

# ANNUAL REPORT



**Comprehensive Stormwater Discharge Consents  
2020-2021**

## Table of Contents

Table of Contents .....	2
Introduction .....	3
a) Summary of Procedures, Initiatives, and Implementation Methods .....	3
Operational Procedures .....	3
Management Initiatives / Implementation Methods 2020-2021 .....	3
Management Initiatives / Implementation Methods 2021-2022 .....	6
b) Stormwater Infrastructure Works .....	7
Major Works .....	7
Developing Catchments .....	7
Proposed Infrastructure Works .....	7
c) Monitoring Summary .....	8
Visual Monitoring Results .....	8
Sediment Sampling Results .....	8
Ecological Assessment .....	8
d) Non-Routine Contaminant Discharge Incidents .....	9
e) Summary of Level of Compliance with Conditions of Consent .....	9
f) Summary of Formal Complaints .....	9
g) Updated Catchment Drawings .....	9
h) Summary of Actions / Management Measures to be Implemented .....	10
Appendix 1: Summary of Level of Compliance .....	12
Appendix 2: Stormwater Complaints Summary .....	17
Appendix 3: Changes to Stormwater Network .....	26
15 Wharekaho Road, Wharekaho (Stage 2A2) - Whitianga Urban Area (Consent 105665) ..	26
Appendix 4: New Stormwater Activities in Urbanised Catchments .....	27
15 Wharekaho Road, Wharekaho (Stage 2A2) - Whitianga Urban Area (Consent 105665) ..	27
Appendix 5: Visual Monitoring Results .....	29

## Introduction

Thames-Coromandel District Council (TCDC) holds eight Comprehensive Stormwater Discharge Consents (CSDC's):

- Thames Urban Area (Consent 122521)
- Pauanui Urban Area (Consent 105661)
- Coromandel Urban Area (Consent 105663)
- Tairua Urban Area (Consent 105664)
- Whitianga Urban Area (Consent 105665)
- Onemana Urban Area (Consent 105666)
- Whangamata Urban Area (Consent 105667)
- Thames Coast Urban Area (Consent 105668)

Condition 6 of each individual consent requires an Annual Report for the year ending 30 June by 30 September each year. Along with individual consent conditions, Schedule A (SA) includes conditions that apply to all comprehensive consents.

The numbering convention of this report aligns with the requirements of the Consent condition. Please note that some commentary in this annual report extends beyond 30 June 2021 as the Final Site Compliance report for 2019-2020 requires (page 14).

### a) Summary of Procedures, Initiatives, and Implementation Methods

#### Operational Procedures

Operational procedures are within each of the Operations and Maintenance Contracts. There were no updates to the three Operations and Maintenance Contracts that include stormwater responsibilities during the 2020-2021 financial year. The three contracts are:

- C15/05 Water Services (Veolia)
- C18/24 Roding (Ventia)
- C12/21 Parks, Gardens, Cemeteries, and Community Facilities (Smart Environmental)

#### Management Initiatives / Implementation Methods 2020-2021

Management Initiatives were committed to for the 2020-2021 period (per section h) of the 2018-2020 Annual Report). TCDC was waiting on feedback on the 2018-2020 Annual Report (submitted 29 September 2020) prior to commencing work on management initiatives to confirm WRC's priorities. The draft CSDC Site Compliance Report was received on 20 April 2021 with the final report received on 28 June 2021. Updates on Management Initiatives are as follows:

##### 1. Commence Rewrite of Catchment Management Plans (Condition SA25)

In the meeting between Len Whittaker (TCDC), Karen Gamble (TCDC), and Rob Hart (WRC Representative) on 6 May 2021 to discuss the CSDC draft Site Compliance Report, Rob advised the rewrite of Catchment Management Plans was low priority. This has therefore been put on hold until 2022-2023.

2. Update SOPs for managing non-routine contaminant discharge events (including potential for entering into MOU with WRC) (Condition SA21)

The final CSDC Site Compliance Report, received on 28 June 2021, allowed until 31 July 2021 for the updated SOP to be submitted. A draft was submitted on 31 July and has now been included within the updated Stormwater Network Management Plan due 30 November 2021.

