ensure effective and rapid dilution of effluent, the outfall diffuser will be moved to a part of the channel where dilution is greater compared to where the existing diffuser discharges, and the reticulation network will continue to be improved resulting in fewer overflows and more efficient operation of the plant, and (2) there are no discernible impacts on benthic macrofauna and sediment quality associated with the current regime, then (3) future impacts will be no greater than present impacts, and likely will be less. Dr Mead laid out his full reasoning in his statement of evidence, para. 45–50. Although some elements that Dr Mead builds his assessment on are not guaranteed by the consent conditions proposed at the time of the hearing, for example, land-based treatment and additional storage, other elements such as improved effluent quality, matching discharge to river flow and discharging further out into the main channel

[180] Ibid., para. 59.
[181] Ibid., para. 58.
[182] Ibid., para. 60.
[183] Ibid., para. 61.
[184] Dr Mead's statement of evidence, 16 November 2020, para. 5j[iii].
[185] Ibid. para. 14h.

should (we find) be obtainable. Dr Mead opined, during questioning, that, were he to disregard the aspirational elements of the application, his assessment would be unchanged.

347 Dr Mead's assessment of the future environmental impacts of discharges from the outfall were not challenged.

348 There is no disagreement that the estuary is currently degraded, or that the current effects of the WWTP discharge are localised and not outstanding. As for future effects under the proposed new regime, we accept Dr Mead's assessment that effects will be minor and localised, even disregarding the prospect of land treatment of effluent, since there is a good expectation that effluent quality and dilution in the estuary will both be improved whether or not land treatment is implemented.

349 (ii) Effects of extending the pipeline on macrobenthos and bed sediments ("construction/installation effects"). WDC proposes a 200-m extension to the existing pipeline, which will locate the diffuser in the centre of the main channel, where current speeds are significantly greater compared to current speeds where the existing diffuser discharges.[186]

350 Based on modelling results provided by WDC, Dr Kelly agreed with the Applicant's view that repositioning the outfall/diffuser will result in "the broader distribution of suspended materials in the discharge, but sedimentation patterns will largely be determined by river migration, the position of the entrance [rivermouth], and sand bars in the lower estuary".[187] However, as to effects on the seabed and benthic ecosystem that might arise during installation of the new pipeline, Dr Kelly opined that these "do not appear to have been addressed".[188,189] Dr Kelly elaborated that, although the Applicant "indicated that effects on pipi [due to repositioning of the outfall] are expected to be localised and temporary", the eCoast 2018 data indicate the presence of "relatively dense populations of juvenile pipi … spread throughout intertidal areas in the lower estuary", while the "subtidal area proposed for the new outfall has not been surveyed".[190]

351 Dr Kelly concluded that "moving the outfall into the channel has the potential to physically disturb pipi beds (or other subtidal species)".[191] Since subtidal habitats and communities in the proposed area have not been surveyed, Dr Kelly recommended that, if consent were to be granted, "the area of disturbance be minimized during construction".[192]

[186] Dr Mead's statement of evidence, 16 November 2020, para. 5g.
[187] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 4 July 2019, p. 4.
[188] Ibid.
[189] The initial AEE, which Dr Kelly examined, was undertaken in November 2018, but following that AEE the outfall/diffuser location was subsequently proposed to be modified to extend some 200 m further into the main estuary channel. That is, the basis of the AEE was changed, which is the source of Dr Kelly's complaint.
[190] Ibid.
[191] Ibid., p. 6.
[192] Ibid., p. 4.

352 Mr Smith offered no specific opinion on potential effects of the proposed repositioning of the outfall/diffuser on the local bed sediments and macrobenthos, recording instead only what those effects will depend on.[193]

353 Dr Kelly acknowledged receipt from Dr Mead of new 2020 "preliminary observations" that characterise the seabed community along the new outfall alignment, "which simply confirmed that adult pipi and cockles were present along the alignment".[194] Dr Kelly stated that "I cannot provide advice on likely ecological effects [associated with re-positioning the outfall] until further details are provided".[195]

354 Ms Diack, while acknowledging a lack of information, opined that, "provided the activities are undertaken in accordance with best practice to minimise potential effects where possible, and through the recommended resource consent conditions I consider that the extent of the effects on recreational access to the overall riverbed should be less than minor because the effects from the construction works and improved discharge quality are expected to be localised and of a short to medium-term nature".[196]

355 Dr Mead reported on the new 2020 data (survey undertaken on 9 September 2020) that show "the presence of adult pipi in the central channel [along the proposed route for the extended pipeline], which are likely the source of the juvenile pipi found throughout the lower estuary".[197] Dr Mead acknowledged the possibility of effects on these shellfish during construction, noting the potential for direct (due to impacts of machinery and disturbance of bed sediment) and indirect (due to suspension in the water column of fine sediments disturbed by the operations) effects, and recommended that "appropriate measures" should be applied to "minimise impacts on the adult pipi population", which is a "culturally important species".[198] Dr Mead concluded that "the direct impacts of construction/excavation in the estuary are considered minor, and will be relatively short-term and localised".[199]

356 As for indirect effects, Dr Mead opined that these will be minor to less than minor.[200] Among the reasons given for these views were that construction activity will be short-term and temporary from which "the environment can/will recover"; the spatial extent of the impact will be small relative to the size of the estuary; the estuary is "most often extremely turbid" and high rainfall results in suspended-sediment concentrations in the water column that are "many orders of magnitude greater than" concentrations that will occur during construction; similar species are found throughout the lower estuary; and the area that will be affected by construction is not particularly "unique or special habitat or benthic community".[201] Dr Mead presented an Environmental Management Plan (EMP) designed to minimise construction

[193] Mr Smith's statement of evidence, 23 November 2020, para. 62–63.
[194] Dr Kelly's memo to HBRC regarding Wairoa wastewater discharge consent application APP-123774, 6 October 2020, p. 2.
[195] Ibid.
[196] s 42A report, 6 November 2020, para. 108.
[197] Dr Mead's statement of evidence, 16 November 2020, para. 50.
[198] Ibid., para. 52.
[199] Ibid.
[200] Ibid., para. 52.
[201] Ibid.

effects on pipi and on the benthic ecosystem in general, including scheduling the work at low flow, avoiding seasons when pipi spawn, minimizing the construction footprint, allowing the trench to infill naturally, and using silt curtains.[202]

357 During questioning, Dr Kelly agreed with Dr Mead's assessment of effects and that Dr Mead's proposed plan and methods for minimising effects on benthos, including pipi, during construction/installation of the new outfall were adequate.

358 WDC endorsed Dr Mead's EMP, and noted that key points of the EMP seem to be already agreed between the parties' experts.[203]

359 We accept that adoption of and adherence to the procedures in an EMP as laid out by Dr Mead could minimise adverse direct and indirect effects during construction of the extended pipeline. We return to this point on the issue of consent conditions below.

360 (iii) Occasional relocation of outfall diffuser. To allow for natural movement of the river channel, the Applicant seeks flexibility in the consent conditions to allow the discharge structure (diffuser) to be moved anywhere along the pipeline,[204] without having to obtain a resource consent every time that this may need to be done. This represents a step back from the initial proposal of being able to move the pipeline (and attached diffuser) anywhere within a designated area as needed to keep the diffuser in an optimum part of the river.

361 Ms Diack did not consider this original approach to be tenable, particularly as possible changes are likely to impact interested parties such as (but not limited to) Te Rohe o Te Wairoa Reserves Board - Matangirau, customary rights and customary marine title applicants, and the submitters. Furthermore, depending on the changes, public notification may be warranted.[205]

362 Mr Drury took up the case in his evidence beginning at paragraph 41, and noted that the "potential for river conditions to change and the need for the outfall to be altered is seemingly not the matter of debate, rather the process to make changes".[206] The Applicant proposes a method of "sliding"[207] the outlet diffuser along the new pipeline (as opposed to realigning or moving the whole pipeline), which will limit "the scale and extent of effects, and provided the works were undertaken in accordance with the type of construction methodologies and management procedures as proposed as part of its initial installation (those being considered as part of this application), the scale of effects would arguably fall within the envelope of effects considered and approved under this consent process".[208] Furthermore, "there is sufficient certainty around the scale of associated effects, measures to avoid, remedy or mitigate them

[202] Ibid., para. 53.
[203] Interim response of counsel for WDC in response to the panel's minutes dated 11 December 2020 and 11 January 2021; 28 January 2021; Table 1, condition 32.
[204] Mr Lowe's statement of evidence, 16 November 2020, para. 64.
[205] s 42A report, 6 November 2020, para. 101.
[206] Mr Drury's statement of evidence, 16 November 2020, para. 44.
[207] Mr Teear explained during questioning that it is not literally a matter of "sliding"; a new hole will be drilled in the pipeline at the desired location and a new riser/diffuser will be attached over the new hole.
[208] Mr Drury's evidence, para. 46.

while avoiding potential delay in responding to issues that pose the potential for greater effects and costs that are arguably unnecessary".[209]

363 WDC agreed to develop a condition to limit effects during any occasional diffuser relocation to the installation "envelope of effects".[210]

364 We acknowledge that relocation of the diffuser may be time-critical, and that significant adverse effects may result if it were not possible to move the diffuser in a timely way as a result of needing to navigate a consent hearing process. We find that there is a reasonable level of certainty that relocation effects could be constrained to the installation "envelope of effects" provided that the installation procedures and precautions are also applied during diffuser relocation.

