

# Memorandum

19 June 2018

<b>To:</b>	<b>Mayor, Councillors, Local Board Chairs, Independent Māori Statutory Board Members</b>
<b>Subject:</b>	<b>Safeswim Beach Performance Summary – Summer 2017/18</b>
<b>From:</b>	Nick Vigar, Safeswim Programme Manager, Healthy Waters, Auckland Council

## Purpose

1. To inform all elected members of the performance of the region's beaches under the Safeswim programme over the summer of 2017/18 and describes the steps council and Watercare are undertaking to improve the swimmability of the poorest performing beaches.

## Summary

- *The performance of the 84 marine beaches in the Safeswim programme has been summarised for the summer of 2017/18. On average, across the region, beaches were compliant with swimming guidelines 77 per cent of the time.*
- *The worst performing beaches were those with pre-existing long-term warnings (including in particular a group of beaches in the Northern Manukau) and those affected by combined sewer overflows in the Western Isthmus. Outside of these, Takapuna Beach has the poorest water quality.*
- *The Central Interceptor Project (Watercare) and the Western Isthmus Water Quality Improvement Project (Healthy Waters / Watercare collaboration) are designed to address the issues in the Western Isthmus combined sewer areas, with part of the funding confirmed for this as part of the water quality targeted rate via the 10-year Budget.*
- *The council's Healthy Waters team is currently prioritising the Northern Manukau beaches, Takapuna Beach and Red Beach for investigations. This programme is being expanded to address other beaches with poor swimmability, using beach rankings and beach popularity as tools for prioritisation.*
- *Auckland Council has received a media request from Newshub to 'provide the water quality data from Auckland Council's Safeswim website between November 1 2017 and March 31 2018 and the causes of high risk or fair alerts'.*
- *Staff have prepared a response to this media request and would like to share this with elected members ahead of releasing it to the journalist.*

## Context/Background

2. From November 2017, Auckland Council and its programme partners (Watercare, Auckland Regional Public Health Service, and Surf Lifesaving Northern Region) launched a revised Safeswim programme for managing public health risk for beaches in the Auckland region.
3. Previous reports, memorandums and briefings have provided full details of the programme's revised approach.
4. Safeswim's modelling approach addresses some shortcoming in the previous weekly monitoring programme and has worked to more accurately reflect water quality risks at beaches. The models provide reliable indicators of current risk, whereas the old monitoring requires a minimum 48 hours for laboratory analysis and can only report on exceedances retrospectively. The revised Safeswim programme provides a significantly more accurate picture of public health

risk, where the old monitoring programme underreported poor water quality, and provided a false sense of security at most beaches.

## **2017/2018 Safeswim Results**

5. Following the first summer of operation under the new approach, the summary statistics for the compliance with swimming guidelines has been compiled. On average, across the region, beaches were compliant with swimming guidelines 77 per cent of the time.
6. Attachment A to this memo describes the statistics for the 84 marine beaches in the Safeswim programme, for the six-month summer 'swimming season' from 1 November 2017 to 30 April 2018. Attachment B provides explanatory notes around the data and the models.
7. The beach summary statistics for summer 2017/18 provide a broad indication of the relative public health risk at the 84 marine beaches in the programme. Before drawing conclusions from this data, it is important to understand the limitations of the data, as discussed in the explanatory notes.
8. The summary statistics identify some beaches where public health risk is unacceptably high. These beaches are briefly identified below, together with the nature of the programmes designed to address and remedy the issues.

### Northern Manukau Beaches

9. Generally, the poorest performing beaches in this statistical summary are a group in the Manukau Harbour that have long-term health warnings in place. There is a cluster of Northern Manukau beaches (from west to east: Foster's Bay, Armour Bay, Laingholm Beach, Titirangi Beach, Wood Bay, and Green Bay) that have historically poor water quality.
10. The council's Healthy Waters team has a programme, which is responsible for tracing and eliminating sources of cross-contamination of stormwater by human wastewater and this programme is prioritising these beaches. Investigations are currently most advanced at Laingholm Beach. However, because of additional funding from the water quality targeted rate in particular, the programme at the northern Manukau beaches will be increased in scale, to investigate several of these beaches concurrently.
11. Investigations at the northern Manukau beaches have been underway for a number of years, and the nature of the pollution sources is relatively well understood. Sampling of the streams and stormwater outfalls discharging to these beaches reveals that human faecal material is generally a significant contributor to the total load, but most beaches also have substantial faecal contamination from other sources such as birds, dogs and other animals (domesticated and wild). In some cases, this can cause exceedances of swimmability guidelines in their own right. Weymouth beach is an example of this. Data indicates that it continues to exceed guidelines, even though Watercare and Auckland Council have successfully removed all human wastewater inputs.
12. Auckland Council has been working in the northern Manukau beaches, such as Laingholm to trace and remedy any human wastewater inputs, in particular. With additional funding from the water quality targeted rate, this programme will be increased in scale, and work within the Manukau will be accelerated.