3. Stormwater Education brochure for businesses to be created (including at-source stormwater management measures). (Condition SA23b)

This brochure has been created and is in the process of being finalised to distribute to businesses within the TCDC district. Brochures will also be provided to Veolia for their operators to distribute when they feel it is necessary (e.g. when responding to a stormwater pollution complaint).

4. Internal education session to be run for members of asset management teams, building team, associated services, and their contractors on the requirements of the CSDCs. (Condition SA5)

Education sessions have been run for the following TCDC internal teams:

- Community Services
- Planning
- Building

Due to COVID restrictions, we have not yet presented this education session to contractors and subcontractors, nor developers, engineers, and surveyors. It was intended to run a two hour workshop in November 2021 (now delayed until January 2022).

5. Create procedures to clarify roles regarding inspections and audits (Condition SA23b)

Condition 23 b) of Schedule A of the CSDC's states "To the extent that the Consent Holder is authorised to do so, proposed site inspections and stormwater contamination audits...". In the absence of a Stormwater and / or Trade Waste Bylaw, TCDC is currently not authorised to carry out site inspections and audits. This authorisation will need to be included in bylaws as they are developed.

6. Guidance to be sought from Council on the enactment of a districtwide Stormwater Bylaw (Conditions SA22 / SA23f / SA30n)

A procedure and proposed timeline for the enactment of a districtwide Stormwater Bylaw was submitted to Waikato Regional Council on 31 July 2021 (see below).

	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22
Obtain nearby local authorities SW bylaw	■						
Draft new SW bylaw	■	■					
Consult with local engineers, surveyors and developers.			■				
Amend draft SW bylaw				■			
Consult with TCDC ratepayers					■	■	
TCDC adopt SW bylaw							■

7. Guidance to be sought from Council on the enactment of a districtwide Trade Waste Bylaw (Conditions SA23b / SA30g)

A procedure and proposed timeline for the enactment of a districtwide Trade Waste Bylaw was submitted to Waikato Regional Council on 31 July 2021 (see below).

	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23
Obtain nearby local authorities Trade Waste bylaw	■						
Draft new TW bylaw	■	■					
Consult with local engineers, surveyors and developers.			■				
Amend draft TW bylaw				■			
Consult with TCDC ratepayers					■	■	
TCDC adopt TW bylaw							■

8. Formalise connection application procedure (Condition SA22)

In the meeting on 6 May 2021 (see 1. above), Rob Hart advised to focus on high risk sites and extended the deadline for this draft to be submitted to 31 July 2021. As advised in the submission on 31 July the process has been received and needs to be process mapped.

In addition, to demonstrate physical progress being made, TCDC undertook in the meeting on 6 May 2021 (see 1. above), to procure and install signage on stormwater catchpits to aid in raising “the general public’s awareness of stormwater quality issues and the ways in which individuals can avoid as far as practicable and otherwise minimise the contamination of stormwater” (Schedule A, Condition 23a). Signage in the shape of a Snapper was selected as this is easily recognisable, the most common fish in the TCDC District, and is designed to elicit emotion when viewed by the general public. Four thousand Snapper signs have been procured, two thousand have been installed and the installation of the remainder will be completed in the 2021-2022 financial year.



### Management Initiatives / Implementation Methods 2021-2022

The below table are initiatives committed to in 2021-22 as stated in the 2018-2020 Annual Report. The Stormwater Quality Improvement Programme is being submitted as part of the updated Stormwater Network Management Plan due 30 November 2021. Any update to these actions is shown within the action in italics.