(c) Mahinga kai

365 Ms Diack, noting that the issue of potential adverse effects on mahinga kai had been raised by submitters and by Dr Kelly, concluded that the "potential effects on the mahinga kai, particularly as a result of the installation/construction of the proposed replacement outfall structure needs to be addressed".[211]

366 We have previously addressed the potential effects of the installation/construction of the proposed replacement outfall structure; here we address the potential effects of the proposal on mahinga kai more widely throughout the estuary.

367 In the Applicant's response dated 19 March 2019 to HBRC's s92 request for further information on 22 February 2019, the Applicant argued that the estuary is not conducive to shellfish thriving, and no shellfish harvesting occurs, due to high levels of *E. coli* that would make them inedible. However, flounder are caught.

368 In the Applicant's responses dated 19 May and 25 June 2019 to HBRC's s92 request on 26 March 2019, the Applicant elaborated. Pipi are the most commonly found shellfish. Shellfish are not gathered for human consumption because of public health warnings, shellfish population declines, and the small size of pipi and mussel spat. In contrast, a range of fish is caught in the estuary. However, most fishing is in the ocean or in the pristine upper Wairoa catchment. WDC took the fact there was no response from Marine and Coastal Area Act (MACA) claimants on the proposal and its accompanying AEE as evidence that kaimoana and mahinga kai are not valued and perhaps do not exist in the vicinity of the WWTP discharge pipeline or its plume.

369 In response, Dr Kelly opined that there could be many reasons for the MACA claimants' silence, and it is unwise to assume anything from the lack of feedback.[212]

[209] Ibid., para. 47.
[210] Interim response of counsel for WDC in response to the panel's minutes dated 11 December 2020 and 11 January 2021; 28 January 2021; Table 1, condition 33.
[211] s 42A report, 6 November 2020, para. 8.
[212] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 4 July 2019, p. 5.

370 Describing Māori cultural values, Ms Foster said that the "river provided food for whānau, such as watercress, tuna, whitebait, koura, flounders, kahawai, and much, much more".[213] In her submission of 10 September 2019, Ms Kanawa attributed the following statement to the Deed of Settlement 2: Historical Account 27, Ngamotu Lagoon and Whakamahia Lagoon, The Iwi and Hapū of Te Rohe O Te Wairoa and Trustees of the Tātau Tātau O Te Wairoa Trust and the Crown: "The river mouths and lagoon were important mahinga kai for local Māori. The Ngamotu lagoon is on the eastern side of the mouth of the Wairoa River. It was traditionally a source of kai moana, including tuna, pātiki (flounder), kākahi (pipi), whītiko (periwinkle), tuangi (cockle) and kuku (freshwater mussel), and is noted for its birdlife. The Whakamahi lagoon, another valuable source of the same rich variety of kai moana, as well as a place to collect driftwood, is on the other side of the river mouth". In her statement of evidence at para. 26, Ms Kawana referred to "mahinga kai references found in Wairoa DC library" in stating that "To this day the Wairoa awa is still [our emphasis] an important food source for the people of Wairoa. In season, clusters of whitebaiters can be seen eagerly awaiting their catch on the river's banks, and fishing is an important pursuit annually along the river". Ms Kawana referred to the river as "our supermarket" during questioning.

371 Mr Smith confirmed the presence of pipi and cockles in the estuary, noting that "these species were a significant kaimoana resource for mana whenua, though presently are not harvested to any significant degree as their whereabouts became unknown, and concerns about poor water quality in the estuary and effects of consumption of feeding organisms on human health".[214] Mr Smith warned that the "unknown extent of the shellfish bed provides significant uncertainty as to the health of the bed and ability to recolonise following disturbance. Moreover, the current degraded state of the estuary could potentially preclude recolonization over a time period acceptable to the community".[215] Mr Smith said during questioning, "we are dealing with a highly degraded estuary, but it is still a significant source of mahinga kai". Mr Smith was asked during questioning whether he agreed with the view that, although we have more information on [the wider] mahinga kai, we still do not know enough, and therefore more work needs to be done, to which Mr Smith agreed.

372 Dr Kelly referred to a 2017 recreational use survey by Petch et al. that indicates that "fishing / gathering / whitebaiting are important activities around the river mouth" but that "details on what and where edible species are gathered are not provided".[216] Dr Kelly concluded that "potential impacts on kaimoana have not been adequately addressed", despite further information being provided by the Applicant.[217] Ms Kawana supported Dr Kelly's view and questioned "the robustness in WDC opinion on the significance of mahinga kai …. values for the [river/estuary] receiving environment".[218]

[213] Ms Foster's statement of evidence, 20 November 2020, para. 6.1f.
[214] Mr Smith's statement of evidence, 23 November 2020., para. 67.
[215] Ibid., para. 68.
[216] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 13 February 2019, p. 8.
[217] Dr Kelly's memo to HBRC regarding review of Wairoa WWTP ecological assessments, 4 July 2019, p. 5.
[218] Ms Kawana's submission, 10 September 2019.

373 Dr Mead referred to discussions with Mr Smith that indicated that the kaimoana species of importance in the lower estuary are "mainly fish species" and that "pipi have also historically been an important kaimoana in the lower estuary".[219] Some submitters did raise issues, albeit quite general issues, around shellfish gathering.

374 During questioning, Dr Kelly agreed with the "local assessment" (that is, the assessment of effects associated with installation/construction of the new pipeline in the immediate vicinity of that activity, which we have addressed previously), but he opined that the Applicant still had not provided (a) any assessment over the wider area of the larger mahinga kai resource (that is, more than just shellfish), (b) any assessment of the use of the larger mahinga kai resource, and (c) how the larger mahinga kai resource and its use might be affected by the activities in the application.

375 All parties agree that the discharge quality is set to improve as work on the reticulation network continues, resulting in fewer overflows and more efficient operation of the plant, and new treatment (UV disinfection and sand filtration) comes on line. In addition, linking discharge to river flow and relocating the outfall to a deeper channel would enhance dilution of the effluent in the receiving environment.

376 We find that it is reasonable to expect an improvement in discharge quality and that potential adverse ecological effects on mahinga kai considered from a western science perspective (that is, disregarding any adverse effects arising from tikanga issues) will be minor.

377 Given the cultural importance of mahinga kai, the tikanga prohibitions concerning discharge of wastewater directly into water, and the special protection that mahinga kai is afforded by, amongst other statutes and policies, the RMA and NZCPS, we took the view that there was a compelling case to be made for acquiring more information on mahinga kai use, potential effects and monitoring (that goes beyond monitoring of pipi that are local to the outfall structure). Accordingly, and as noted earlier, we requested an independent assessment of both values and effects in relation to mahinga kai widely throughout the estuary. The Applicant responded that it had contacted Ngāti Kahungunu in 2017 to conduct a Mauri Compass Assessment of the tikanga effects of the existing and proposed river discharge regimes, which included identification of mahinga kai locations as a key task.[220]

378 Mr Smith opined that potential effects on larger-scale mahinga kai – pipi in particular – are not known with any certainty, mainly because the extent of the mahinga kai resource is not well known. This, in Mr Smith's opinion, warrants broad-scale habitat mapping and monitoring throughout the wider estuary.

379 Accepting Mr Smith's advice, we find that broad-scale habitat surveys on a regular basis within the Whakamahi and Ngamotu Lagoons downstream of the outfall would assist with understanding the extent of the mahinga kai resource, and that potential adverse tikanga-

[219] Dr Mead's statement of evidence, 16 November 2020, para. 70.
[220] Responses from WDC to the Panel's questions raised in the First Minute dated 11 December 2020, 30 July 2021, paras. 56–57.

based effects on mahinga kai could be managed by mauri monitoring that includes assessing the effects on mahinga kai associated with the operation of the WWTP, and long-term monitoring of mahinga kai.

(d) Human health

380 Ms Stockman, who identified herself in her submission as the lead waka ama coach in Te Wairoa, and who paddles the Wairoa River 12 months of the year, reported during questioning that she has had personal experience with children who have contracted ear infections and suffered stomach problems after being on the river. In her submission, Ms Stockman conceded that "the measure of … impact is clouded because of the pollution levels that our river already carries", but that this is "not a reason to conclude that a bit more discharge won't make a difference".