### Western Isthmus Beaches

13. The beaches of the western isthmus (Point Chevalier, Meola Reef, Cox's Bay, Herne Bay, Home Bay and St Mary's Bay) all have very poor swimmability. The water quality at these beaches will be significantly improved by Watercare's Central Interceptor project, and by the Western Isthmus Water Quality Improvement Project; a collaboration between Healthy Waters and Watercare, that is in part funded by the water quality targeted rate agreed as part of the 10-year budget.

### Other Beaches

14. Outside of those beaches with long-term warnings and those affected by combined sewer overflows, Takapuna is the poorest performing beach under the Safeswim model. A significant amount of time and money has been spent to ensure that the Safeswim model at Takapuna is performing accurately. The model predicts that as little as 6 mm of rainfall can cause the beach to enter the high risk (red) category. Due to the poor performance of this beach, the council's Healthy Waters team has commenced investigations at all outfalls to the beach during summer. These have revealed poor water quality at six of the 12 major outfalls along the length of the beach. Further investigations are currently happening and will continue throughout winter. The extent of affected network at Takapuna is potentially large and may take some time to trace the various issues.
15. Poor water quality source investigations by the council will be expanded to include other impacted beaches in the region in due course, using the beach water quality rankings and beach popularity as prioritisation tools. Further updates will be provided to elected members once more information is to hand.

### **Media Request**

16. While staff were working on collating and analysing this data for public release, a recent media LGOIMA request from Newshub has sped up this work. These statistics are due to be released to Newshub on Tuesday 19 June, in accordance with LGOIMA timeframes.
17. This release will be accompanied by an offer to the journalist of interview and filming opportunities with Safeswim programme manager Nick Vigar and Mayor Goff (depending on availability) at Takapuna Beach, St Mary's Bay and Castor Bay. We would like to work alongside Newshub to encourage a well-balanced story that shows how Auckland Council is addressing water quality issues.

### **Contacts**

18. If you have any queries on this topic please do not hesitate to contact Nick Vigar, Safeswim Programme Manager, on 021 645 891.
19. If you have any media queries please direct them to Kate Palmer, Senior Media Specialist, 021721465

### **Attachments**

- a) Safeswim marine beach rankings summer 2017/18
- b) Explanatory notes to accompany the 'Ranking of Safeswim marine sites based on guideline compliance from 1 November 2017 to 30 April 2018'

**Attachment A – Safeswim Marine Beach Rankings Summer 2018/2018**

Ranking of Safeswim marine sites based on guideline compliance from 1 November 2017 to 30 April 2018