Action	Condition(s)	Priority
Stormwater Education brochure to be created to be sent out with rates notices in August 2021 (next rates notice that goes to <u>all</u> ratepayers)	SA5	1
Stormwater management device operations and maintenance documentation to be updated and incorporated into appropriate Operations and Maintenance Contract(s)	SA9 / SA18 / SA29	2
Review Stormwater section of Code of Practice for Subdivision and Development and commence consultation process.	SA22 / SA28 / SA30n / SA30o	3
Reference WRCs Waikato Stormwater Management Guideline (TR2020/07) in updated Code of Practice (in conjunction with the above Code of Practice review)	SA30n	4
Finalise Stream Channel Maintenance Guidelines following feedback from WRC	SA30j	5

Action	Condition(s)	Priority
Complete re-write Catchment Management Plans <i>Per a) 1. above, this will be revisited in 2022-2023</i>	SA25	6
Write protocol for managing illicit wastewater connections when discovered	SA19	7

In addition, further to the 2019-2020 Site Compliance Report (see section h)), the following will be carried out:

Action	Condition(s)	Priority
SA29	Further develop and maintain register of stormwater management devices	O&M procedures to be reviewed / expanded by an engineer

## b) Stormwater Infrastructure Works

### Major Works

- Port Road Stormwater Improvements – Replacement of the existing pipes and the installation of a stormwater treatment device to collect gross pollutants down to 5 mm. Design and MSQA for this project has been completed by WSP, however construction has been delayed due to COVID restrictions.

### Developing Catchments

The current Catchment Management Plans are silent in terms of Developing Catchments. The updated Stormwater Network Management Plan is in the process of being re-written and is due 30 November 2021.

### Proposed Infrastructure Works

In addition to the Port Road Stormwater Improvements, the following Stormwater capital works have been budgeted in the Long Term Plan (ten years ending 30 June 2031):

- Albert Street, Thames: Stormwater improvements
- Pollen Street, Thames: Redevelopment and infrastructure upgrade
- Totara Valley Road, Thames: Stormwater extension
- Holland Stream, Pauanui: improvements
- Whangamata: improvements

### c) Monitoring Summary

The updated stormwater monitoring programme, prepared by 4Sight, has now been integrated into the Stormwater Network Management Plan and has been submitted to Waikato Regional Council in draft for review. The previous stormwater monitoring programme, prepared by KTB Planning, was still in effect for the 2020-2021 period. The programme identified 15 sites across the Peninsula to form the stormwater monitoring programme. Thirteen of the sites have been selected to ensure monitoring is focussed on high risk catchments and / or catchments that contain high risk activities. The other two sites have been selected at or near discharges from medium to low density residential areas to use as control sites.

The framework developed for the stormwater monitoring programme is based on carrying out the following assessments of the receiving environment at stormwater outlets:

- Visual inspection
- Sediment quality
- Ecosystem health.

The framework requires the visual inspection to be carried out during January and May every year, with the sediment quality and ecosystem health assessment scheduled four-yearly (beginning in 2014) during January / February.

The following is a summary of the latest assessments.

#### Visual Monitoring Results

The twice-yearly visual inspection was carried out during February and June of 2021.

The visual monitoring report is included as Appendix 5.

#### Sediment Sampling Results

The four-yearly sediment sampling was carried out during February 2018. Samples were collected by Veolia staff and sent to R J Hill Laboratories Limited, Hamilton for analysis. Analysis of the 2018 results, as compared to the 2014 results was provided in the 2018-2020 Annual Report.

#### Ecological Assessment

The four-yearly ecological assessment was carried out during January 2018. The site surveys and assessment were conducted by Kessels Ecology Limited. Analysis of the 2018 assessment, as compared to the 2014 assessment was provided in the 2018-2020 Annual Report.



#### **d) Non-Routine Contaminant Discharge Incidents**

During the 2020-2021 year there were two reports of pollution:

- On 7 September 2020 a member of the public reported some discharge from the stormwater drain at 101 South Highway, Whitianga. Pathway (TCDC's Complaints management system) records "he has advised that the water is going out into the estuary. He believes that someone is discharging something into the stormwater drain. He has spoken to the regional council who told him to contact TCDC to arrange the duty officer to take a sample of this water for testing". Upon attendance, the Veolia operator noted "milky water in culvert:". The operator was unable to locate the source by lifting manholes in the surrounding area. A sample was taken and provided to Waikato Regional Council for testing. No feedback has been received from WRC and the Veolia operator assumed it to be paint wash off.
- On 18 September 2020, Waikato Regional Council phoned TCDC and was put through to Veolia to report a contractor washing down a concrete driveway into the stormwater at 103 Te Pamahue Drive, Whangamata. The WRC representative asked Veolia to collect photos, samples, and details of the contractor involved. Upon arrival on site, the contractor had completed the wash down which prevented samples being taken. The contractor was provided education on site by the Veolia operator and photos and contractor details were passed back to WRC as requested.