381 Ms Kara-France provided scientific (monitoring) evidence for a human health risk. She cited an HBRC report as saying "elevated bacteria levels are generally observed after heavy and prolonged rainfall", which she implicitly links to the fact that "the town's stormwater and wastewater flow directly into the river at times, and there are both active and closed landfills near the river mouth".[221] Furthermore, and referring to the same HBRC report, the "water quality in this area has high levels of bacteria and is unsafe for swimming".[222]

382 However, it is not clear that all of the problem can be laid at the feet of the WWTP, and therefore mitigated by managing the WWTP discharge. Mr Lowe argued that no "public health impacts have been directly associated to the discharge" (while also acknowledging that the current discharge is culturally objectionable to the community).[223] Mr Lowe also pointed out that "the river upstream of the discharge commonly fails contact recreation limits"; furthermore, "there is rapid dilution of the discharge", which will be improved under the proposed discharge regime.[224] Furthermore, assuming that any public health risk arise from pump station overflows, then "it should be noted that these discharges occur almost solely during wet weather events when the river is in flood. Therefore, the risks of public health events are negligible.[225]

383 Hawke's Bay District Health Board (HBDHB) neither supported nor opposed the application, but did declare agreement that there is a need to improve the microbial quality of the wastewater discharged to the Wairoa River, and did support the plan to install sand filtration and UV light disinfection as a treatment step prior to discharge.[226]

384 (i) Safety of surfers and fishers during summer months. Ms Battes expressed concern for the safety of surfers who routinely surf the Wairoa bar and for fishers who conduct activities in the estuary early in the morning.[227] Her concern relates to the health risk associated with contact

[221] Ms Kara-France's statement of evidence, 20 November 2020, para. 9.3.2b.
[222] Ibid., para. 9.4.1b.
[223] Mr Lowe's statement of evidence, 16 November 2020, para. 29.
[224] Ibid., para. 30.
[225] Ibid., para. 72.
[226] HBDHB submission, 10 September 2019.
[227] Ms Battes' submission to 30 November 2020 hearing, pp. 4–5.

with wastewater discharged at the outfall, and specifically relates to early-morning activities, arguing that "the period in which wastewater discharge is permitted should end sufficiently in advance of any surfing at the bar and fishing activity commencing for everyone to be sure that no wastewater is present". In summer, this would mean a condition requiring cessation of discharge by 4.30 am, unless weather conditions dictate otherwise. During questioning, Mr Heath opined that such a condition might limit the ability of the WWTP to operate within consent parameters when the tides are "just so", but also allowed that the new storage could avoid this limitation.

385 WDC noted that, in response to community requests, the discharge timing has already been shortened by delaying evening discharge commencement during daylight savings. Although, the Applicant argued, a further reduction in discharge time might lead to consent breaches, it might [Applicant's emphasis] be acceptable for flows below median. Any limitations might be relieved as new storage and land irrigation come on-line in the future.[228]

386 During expert conferencing, WDC agreed to a new condition that requires ceasing discharge by 4 am during the months of December to March inclusive, but only after the commencement of UV treatment and filtration, the commissioning of additional storage, and the commissioning of land-based irrigation. NKII wanted "this to occur from commencement of consent", and HBRC preferred "this to happen asap", noting concern that the "preconditions may not all be met over the term of the consent".

387 We accept the anecdotal and monitoring data that indicate that pathogens in the river/estuary pose a risk to human health. We also accept that the pathogen load cannot be entirely due to discharges from the WWTP, and that times of greatest contribution to the total pathogen load will be when the pump stations are overflowing, that is, before wastewater makes its way to the WWTP where it is treated and then discharged. Nevertheless, there are perception, aesthetic and tikanga issues associated with recreating in water mixed with treated wastewater, which could be at least partially mitigated by restricting times of discharge, especially in the summer months, when recreation is at its yearly peak.

388 (ii) Use of QMRA to understand human health risk. To better understand the human health risk associated with recreational use and customary fishing practices, and to ascertain the extent of the WWTP's contribution to that risk, the Panel requested an independent quantitative microbial risk assessment (QMRA) or, failing that, to explain why such an analysis is not needed.

389 WDC responded that since the "existing discharge has not been a public health risk concern for Hawkes Bay District Health Board or its Public Health Officer", there is a "limited occurrence of reported public health issues", the upstream river quality is poor, and UV treatment is planned to be added, then there is no value to conducting a QRMA.[229]

[228] Interim response of counsel for WDC in response to the panel's minutes dated 11 December 2020 and 11 January 2021; 28 January 2021; Table 1, conditions 7 and 8.
[229] Responses from WDC to the Panel's questions raised in the First Minute dated 11 December 2020, 30 July 2021, paras. 58–60.

390 We acknowledge that, during questioning, Mr Cameron Ormsby, for the HBDHB, stated that he was satisfied that no QMRA was necessary, and that any human health risk could be managed effectively by proper maintenance of and performance standards for the UV/sand system, and good communication (signage, social media, print media) in the event of overflows from pump stations. Furthermore, HBDHB did not raise the issue of a QMRA in its written submission, and no evidence was put before us of frequently recurring public health notices. We therefore accept the Applicant's position that a QMRA will not be of value.

391 (iii) UV disinfection and sand filtration. The installation of sand filtration and UV disinfection is a key element of the plan[230] to reduce pathogens and manage human health risk and to protect the mauri of the river.[231] Implementation is planned for 2022/23.[232] Mr Lowe noted that, while filtration may be of "limited purpose in terms of river water quality, [it nevertheless] provides for filtration and purification that could otherwise have been provided by Papatūānuku ".[233]

392 Mr Dempsey noted that it is "particularly important" to know the performance of the filtration and UV system, which is "pivotal to the [proposed] conditions related to increased flexibility in discharge times"[234], which will result in "increased contact of treated wastewater with recreational users".[235]

393 There are two approaches that can be taken to address the performance of the filtration and UV system: (a) set conditions that require a specified level of pathogen removal or reduction; or (b) set conditions that require disinfection to be effective through requirements on operating conditions such as UV dosage and effluent transmissivity. The first approach can be viewed as "hands off", in that the treatment plant operator would be allowed to manage the system as they see fit (while achieving the required reduction in pathogens). However, this opens the risk that performance of the filtration and UV system may vary significantly over time. That risk may be mitigated by the second approach.[236] We now consider each approach.

394 (a) Pathogen reduction. HBDHB opined that certainty is required that, following upgrade of the plant with sand filtration and UV disinfection, design removal of specific enteric pathogens is being achieved.[237]

395 In response to a question from the Panel, Mr Dempsey confirmed his view that "conditions are required that reflect reduced pathogen levels in the discharge".[238] Furthermore, Mr Dempsey opined "Typically, and ideally, modelling and microbial risk assessments of the receiving

[230] The UV and filtration system is the only upgrade of the WWTP that has been proposed. Mr Lowe explained the reasons for this in his statement of evidence, 16 November 2020, para. 58.
[231] Mr Dempsey clarified that the "UV system doses ultraviolet (UV) radiation only, and does not include a filtration barrier. Filtration is commonly paired with UV systems, as solids in the wastewater impair UV disinfection by shielding pathogens, and absorbing the UV radiation. So the filtration system improves the removal of solids in the effluent, and the UV system disables pathogens (disinfection), and its performance is impacted by the concentration of solids in the wastewater" (Mr Dempsey's supplementary evidence, December 2020, para. 24).
[232] Mr Heath's statement of evidence, 16 November 2020, para. 27.
[233] Mr Lowe's statement of evidence, 16 November 2020, para. 30.
[234] Mr Dempsey's letter to HBRC, 6 October 2020, p. 1.
[235] Ibid., p. 15.
[236] Mr Dempsey's supplementary evidence, December 2020, paras. 21 and 22.
[237] HBDHB submission, 10 September 2019.
[238] Mr Dempsey's supplementary evidence, December 2020, para. 3.

environment would provide clear requirements for a safe level of pathogens in the discharge. In the absence of this analysis, and recognising the intent of the consent to withdraw discharges to the river over time, some level of reasonable pathogen reduction in the discharge should be sought".[239] Mr Dempsey acknowledged the Applicant's stated intent to conduct UV and filtration trials in the near future, which would provide a basis for formulating a condition on levels of pathogen removal.

396 As noted earlier, Mr Lake expressed the view that "there is no need for more detailed assessment of likely changes in [effluent] quality after UV is installed so that new limits can be imposed [in conditions attached to a consent]" since "if the discharge quality … set for the period prior to installing UV is found to be acceptable for discharging to the river (and it seems that HBRC accept that it is), then there is no reason to lower those limits after installing UV simply because [UV is more effective]" and "the effects of the current discharge are less than minor as indicated by Dr Shaw Mead".[240] Mr Lake conceded that "pathogen reduction rate requirements set for discharges below 3,000 cubic metres per day, which will occur when the river flows are less than median" could "perhaps" be appropriate,[241] but favoured requirements for minimum UV transmissivity[242] (which is the second approach; see below).