Ranking	Beach	System			Guideline compliance		Combined Sewer Area?	Notes
		Green (%)	Amber (%)	Red (%)	Compliant	Non-compliant		
1st =	Piha Beach (north)	97.7	2.3	0.0	100%	0%		No model running. Permanently green due to evidence of consistently high water quality.
	Bethell's Beach	96.9	3.1	0.0	100%	0%		
	Anchor Bay	100.0	0.0	0.0	100%	0%		
	Cheltenham	100.0	0.0	0.0	100%	0%		
	Devonport	100.0	0.0	0.0	100%	0%		
	Goat Island	100.0	0.0	0.0	100%	0%		
	Kendall Bay	100.0	0.0	0.0	100%	0%		
	Omaha	100.0	0.0	0.0	100%	0%		
	Tawharanui	100.0	0.0	0.0	100%	0%		
10	Beach Haven	96.1	3.8	0.1	100%	0%		
11	Karekare Beach	96.4	3.1	0.5	100%	0%		
12	Okupu	92.3	6.8	0.9	99%	1%		
13	Piha Beach (south)	95.9	3.1	1.0	99%	1%		
14	Wenderholm	93.6	5.0	1.4	99%	1%		
15	Hatfields	91.8	6.3	1.9	98%	2%		
16	Omana Beach	82.9	13.3	3.8	96%	4%		
17	Waikowhai Bay	82.8	12.4	4.8	95%	5%		
18	Eastern Beach	84.6	10.2	5.1	95%	5%		
19	Maraetai	84.6	10.2	5.1	95%	5%		
20	Onetangi	84.6	10.2	5.1	95%	5%		
21	Palm Beach	84.6	10.2	5.1	95%	5%		
22	Big Bucklands	84.7	10.0	5.2	95%	5%		
23	Cornwallis	87.8	6.9	5.2	95%	5%		
24	Kawakawa	84.3	10.3	5.4	95%	5%		
25	Matakatia Bay	83.4	11.2	5.4	95%	5%		
26	Blockhouse Bay	82.1	12.3	5.6	94%	6%		
27	Orere Point	87.4	6.8	5.8	94%	6%		
28	Orewa	81.9	11.7	6.4	94%	6%		
29	Waiwera	81.9	11.7	6.4	94%	6%		
30	Mangere Bridge	85.6	8.0	6.4	94%	6%		
31	Castor Bay	89.7	3.5	6.8	93%	7%		
32	Duders	84.5	7.6	7.9	92%	8%		
33	Stammore Bay	83.9	8.1	8.0	92%	8%		
34	Oruarangi Creek	82.1	9.5	8.5	92%	8%		
35	Pt England	83.1	8.4	8.5	92%	8%		
36	Army Bay	76.4	15.0	8.6	91%	9%		
37	Big Manly	76.4	15.0	8.6	91%	9%		
38	Red Beach	76.4	15.0	8.6	91%	9%		
39	Sandspit (Franklin)	74.4	16.6	9.0	91%	9%		
40	Little Bucklands	80.1	10.8	9.1	91%	9%		
41	Point Chevalier	86.2	4.6	9.3	91%	9%	Combined	
42	Cockle Bay	78.8	11.8	9.4	91%	9%		
43	Little Oneroa	78.8	11.8	9.4	91%	9%		
44	Oneroa	78.8	11.8	9.4	91%	9%		
45	Sandy Bay	78.8	11.8	9.4	91%	9%		
46	Taumanu Central	76.5	14.1	9.4	91%	9%		
47	Howick	78.8	11.5	9.7	90%	10%		
48	Mellons Bay	65.1	25.2	9.7	90%	10%		
49	Little Manly	77.3	12.8	9.8	90%	10%		
50	Long Bay	82.1	7.9	9.9	90%	10%		
51	Mairangi Bay	80.4	8.6	11.0	89%	11%		
52	Mission Bay	85.7	3.2	11.1	89%	11%		
53	Waiake Bay	84.8	3.9	11.2	89%	11%		
54	Browns Bay	68.5	20.1	11.5	89%	11%		
55	Kohimarama	84.5	3.8	11.7	88%	12%		
56	Mulberry Grove	71.8	16.5	11.7	88%	12%		
57	Narrow Neck	77.9	9.4	12.7	87%	13%		
58	Milford	72.0	14.8	13.2	87%	13%		
59	Christmas Beach	81.3	2.7	16.1	84%	16%		
60	Taumanu West	54.1	28.9	16.9	83%	17%		
61	Okahu Bay	78.7	3.1	18.2	82%	18%		
62	St Heliers	77.7	2.6	19.7	80%	20%		
63	Milford South	72.9	6.8	20.3	80%	20%		
64	French Bay	63.5	12.3	24.2	76%	24%		
65	Huia	65.7	9.3	25.0	75%	25%		
66	Te Atatu	60.7	14.2	25.1	75%	25%		
67	Judges Bay	63.5	11.3	25.2	75%	25%	Combined	
68	Pah Beach	70.7	3.6	25.7	74%	26%		
69	Takapuna	57.7	12.4	29.9	70%	30%		
70	Herne Bay	66.8	2.7	30.5	70%	30%	Combined	
71	Home Bay	65.3	3.5	31.3	69%	31%	Combined	
72	St Marys Bay	58.8	2.5	38.7	61%	39%	Combined	
73 =	Armour Bay	0.0	0.0	100.0	0%	100%		No model running. Long term warning in place (permanently red) due to evidence of consistently poor water quality.
	Clarks	0.0	0.0	100.0	0%	100%		
	Coxs Bay	0.0	0.0	100.0	0%	100%	Combined	
	Fosters Bay	0.0	0.0	100.0	0%	100%		
	Green Bay	0.0	0.0	100.0	0%	100%		
	Laingholm	0.0	0.0	100.0	0%	100%		
	Meola Reef	0.0	0.0	100.0	0%	100%	Combined	
	Taumanu East	0.0	0.0	100.0	0%	100%		
	Titirangi Beach	0.0	0.0	100.0	0%	100%		
	Wairau Outlet	0.0	0.0	100.0	0%	100%		
Weymouth	0.0	0.0	100.0	0%	100%			
	Wood Bay	0.0	0.0	100.0	0%	100%		

## Attachment B

### **EXPLANATORY NOTES to accompany the 'Ranking of Safeswim marine sites based on guideline compliance from 1 November 2017 to 30 April 2018'**

Prepared by | Nick Vigar, Safeswim Programme Manager, Healthy Waters, Auckland Council

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This is a summary of the Safeswim system outputs for the 84 marine beaches in the programme, for the six months from 1 November 2017 to 30 April 2018. It does not include data for the eight freshwater sites on the Safeswim website.