397 Mr Lake stated willingness to consider pathogen reduction standards, at least up to certain wastewater flow rates, but also pointed out that "it is important to keep in mind that the upgraded discharges will be cleaner than the river's sediment and pathogen concentrations, so monitoring of these parameters in the treated wastewater [would be] of limited benefit for assessing any adverse effects on the river receiving environment".[243]

398 (b) Disinfection effectiveness. Mr Dempsey noted that a "more effective way of ensuring that disinfection is occurring on a consistent basis is to measure and record UV transmissivity (typically online) and UV dose (which is a product of the UV intensity of the system and the flow through it). In my view, including these parameters as reported values with conditional limits would be valuable to ensure that effective disinfection is occurring at all times. Measurement of these parameters is commonly designed into modern UV disinfection systems".[244] Mr Dempsey noted that for "plants with UV disinfection, we would typically expect to see a condition around achieving UV transmissivity of a suitable percentage. This ensures that UV disinfection actually takes place".[245]

399 Mr Dempsey noted that it "is impractical to expect filtration and UV systems to be designed to treat all flows during wet weather events. As a result, some flows will need to be bypassed",[246] and the "extent of this [frequency and volume of bypassing] should be recorded".[247] Mr Lake

[239] Ibid., para. 5.
[240] Mr Lake's statement of evidence, 16 November 2020, para. 19.
[241] Ibid., para. 20.
[242] Ibid.
[243] Interim response of counsel for WDC in response to the panel's minutes dated 11 December 2020 and 11 January 2021; 28 January 2021; Table 1, conditions 14, 38 and 51.
[244] Mr Dempsey's supplementary evidence, December 2020, para. 22.
[245] Ibid., p. 9.
[246] Mr Dempsey's letter to HBRC, 6 October 2020, p. 19.
[247] Ibid.

commented on the matter of bypassing (of the filtration and UV system), noting that WDC has been asked by the community to ensure that all flows pass through the UV system. This is feasible, but at the cost of reducing the UV effectiveness at the highest flows.[248] Mr Lake reasoned that lower-quality discharges during river floods may not be of much concern since fewer people will be using the river at those times, and the flooded river will provide increased dilution of discharges.

400 Mr Dempsey recommended setting a minimum flow to be filtered and UV treated before bypassing [of the filtration and UV] systems may be initiated.[249]

401 We agree with Mr Dempsey that setting requirements on UV/filtration operating conditions is an effective way of achieving appropriate disinfection.

402 The Applicant agreed to include UV monitoring parameters in consent conditions, but noted that suitable parameters must await UV design specification.[250] We return to this point on the issue of consent conditions below.

403 (iv) Performance measures for reticulation network improvements. The three pump stations are known to overflow during wet weather. The overflows consist of "primarily stormwater, with some contamination from [untreated] wastewater".[251] Network improvements that reduce inflow and infiltration (I&I) will reduce the load on the network, which will translate into fewer episodes of overflows. Reduction of I&I will also increase pumping capacity and reliability.[252] Mr Heath acknowledged that a "focus on infiltration and inflow management has been considered more critical than treatment plant improvements, as reductions in flow will greatly influence treatment plant design".[253] Some considerable improvements have already been made (e.g., work on 400 properties to remove illegal stormwater connections to the sewer network and to lift non-compliant gulley traps) and WDC is committed to continuing this programme of work, within practical constraints.[254] The reality will always be that large rainstorms will, from time to time, overwhelm the system, resulting in overflows.[255]

404 Dr Mead used his hydrodynamic model to investigate the effects of a 3-year ARI rainfall event that resulted in a wastewater spill at each of 3 locations. The simulations showed that rapid mixing of the overflow plumes reduced contaminant concentrations to levels that do not present a threat to benthos within 25 m of the overflows.[256] Dr Mead concluded that "while rain events can lead to overflows, they also create conditions where spilled substances can be rapidly diluted and flushed from the river by increased river flow".[257]

[248] Mr Lake's statement of evidence, 16 November 2020, para. 17.
[249] Ibid., p. 10.
[250] Interim response of counsel for WDC in response to the panel's minutes dated 11 December 2020 and 11 January 2021; 28 January 2021; Table 1, condition 38.
[251] Mr Lowe's statement of evidence, 16 November 2020, para. 28.
[252] Mr Dempsey's letter to HBRC, 6 October 2020, p. 4.
[253] Mr Heath's statement of evidence, 16 November 2020, para. 22.
[254] Ibid., para. 23.
[255] Ibid., para. 24.
[256] Dr Mead's statement of evidence, 16 November 2020, para. 5e.
[257] Ibid., para. 39.

405 HBDHB expressed concern that the discharge of untreated wastewater from the Alexandra Park, Kopu Road and North Clyde pump stations via overflow outlet pipes into the Wairoa River poses a potentially higher risk to persons using the river.[258] HBDHB professed to be "unhappy" about that prospect, and believed that "a programme of continuous improvement should be adopted by Council that aims to mitigate stormwater ingress into the wastewater system".[259] To help mitigate risk associated with overflows, HBDHB called for alerting the community to the danger when it occurs, including advice on when it is safe to resume use of the river.

406 Ms Battes expressed concern for the robustness of the conditions associated with overflows at pump stations.[260] Her concern was illustrated by reference to an overflow at the North Clyde pump station that occurred in 2017, which she presented as evidence that "WDC has a track record of being non-compliant, a track record of not cooperating with investigation, and that HBRC's track record in respect of enforcement function is not one that generates confidence".[261] Ms Battes requested as a remedy a number of improvements to the pump stations' telemetry, including that alarms be transmitted to HBRC when an overflow is imminent, monthly checks of alarm functioning, "hard coding" of telemetry control to prevent tampering, and reporting on volume of raw sewage discharged during individual overflow events (which would help to quantify performance of network improvements).

407 Ms Battes also expressed concern that there are no performance measures for the proposed network improvements that are designed to reduce inflow and infiltration.[262] She noted that the volume of wastewater (which will be influenced by reductions in I&I) will (one imagines) have an important bearing on treatment design. Furthermore, there is a "readymade" set of performance measures available in New Zealand's Inflow and Infiltration Control Manual. Ms Battes opined that performance measures are needed to, at least, enable validation of cost–benefit assessments. Mr Dempsey also argued for performance measures for the ongoing and proposed network improvements, noting that reducing "I&I is an important step for bringing the treatment system into compliance consistently".[263] In his supplementary evidence, Mr Dempsey confirmed his view that the "inclusion of performance standards for I&I reduction is crucial to reduce overflows at pump stations, and ensure the ongoing efficacy of the treatment plant".[264] Furthermore, investment "in I&I improvements without measurement of the improvements is atypical. Accurate measurement of influent to the treatment plant (in particular night flows), measuring and/or recording of overflows, and long-term monitors in the network are some of the ways that the impact of I&I improvements can be measured. The biggest barrier to implementing these measures is cost, but given the cost of investment in network improvements, this is a good investment to demonstrate value".[265]

[258] HBDHB submission, 10 September 2019.
[259] HBDHB submission, 10 September 2019.
[260] Ms Battes' submission to 30 November 2020 hearing, pp. 5–6.
[261] Ibid, p.5.
[262] Ibid., p. 6.
[263] Mr Dempsey's letter to HBRC, 6 October 2020, p.1.
[264] Mr Dempsey's supplementary evidence, December 2020, para. 8.
[265] Ibid.

408 WDC was "not keen to offer performance standards for ongoing reticulation improvements", arguing that "it is almost impossible to predict how much will be gained by renewing or repairing each section of the reticulation" and, in any case, "variations in I&I have not varied the discharge quality over the years, so it seems that such standards are not relevant or necessary for improving the WWTP's treatment performance".[266]

409 A number of interconnected conditions regarding I&I and improvements to the reticulation network were proposed. These include the preparation of a Network Management Plan (NMP) that, amongst other things, will set out how flows to the treatment plant will be monitored and recorded, and how pump station overflows will be monitored and responded to.

410 The interconnected conditions, as proposed, still lacked performance measures. The Panel requested specific milestones/performance measures regarding the inflow and infiltration programme.

411 In its response, WDC noted that the LTP provides for several performance measures for wastewater reticulation and pump station overflows which are directly related to I&I. These measures are specific and quantitative.[267] However, the related WDC infrastructure Strategy "does not provide numerical or qualitative goals for I&I reductions over the next 30 years".[268] WDC argued that the "precise extent of flow reductions is difficult to assess because of the linkage between flows and wet weather events and the limited duration of the flow data set",[269] and presented data that demonstrates the point.[270]

412 We accept that the data presented by the Applicant confirm the complexity of this issue and also demonstrate significant reductions in I&I volumes to date. We also accept WDC's stated intentions to maintain a programme of continuous improvement to the reticulation network, within practical and budgetary constraints, and that the conditions agreed by all parties will provide for oversight and reporting on I&I reductions as the reticulation network continues to be improved. We nevertheless take the view that performance measures are a necessary complement to oversight and reporting on I&I reductions.

(e) Operation of the WWTP

413 (i) Management of sludge. Ms Battes noted that "there is nothing in the draft consent conditions which requires WDC to monitor sludge levels and intervene when the sludge level reaches a particular threshold that compromises what treatment occurs".[271] Mr Dempsey was asked if he thought that there was any need for specific conditions relating to sludge management since sludge will have to be effectively managed anyway in order to comply with

[266] Interim response of counsel for WDC in response to the panel's minutes dated 11 December 2020 and 11 January 2021; 28 January 2021; Table 1, condition 39.
[267] Responses from WDC to the Panel's questions raised in the First Minute dated 11 December 2020, 30 July 2021, para. 22.
[268] Ibid., para. 23.
[269] Ibid., para. 25.
[270] Ibid., paras. 25–28.
[271] Ms Battes' submission to 30 November 2020 hearing, p. 4.

discharge standards, to which he answered that "sludge levels in the ponds are an operational matter, and … compliance with the discharge standards is sufficient".[272]

414 We accept Mr Dempsey's view that the discharge standards would reveal any issue with sludge management, therefore obviating the need for any conditions in this regard.

415 (ii) Accumulation of debris on mesh fence at overflow pipe. Ms Battes provided a photograph dated 9 April 2019 that she purported to show "debris accumulated on the mesh fence beyond the overflow pipe".[273] Ms Battes' "layman's assessment" (her words) is that "this issue is created by the newly installed cutter pumps at all pump stations shredding material so fine that it is bypassing the screen at the wastewater treatment plant, being carried through the plant, and then being discharged from it". She is concerned that this material, which might include "finely chopped plastic" will adversely affect birds and fish feeding in the estuary, and proposed that consent conditions require sampling of the discharge at the outfall or along the outfall pipe, in order to ensure that reporting on the discharge is "real".

416 Mr Lawson reasoned that Ms Battes' concern must be with large debris, not fine debris as Ms Battes claims, since "fine solid debris … would be difficult to distinguish [in the photograph] from the river's contributions of silt".[274] As for the large debris, Mr Lawson argued that the "debris shown in the photographs supplied by Ms Battes is clearly driftwood" and that "it is impossible for large debris to be coming from the cutter pumps, sewer overflow, or WWTP".

417 We are not particularly persuaded by Ms Battes' assertions: she seems to be concerned about the accumulation of fine material, and yet fine material that is any different to the normal river silt is not distinguishable in her photograph. Large debris is clearly visible, and we agree with Mr Lawson that this appears to be driftwood, presumably washed down from the catchment in the river in the normal course of events. We accept Mr Lawson's assertion that debris of this size could not transit the wastewater network, and therefore are inclined to dismiss Ms Battes' argument and decline her request for a condition to deal with this issue.

418 Nevertheless, it would be a relatively simple matter to make observations after major rainfall events of any large debris discharged from the WWTP. A condition requiring this was agreed at expert conferencing.

419 (iii) Discharge of treated effluent on incoming tides. HBDHB and other submitters (for instance, Ms McIlroy) expressed concern that the Applicant seeks "24/7" discharge of treated wastewater into the river, which will mean discharge on incoming tides. HBDHB recommended that advice that tidal flows will not result in pathogens being transported upstream be reviewed and verified by HBRC or an independent scientist.[275]

[272] Supplementary evidence of Nick Dempsey, December 2020.
[273] Ms Battes' submission to 30 November 2020 hearing, p. 3.
[274] Interim response of counsel for WDC in response to the panel's minutes dated 11 December 2020 and 11 January 2021; 28 January 2021; Table 1, condition 23.
[275] HBDHB submission, 10 September 2019.

420 Dr Mead addressed this matter. Modelling scenarios 9 and 10 addressed the case of continuous ("24/7") discharge from the WWTP with a river flow of 3x the median flow (which is the only condition during which continuous discharge is allowed in the conditions), which resulted in "low dilutions also upstream from the outfall due to the incoming tide, despite the increased river flow". Elaborating, the "dilutions upstream of the outfall are low and do not extend far north [upstream] of the outfall because the tidal flows are reduced and often reversed at river flow rates of 3x median; that is the flows are high enough to negate the incoming tidal signal".[276] During questioning, Dr Mead expressed the view that he could not conceive of a way that "ponding" of effluent upstream of the outfall could occur.

421 Dr Mead explicitly addressed this matter with his model. Given that we have confidence in Dr Mead's model, we also have no reason to doubt his conclusions on this matter. We therefore find that it is not likely that pathogens will be transported upstream on incoming tides to any extent likely to cause adverse effects.

422 (iv) Proposed discharge regime is less restrictive than current regime There was widespread concern that the proposed discharge regime is less restrictive than the current regime. Mr Lake addressed this perception, arguing that in fact the proposed regime is more restrictive for river flows smaller than 3x the median river flow, and that it is less restrictive in terms of volume and timing only when the river is in flood, which is when "discharges will have no or negligible effects and wastewater flows typically increase dramatically".[277] Nonetheless, "the discharge won't increase from historic discharges" and in fact it will "decrease at and below median flows, particularly as storage and irrigation are developed".[278] As discussed elsewhere herein, we understand that, in terms of effluent quality, gains are expected as I&I continues to be reduced (which will increase the WWTP performance and reduce overflows at pump stations of stormwater mixed with untreated wastewater) and as the UV/filtration system comes on line.

423 In our view, the claim that the proposed discharge regime is less restrictive than the current regime is somewhat over-stated. The situation is more nuanced than that, with the proposed discharge regime tied to the river flow, and for good reasons. As Mr Lawson put it, the proposed regime "means that discharges occur at the most appropriate times in terms of flushing the discharge from the river system", which includes discharging during floods.[279]

Summary of Technical Findings

424 We at this point summarise our findings on technical issues.

425 Regarding the adequacy of the hydrodynamic modelling:

- Conservative-tracer modelling is not inappropriate for this application.

[276] Dr Mead's statement of evidence, 16 November 2020, para. 37.
[277] Mr Lake's statement of evidence, 16 November 2020, para. 29.
[278] Ibid.
[279] Mr Lawson's synopsis of opening submissions on behalf of WDC, 30 November 2020, para. 13.

- The applicant has understood the model limitations, and properly interpreted and not overstated the modelling results.
- The particular location of the rivermouth depicted in the modelling is likely to be close to worst-case.

426 Regarding ecological effects:

- The estuary is currently degraded.
- The current ecological effects of the WWTP discharge are localised and not outstanding.
- Discharge quality will improve as work on the reticulation network continues, resulting in fewer overflows and more efficient operation of the plant, and new treatment (UV disinfection plus sand filtration) comes on line.
- Linking discharge to river flow and relocating the outfall to a deeper channel will enhance dilution of the effluent in the receiving environment.
- Potential adverse ecological effects will be minor and localised, even disregarding the prospect of land treatment of effluent.
- Provisions in conditions, including best-practice actions codified in an Environmental Management Plan, will minimise to an acceptable level potential adverse effects during installation of the extended pipeline.
- Conditions that require that installation procedures and precautions be applied during diffuser relocation will constrain potential adverse effects to the installation "envelope of effects".
- Provisions in conditions, including establishment within 3 years of 30,000 m^3 of additional wastewater storage, are sufficient to mitigate risks to human and ecological health during periods when the rivermouth is closed.

427 Regarding mahinga kai:

- Potential adverse ecological effects considered from a western science perspective (that is, disregarding any adverse effects arising from tikanga issues) will be minor.
- Broad-scale habitat surveys on a regular basis within the Whakamahi and Ngamotu Lagoons downstream of the outfall would assist with understanding the extent of the mahinga kai resource.
- Potential adverse tikanga-based effects on mahinga kai could be managed by mauri monitoring that includes assessing the effects on mahinga kai associated with the operation of the WWTP, and long-term monitoring of mahinga kai.

428 Regarding human health:

- Pathogens in the river/estuary pose a risk to human health, but the pathogen load cannot be entirely attributed to discharges from the WWTP.
- Human health risk associated with overflow of untreated wastewater from pump stations during heavy rainfall will be mitigated by dilution of overflow by concurrent high river flow and can be managed effectively by good communication (signage, social media, print media).
- There are perception, aesthetic and tikanga issues associated with recreating in water mixed with treated wastewater. Conditions that restrict times of treated-wastewater discharge, especially in the summer months, when recreation is at its yearly peak, will mitigate these concerns.
- Conditions that set standards for UV treatment will ensure that disinfection will occur consistently at an effective level.
- Conditions that set limits for *Escherichia coli* and Enterococci will be protective of human health.