The green, amber and red columns show the percentage of time that each beach spent in the low risk, fair, and high risk categories, respectively. Both the green and amber categories are compliant with the New Zealand guideline for acceptable swimming. Beaches in the list are ranked according to the percentage of time that they were compliant over the six month period.

#### **100 per cent compliance rankings**

- The only two beaches in the region that were predicted to be 100 per cent compliant, based on calibrated models, were North Piha Beach and Bethell's Beach.
- The other beaches, shaded in green, which appear to be 100 per cent compliant, do not currently have a Safeswim predictive model running. These are sites that have historically been regarded as having consistently high water quality, under the previous Safeswim weekly testing methodology; and were subsequently dropped from the regular testing programme; meaning that insufficient data exists to build a model. Data is now being collected for the purpose of creating predictive models at these sites.
- It is likely that some or all of these (green-shaded) beaches will perform at less than 100 per cent compliance once calibrated models are in place.

#### **Long-term 'no swim' warnings**

The beaches shaded in red are sites with long-term no-swim warnings in place, in response to their D-grading in the Microbiological Assessment Category (MAC) of the 2003 MFE/MOH Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas.

Most of these (red-shaded) 'MAC-D' beaches have had long-term no-swim warnings in place for a number of years as a means of managing their elevated public health risk. The Safeswim system presently considers these (red-shaded) sites, with long-term warnings in place, to be non-compliant with guidelines 100 per cent of the time.

Several beaches in the marine beaches ranking list (e.g. St Marys Bay and Judges Bay) are, in fact, also graded MAC-D, but run successful calibrated models, as an alternative to having a long-term no swim warning in place. These beaches are typically in the poorer performing end of the modelled sites, but the Safeswim modelling approach demonstrates that these MAC-D sites may be compliant with swimming guidelines up to 75 per cent of the time (e.g. Judges Bay).

Where possible, the Safeswim programme will look to create calibrated models for all MAC-D beaches, and to remove the long-term warnings. This is likely to improve the Safeswim compliance score for many of these (red-shaded) sites in the future.

### **Notes on methodology**

- All Safeswim models are required to meet international benchmarks for acceptable levels of predictive accuracy. Validation sampling indicates that the accuracy of the top-performing Safeswim models exceeds 80 per cent, however not all models perform this well. The Safeswim programme anticipates an approximately two year timeframe to improve the predictive accuracy of all sites to an ideal level. As the predictive models improve, the performance of some sites is likely to change.
- Statistics in the ranking table may be subject to rounding errors.

### **THE WORST BEACHES**

The beaches with the poorest water quality in the Safeswim beach rankings are dominated by two broad groupings of beaches; those affected by combined sewer discharges, and a group of beaches on the Manukau Harbour.

#### **Beaches affected by combined sewer discharges**

Combined sewer discharges currently have significant impacts upon the beaches of the western isthmus and CBD (from west to east: Pt Chevalier, Meola Reef, Cox's Bay, Herne Bay, Home Bay, St Marys Bay and Judges Bay). Over the next decade the swimmability of all these beaches will improve markedly, as a consequence of Watercare's Central Interceptor project and Auckland Council's programme for the western isthmus (now confirmed, under the water quality targeted rate).

#### **Manukau Harbour Beaches**

The beaches of the Manukau Harbour are affected by a range of issues that impact on swimmability. Many of the beaches are known to have significant bacterial loads from resident and migratory bird populations. In some cases this can cause exceedances of swimmability guidelines in their own right. Weymouth beach is an example of this. Data indicates that it continues to exceed guidelines, even though Watercare and Auckland Council have successfully removed all human wastewater inputs.

Auckland Council has been working in the northern Manukau beaches, such as Laingholm to trace and remedy any human wastewater inputs, in particular. With additional funding from the water quality targeted rate, this programme will be increased in scale, and work within the Manukau will be accelerated.

The beaches of the Onehunga foreshore (Taumanu West, Taumanu Central and Taumanu East) will also improve as a consequence of Watercare's Central Interceptor project.

#### **Takapuna Beach**

Some beaches have performed more poorly than expected. In particular, Takapuna Beach, one of the city's most iconic swimming beaches, was non-compliant with swimming guidelines for 30 per cent of the summer period. Takapuna has been prioritised for investigations under the Safe Networks programme. Work is currently underway to trace and detect the sources of poor water quality that have been detected at six different outfalls along the length of the beach.