429 Regarding operation of the WWTP:

- We accept WDC's stated intentions to maintain a programme of continuous improvement to the reticulation network, within practical and budgetary constraints. Conditions provide for oversight, performance measurement and reporting on I&I reductions.
- Discharge standards will reveal any issues with sludge management.
- It is not likely that pathogens will be transported upstream on incoming tides to any extent likely to cause adverse effects.
- The new discharge regime, which is tied to the river flow, is nuanced, and not fundamentally less restrictive than the current regime.

Planning Assessment

430 Having regard to our findings as recorded above in relation to the tikanga and technical issues in contention, we now briefly set out our findings with respect to the most relevant provisions of the various planning instruments, being as summarised at paragraph [115] of the decision above.[280] We record that we have considered the content of the Planning Assessment and s 42A report in preparing this section of the decision. Our findings, however, reflect our assessment of the evidence, again as just outlined in this decision.

[280] For a full reference to those provisions, refer to Appendix 1 to this decision.

431 Firstly, we find that as noted above, Policy 23 of the NZCPS does apply and that to grant consent to the continued discharge of untreated wastewater (as sought to be authorised in relation to the Kopu Road pump station overflow) would be contrary to that policy.

432 We acknowledge the evidence given and submissions received that any such discharges only occur during periods of high river flow, and involve similarly highly diluted untreated human sewage. Further, that Policy 23 does not apply to the Alexandra Park and North Clyde pump station outfalls. We very much doubt however that, from the tikanga perspective at least, that makes any material difference. We return to that point on the issue of duration.

433 Turning to the RPS objectives and policies regarding tikanga Māori and consultation with Māori, it will be evident from our assessment of the evidence in that regard as recorded earlier, and indeed from the representation of the culturally offensive and unacceptable nature of a continued wastewater discharge to the river in the AEE itself, that we do not consider the substance of these provisions to have been achieved by the proposal.

434 For example, Objective 34 of the RPS is to recognise tikanga Māori values and the contribution they make to sustainable development.

435 If we are genuinely to do that, we cannot find this principal objective of the RPS, in relation to the tikanga issues raised so starkly by this application, to have been met.

436 Similarly, Objective 37 is to protect and where necessary aid the preservation of mahinga kai with associated Policy 65 being that activities should not have any significant adverse effects on mahinga kai. Policy 66 is that the importance of coastal and river environments and their associated resources to Māori should be recognised in the management of those resources.

437 Again, having regard to our assessment of the evidence, we cannot find that the continued discharge of treated and untreated human effluent to the river estuary would protect or aid the preservation of mahinga kai, and would not have any adverse effects on mahinga kai which are considered significant by tangata whenua. That said, with progress made during expert conferencing on the conditions framework relative to the monitoring and assessment of mahinga kai, there is at least a degree of protection that would begin to be secured through implementation of this consent.

438 More generally in terms of these provisions, in so far as they relate to consultation, our assessment is that while consultation has not been perfect and we have received direct evidence to that effect, the Applicant (WDC) has been genuine in its attempt to consult including on a kanohi ki te kanohi basis (refer Policy 59).

439 Conversely, from a western science perspective we find no conflict with Policies 71, 72 and 72A of the RPS dealing with environmental guidelines to be achieved including after reasonable mixing.

440 As to Policy 72A (set with reference to the NPSFM 2017), we find that the discharge would not have an adverse effect on the life-supporting capacity of fresh water and ecosystems, at least to a more than minor extent and beyond the impact of other stressors in the lower river.

441 In relation to the effects of the discharge relative to the health of people and communities, our view is rather different, particularly when considering the tikanga dimension to cultural health and wellbeing, as well as the impacts on recreation, expressed in evidence. That said, having regard to our findings on the technical issues in contention and the proposed conditions of consent, we do not find those effects to be significant, at least in western science terms.

442 Turning then to the RCEP and in particular Objective 16 and the associated guidelines set through Policy 16.1 in particular, we find that all of those provisions would be met from a western science perspective, subject to appropriate conditions requiring mitigation and progressive improvement in WWTP performance being imposed.

443 We note Mr Smith's point that there would be a potential conflict (in his opinion) during periods of rivermouth closure, with Guideline 3 applying as to what he described as the significant conservation areas affected by the discharge.

444 However, we have not found there to be a significant impact during periods of rivermouth closure and the additional storage required under the conditions we set (at 30,000 m^3 as discussed below) should generally avoid the need for any discharge during periods of rivermouth closure in any event.

445 Finally, dealing with the NPSFM 2020, we note Mr Lawson's acknowledgment during questioning that full implementation of the "Package" including transition to a land-based irrigation regime would "give effect to" Te Mana o te Wai.

446 On the one hand, even in terms of the conditions of consent we have in mind (on the basis that consents are to be granted), there is still a very long way to go to that destination.

447 That said, and for the reasons addressed later in this decision on the issue of consent duration, we do not consider that given the relative infancy of NPSFM 2020 in terms of its implementation by the Regional Council, that this instrument presents a barrier to the grant of renewed consents for operation of the WWTP on the conditions we intend to impose.

Deliberations – Consent Conditions

448 Based on our findings as recorded above, the Panel is therefore minded to grant the resource consents sought and required for continued operation of the WWTP.

449 The real "conundrum" presented however is to reconcile the apparently irreconcilable tension or essential "contest" (as Mr Lawson put it) between (on the one hand), the adverse effects on the cultural values and community – many of whom (that we heard from) so strongly oppose a continued discharge to the River – and (on the other hand) the ability of that same community to afford a land-based alternative.

450 We have in our deliberations endeavoured to meet that challenge as best we can in two key ways:

(a) Through a range of amendments to the overall conditions framework to better integrate the Māori world view (tikanga and mātauranga) into the operation, review, monitoring, reporting and assessment framework of those conditions; and

(b) To "lock in" as Mr Lawson also put it, the aspiration towards land-based wastewater disposal, with clearer milestones and timeframes towards that ultimate destination.

451 As addressed further below, we have also very carefully considered the critical issue of consent duration.

452 Dealing first with the consent conditions framework, following the hearing and further to Panel directions, various iterations of the consent conditions were received, culminating in Version 25 submitted to us on 2 July 2021, following which the Panel also received:

(a) A joint witness statement (Dr Shane Kelly and Mr Phil Lake) regarding references to ammoniacal nitrogen in the proposed consent conditions;[281] and

(b) Advice from the Regional Council regarding proposed wording for determining median river flows for the purpose of those conditions,[282] with yet further advice regarding that matter following subsequent conferencing between the relevant experts (on 20 August 2021).

453 With all of this material to hand, we have attempted to reconcile a range of somewhat competing comments from the experts received in the table of conditions received, and determine issues of remaining disagreement between them.

454 Against that background, and for the purpose described above, we have made the following principal changes to (and decisions regarding) Version 25:

(a) Adopting the make-up of the "Body Representing Māori interests" preferred by NKII and the Regional Council experts, to provide for four (rather than three or five) representatives of the BRM to sit on the Māori Wastewater Working Party (MWWP), and to clarify the functions of the BRM (refer Definitions and Conditions 2 and 3).

(b) Expanding the role and functions of the MWWP (Condition 4) in turn to ensure that tikanga Māori is integrated into implementation of the consented activities, and to enable the MWWP to recommend changes to both operations and consent conditions in response to the outcomes of monitoring (which recommendations would trigger the Council's discretion to review the consent conditions – refer Condition 67).

[281] Received on 7 July 2021.
[282] Received on 23 July 2021.

(c) Similarly clarifying and strengthening the role of the MWWP in relation to preparation of the In-River Monitoring Plan (Condition 29), and empowering the MWWP to provide recommendations for any future renewal of consents (to address tikanga effects and better integrate tikanga Māori) following completion of the System Review Reports (prior to preparation of the Consent Renewal Report now required by Condition 65).

(d) Devising a standard procedure for certifying methodologies, plans and reports (Condition 8).

(e) Including a requirement in Conditions 9 and 10 that the discharge must cease by 4.00 am during the summer months, to better provide for the safety of surfers at the Wairoa Bar, and fishers who conduct activities in the estuary in the early morning.

(f) Setting a requirement to establish a storage pond of 30,000 m^3 in 2023/2024 (Condition 54), as would (we understand) provide sufficient storage to generally avoid the need to discharge effluent into the river during periods of rivermouth closure, and amending the trigger for commencement of Condition 10 (the revised discharge regime) accordingly.

(g) Refining the processes for preparation of the In-River Monitoring Plan (Condition 29) and Mauri Monitoring Protocol (Conditions 35 and 36) as to involvement of both the BRM and MWWP, and expanding the scope of the Mauri Monitoring Protocol to incorporate mapping (including a broad-scale habitat survey) and assessment of effects on mahinga kai (see Condition36(c)).

(h) Requiring the preparation of an Emerging Contaminants Strategy (Condition 33).

(i) To tidy up what we understand to be a small technical oversight, adding the specification that the standards for *E. coli*, Enterococci and TSS to be achieved by the new filtration/UV system apply when discharge flows are less than 5,000 m^3/day (Condition 47(a)(iii)).

(j) Clarifying the Environmental Management Plan requirements and related processes and standards for replacing the outfall structure (Condition 40) and relocating the outfall diffuser (Condition 41).

(k) Requiring performance measures relating to wastewater reticulation and pump station overflows (Condition 49).

(l) Setting a specific obligation on WDC to establish 50 hectares of land irrigation within five years of commencement of the consent (revised Condition 53).

(m) Revising the proposed conditions requiring a System Review Report (at five and then 10-yearly intervals) (Conditions 63 and 64) in light of our findings as to consent duration addressed below.

(n) Setting the ultimate step of this consent (in response to the second System Review Report) as being the completion of a Consent Renewal Report that would carry forward the various findings and recommendations of the MWWP and the Wastewater Stakeholder Group, including as to the manner in which a renewed consent would give effect to Te Mana o te Wai, and provide the basis for any application to renew the resource consents granted under this decision (Condition 65).

455 Specifically regarding the technical issues in contention, we note (with reference to conditions as proposed under Version 25, and amended as summarised above):

(a) Several conditions are intended to alleviate concerns with protection of health and ecological risks when the rivermouth is closed. Condition 54 requires the establishment of 30,000 m^3 of additional storage. The rivermouth shall be observed (Condition 11) and during times of closure/restriction discharge shall cease unless the ability to store excess wastewater has been or is likely to be exceeded (Condition 12). The Consent Holder is obliged to discuss actions that Council might take to mechanically open the rivermouth (Condition 13). Reporting (Condition 14) and monitoring (Condition 15) are required upon rivermouth closing

(b) Condition 40, agreed during expert conferencing and incorporating, amongst other things, Dr Mead's recommendations for an EMP, will minimise adverse direct and indirect effects during construction of the extended pipeline. In Version 25 of the conditions, requirements relating to construction of the extended pipeline were spread across several individual conditions that did not proceed in a logical way and that lacked clarity. Condition 40, which presents the totality of requirements in sequence (basic design requirements / 12 months prior to construction / to begin work / procedures during construction / upon completion) is intended as a remedy.

(c) Condition 41, which makes reference back to Condition 40 (replacement of outfall structure), requires that the installation procedures and precautions are also applied during diffuser relocation, which will give a reasonable level of certainty that relocation effects can be constrained to the installation "envelope of effects".

(d) The Māori Engagement Principles state that one (of several) of the purposes of the condition structure is to ensure that "mahinga kai is not compromised". Condition 36 requires that the Mauri Monitoring Protocol includes mapping the extent of mahinga kai, which will include undertaking a broad-scale habitat survey once every 3 years within the Whakamahi and Ngamotu Lagoons downstream of the outfall, assessing the effects on mahinga kai associated with the operation of the WWTP, and long-term monitoring of mahinga kai. With these considerations, we are of the view that any potential effects on any wider mahinga kai will be managed to the extent possible, consistent with granting the application.

(e) Condition 10(a)(v), agreed during expert conferencing, placed a restriction on early-morning discharges during summer, but this agreed condition came into effect only

after commencement of UV treatment and filtration, commissioning of additional storage and commissioning of land-based irrigation. We accept this restriction, but also require that it come into effect immediately, that is, before improvements (Condition 9(a)(v)).

(f) Condition 47, agreed during expert conferencing, sets standards for the performance of the UV and filtration system. The standards set a minimum UV dose and limits for *Escherichia coli* (*E. coli*) and Enterococci (both of which are indicative of / contributing to human health risk) at the discharge (after mixing) that correspond to contact recreation standards. We are satisfied that Condition 47 will ensure that disinfection will occur consistently at an effective level and that the pathogen limits will be protective of human health.

(g) Condition 48, agreed in expert conferencing, requires the Consent Holder to submit to the Council Manager a Network Management Plan (NMP) that, amongst other things, will provide calculations of predicted reductions in wastewater flows received at the wastewater treatment plant as a result of work planned over the next 5 years to reduce inflow and infiltration into the reticulated wastewater network. The NMP will also set out how flows to the treatment plant will be monitored and recorded, and how pump station overflows will be monitored and responded to. The NMP must be submitted within 12 months of the commencement of this consent. Condition 58, agreed in expert conferencing, requires the Consent Holder to report, in the Annual Monitoring Report, on monitoring required as part of the NMP. Condition 63, agreed during expert conferencing, requires commentary on and analysis of how works undertaken to reduce inflow and infiltration have reduced the frequency of overflow discharges. This is to be included in the System Review Report, which is to be prepared within five years and ten years of the commencement of this consent.

(h) Condition 49 requires that the Applicant adopt the performance measures for wastewater reticulation and pump station overflows published in WDC's LTP.

(i) Condition 60, agreed at expert conferencing, requires observations after major rainfall events of any large debris discharged from the WWTP.

456 To be clear, the Panel's intention is that this consent provide a framework for the staged withdrawal and cessation of the discharge of both treated and untreated effluent into the Wairoa River Estuary.

457 Mr Lawson confirmed in opening submissions that that was the Applicant's aspiration and ultimate objective. It was clearly that of many of the submitters we heard from.

458 In setting the requirement for 50 hectares of land irrigation to be established within five years, we have borne in mind the following submissions and evidence:

(a) Mr Lawson's submission that the community did not want WDC to simply obtain consent and "put it in the drawer" (i.e., carry on discharging until such time as the next renewal was required).[283]

(b) Mr Lawson's acknowledgement that the consent conditions framework "lacked punch" in terms of putting "stakes in the ground along the way" (as put to Mr Lawson by Commissioner Kirikiri) and Mr Lawson's response that the Council should be held to its objective of looking at the options, doing the trials and moving to a land-based discharge over time.

(c) Evidence from submitters including Mr Smith and Ms McIlroy seeking specific milestones and a plan for withdrawal ("dedicated conditions with timeframes to establish land-based irrigation and incentivise that transition", as expressed by Mr Smith).

(d) The practical realities of the situation as stressed so emphatically in counsel for the Applicant's reply, relative to WDC's broader Local Government Act responsibilities, including for prudent financial planning and management of its wastewater services.

(e) On the other hand, WDC's response to the requested further information (summarised above) including that the Council had been progressing engagement with farmers, identifying two farms that could potentially accommodate summer flows, and with initial cost estimates for these irrigation designs across 50 hectares at $2 million (leaving aside leasing or purchasing costs, with the Council more likely to pursue a leasing rather than purchase arrangement).[284]

459 We were encouraged by elements of the WDC's response to the requested further information in that regard, and as noted, have adopted the confirmed ability of WDC to commit to 30,000 m^3 of storage, said to be "ample" for ceasing river discharges during periods of rivermouth closures.[285]

460 We were also somewhat encouraged by WDC's closing submissions to the effect that the Applicant was confident that a concession for the new outfall would be granted. For reasons addressed earlier however, and given the "fundamental importance" of that new outfall, we have expanded the range of reasons enabling the Regional Council to commence a conditions review, to include the possibility that this outfall is not constructed within a set period of time (three years of commencement of the resource consents – refer new Condition 67(n)).

461 We have also expanded the review condition to include reference to other important steps and milestones around issues of concern to submitters, including as to the prohibition of mortuary waste (under the Trade Waste Bylaw – refer Conditions 50 to 52 and Condition 67(m), and

[283] Paragraph 15 of Mr Lawson's opening submissions.
[284] Paragraphs 35 to 37 of WDC's response to the Panel's requested further information as received on 30 July 2021.
[285] Paragraphs 41 and 50 of the response.

the establishment of 50 hectares of land-based irrigation and 30,000 m^3 of additional storage (Condition 67(o)).

462 Finally, in addition to above, and for the purpose of enhancing clarity, we have in places rearranged the conditions, the most significant being the conditions grouped in the section that is now titled "Discharge and River Monitoring, Standards and Effects". Various refinements to Version 25 have also been made to improve the clarity of wording.

Deliberations – Consent Duration

463 That leads to what has become the all-important issue of consent duration.

464 We heard a range of competing submissions and evidence on this topic, with the s 42A report recommending (with reference to s 29.2.3 of the RCEP) that a consent duration of 20 years be set.

465 Ms McIlroy and Mr Tiuka also (although we perceive reluctantly) suggested a 20-year consent duration, and certainly in preference to the 35-year duration sought under the application.

466 While not put to us in submissions, we find that a useful starting point for the assessment of this matter is to refer to the often cited decision of the Environment Court in *PVL Proteins Limited v Auckland Regional Council*[286] in which the Environment Court stated:

> [27] A decision on what is the appropriate term of the resource consent is to be made for the purpose of the Act, having regard to the actual and potential effects on the environment and relevant provisions of applicable instruments under the Act, the nature of the discharge, the sensitivity of the receiving environment to adverse effects, the applicant's reasons, and any possible alternative methods of discharge, including to another receiving environment.
>
> …
>
> [30] Uncertainty for an applicant of a short term, and an applicant's need (to protect investment) for as much security as is consistent with sustainable management indicate a longer term. Likewise, review of conditions may be more effective than a shorter term to ensure conditions do not become outdated, irrelevant or inadequate.
>
> [31] By comparison, expected future change in the vicinity has been regarded as indicating a shorter term. Another indication of a shorter term is uncertainty about the effectiveness of conditions to protect the environment (including where the applicant's past record of being unresponsive to effects on the environment and making relatively low capital expenditure on alleviation of environmental effects compared with expenditure on repairs and maintenance for profit).

467 In *Genesis Power Limited v Manawatu Whanganui Regional Council,*[287] the High Court adopted Environment Court authority to the effect that a consent conditions review process

[286] A061/2001.
[287] 12 ELRNZ 241.

can provide a more rigorous and effective mechanism for addressing adverse effects on the environment, than the "blunt instrument" of a shorter term consent duration.[288]

468 Beyond that, s 8.2.4 of the RRMP[289] and s 29.2.3 of the RCEP respectively, are on identical terms in providing that resource consents for discharges will be granted for a period of 20 to 35 years, unless **one or more** of the following exceptions apply:

- The activity has a duration of less than 20 years, in which case a consent will be granted for the duration of the activity.
- There is a need to align the consent expiry date with others, in order that the cumulative effects of activities can be considered through a common consent renewal process.
- The consent is for the allocation of gravel or another resource whose availability changes of time in an unpredictable manner.
- The type of activity has effects that are unknown or potentially significant for the locality in which it is undertaken.

469 While we are guided in our decision making by these provisions of the RRMP and RCEP, in our view those factors are not exhaustive. Instead, we consider that we must sheet our decision on this issue home to what is required to promote the sustainable management purpose of the RMA.

470 We have in mind in that regard the Environment Court's guidance as set out above from the *PVL Proteins Limited* decision, and the following submission made by Mr Lawson in opening:

> The applicant is seeking to make a commitment to its community to continually strive for a better outcome and for the conditions of consent to hold it to that commitment. This enables long term planning and enables the community to plan for the financial commitments that are required to match the community's aspirations. That is, it enables sustainable management.[290]

471 Stepping back and reflecting on all of the competing evidence and submissions received at the hearing, and having regard to the more robust conditions framework just explained above (which expands provision for review and sets specific milestones for a stepwise progression towards a land-based discharge) we are minded to grant the principal resource consents for a term of **15 years**.

472 Our specific reasons are as follows:

(a) Firstly, that as the AEE itself acknowledges, we are dealing with a culturally unacceptable (and offensive) effect.[291] That factor cannot be dismissed on the basis

[288] Paragraphs [88] and [89] of that decision.
[289] As addressed in the Planning Assessment submitted wiht the AEE.
[290] Paragraph 59 of counsel's opening submissions.
[291] Sections 2.3 and 8.8 of the AEE.

that in western science terms, the effects of the discharge are relatively minor, at least in a degraded river context.

(b) The point can be illustrated by posing the question – would the application be consentable if the adverse effects were as significant in western science terms, as they undoubtedly are in terms of mātauranga and tikanga Māori? If the answer to that is no, why should that be any different for impacts on the relationships and resources (places, water, taonga, wāhi tapu) which we must recognise and provide for under s6(e) of the RMA?

(c) Indeed, if we were to place ourselves in the position of consenting this as a fresh proposal, as some case law suggests we should for a consent renewal,[292] it is very unlikely that the consent would be approved with this level of impact, i.e., as raised by a river discharge of treated and untreated human effluent.

(d) In that regard, in terms of the four factors set out above from s 29.2.3 of the RCEP, we are dealing with a known and significant effect for the locality, indicating that a shorter term than 20 years should be imposed. This very effect engages provisions of the NZCPS and RPS which we have found are not met by the application.

(e) Thirdly, as recorded above, we see this consent as providing for the staged withdrawal of both treated and untreated wastewater from the Wairoa River estuary.

(f) In essence, we reject the Applicant's argument that a longer term is required to provide for the programme of consent conditions and system review and to allow for full implementation of the conditions framework.[293] Certainly in the form proposed (up to and including Version 25), we were of the view that the conditions framework would enable WDC to essentially, if not "put the consent in the drawer", in fact commit nothing by way of capital investment into land irrigation over a 35-year consent term, but instead review and perhaps report on why that could not be achieved within the financial resources of the affected community.

(g) While we have significantly strengthened that conditions framework to set specific milestones for a staged withdrawal, including the 50-hectare land irrigation requirement and 30,000 m^3 of storage, there is still a very long way to go.

(h) On the other hand, we are mindful of the Applicant's submissions that an inappropriately short-term could "derail" effective commitment to improvements or development of storage, with the Applicant needing to (in very short order) commit resources to a further consent renewal programme. [294]

(i) In essence however, we consider that a 15-year consent duration, subject to the conditions that we have set, appropriately strikes the balance between providing a

[292] *Ngāti Rangi Trust v Manawatu Wanganui Regional Council* [2016] NZHC 2948.
[293] Counsel for the Applicant's opening submissions at paragraph 41.
[294] Counsel for the Applicant's closing submissions at paragraphs 79-81.

degree of certainty to the Applicant (providing sufficient time to investigate options and secure resources to fund them), and the (we consider) more important need for certainty that the ultimate outcome will actually be achieved.

(j) Further, we are conscious that while the NPSFM 2020 as it stands is yet to be implemented (in its "infancy" as counsel for the Applicant put it in closing), over the duration of this consent, a new regional planning framework will need to be set, at the latest by December 2024, in order to give effect to Te Mana o te Wai. This may not only result in stricter water quality standards for the part of the River into which treated and untreated effluent is currently being discharged, but lead to broader scale river catchment improvements (for example in relation to the new attribute of sediment contained within the NPSFM[295]) improving background river water quality and riverbed conditions.

(k) In addition, and alongside that, there is the very significant reform of Three Waters currently in train, and while we accept Mr Lawson's submission that a degree of speculation is involved as to what might eventuate from those reforms,[296] equally we would not wish to set a duration commensurate with WDC's current understanding of its ability to financially commit to the extent of land-based irrigation required for a full transition, when that funding capacity may very significantly change again over the term of the consent.

473 In essence, we consider that a 15-year term strikes the right balance between the various competing factors important to the overall sustainable management purpose of the RMA, albeit weighted heavily (and rightly in our view) to the significant concerns which we not just heard in evidence – but felt – as to just how culturally offensive it is for this part of the Wairoa River to be used for the continued discharge of human effluent.

474 As to the authorisations sought for the continued discharge of untreated effluent from the pump station overflows, we set a five-year duration for those permits (AUTH-123624-01 and AUTH-124094-01).

475 While we accept the Applicant's submissions that it is better to authorise those discharges and set conditions for the management, monitoring and reporting of them (than to rely on the emergency provisions of the RMA as a form of defence), the reality is that at least for the Kopu Road overflow, Policy 23 of the NZCPS dictates that we must not allow that activity.

476 Given the very substantial progress being made by the Applicant in terms of its I&I programme, it may be that within five years, the frequency and extent of such discharges are truly confined to what could be described as emergency situations, (power outages, extreme weather events, chopper pump failure, seismic activity or tsunami, as explained by Mr Heath), and if that is not the case it would be open to WDC to seek a renewal of those authorisations.

[295] Table 16.
[296] Paragraph 49 of WDC's response to the requested further information.

477 Finally, in this context, we take the opportunity to observe that our overall impression is that WDC has genuinely strived to engage with its broader community, including tangata whenua and mana whenua over the course of preparation and presentation of this application to the point of hearing.

478 It is readily apparent that very significant resources have been committed to that process. A significant number of technical assessments and evaluations have been commissioned and received along with cultural impact assessments and reviews. While no process is perfect, and we received evidence as to criticism of the process, the reality is that (as we put it above) WDC was attempting to reconcile the irreconcilable. That we have reached a different decision as to duration and on conditions than preferred by WDC should not be taken as any criticism of the Council process or its position as adopted at the hearing. The circumstances and competing factors surrounding this application are, we appreciate, extremely difficult for all parties concerned.

DETERMINATION:

Application granted, subject to the conditions in Appendix 2.