#### **e) Summary of Level of Compliance with Conditions of Consent**

The summary of the level of compliance with the conditions of this consent for the 2020-2021 period can be found in Appendix 1.

#### **f) Summary of Formal Complaints**

The summary of formal complaints for 2020-2021 is found in Appendix 2.

#### **g) Updated Catchment Drawings**

Appendix 3 and Appendix 4 contain the changes to the stormwater network in 2020-2021 for certification by Waikato Regional Council in accordance with Schedule A, Condition 4. Changes to the stormwater network have not resulted in the requirement for updated catchment drawings.

## h) Summary of Actions / Management Measures to be Implemented

The Site Compliance Reporting relating to 2019-2020 was not received until 28 June 2021. the update column below relates to actions carried out in the 2021-2022 year to date.

Condition	Action	Update
SA4	Notwithstanding, the development of Catchment Management Plans as per Schedule A / Condition 25 is highly encouraged and the proposed implementation action to complete CMPs is supported. However, CMPs must be supported by robust technical investigations and assessments, and early consultation with WRC regarding technical scopes is considered necessary.	See Section a) Management Initiatives / Implementation Methods 2020-2021 point 1 above
SA22	Establish SOPs to evaluate and determine stormwater management devices for all new and replacement connections to stormwater networks	Draft SOPs submitted to WRC for review / approval on 31 July 2021.
SA23	Progress development of the SQIP and implement the various management initiatives accordingly.	Draft SMP (including SQIP) submitted to WRC for review / approval on 8 October 2021.
SA28	Develop and / or revise policies, codes of practice and other relevant measures that effectively promote LIUD and stormwater management devices in reticulated catchments	Options analysis to help inform this exercise, inclusive of key tasks and timeframes was submitted to WRC on 31 July 2021.
SA29	Further develop and maintain register of stormwater management devices	As advised in the meeting with Rob Hart on 6 May the register of devices was complete as submitted in the 2018-2020 Annual Report. O&M procedures to be reviewed / expanded by an engineer.
SA30	Complete draft Stormwater Management Plan and resubmit for review / approval	Draft SMP (now called Stormwater Network Management Plan) resubmitted to WRC for review / approval on 8 October 2021
SA31	Effectively implement the SMP in accordance with consent	Water Services Manager responsible for Stormwater as a whole. Awaiting review / approval of the SMP by WRC
4	Submit revised and updated draft monitoring programme for review / approval	Draft monitoring programme submitted to WRC in conjunction with Stormwater Network Management Plan for review / approval on 8 October 2021

Condition	Action	Update
6	The proposed stormwater management initiatives and implementation actions presented in the Annual Report must be actioned by TCDC in the 2020/21 reporting year	Refer to section a) Management Initiatives 2020-2021 above
N/A	<p>Pauanui Nine Development</p> <p>Action 1: Install baffles (or similar device) in all connected catchpits by 31 July 2021.</p> <p>Action 2: Prepare a Design Report to inform the installation of a centrally located stormwater treatment device by 31 July 2021.</p> <p>Action 3: Advise proposed timeframe for installation of centrally located stormwater treatment device</p>	<ol style="list-style-type: none"> <li>1. Baffles designed for installation in all connected catchpits. Delayed due to COVID lockdowns.</li> <li>2. Desktop assessment completed by Opus</li> <li>3. Way forward committed by Kevin Brown in email to Brian Richmond dated 30 November</li> </ol>

## Appendix 1: Summary of Level of Compliance

Each of the individual Comprehensive Stormwater Discharge Consents has Conditions as follows:

- 1) Schedule A
- 2) Stormwater diversion and discharge activities
- 3) Scope of the stormwater diversion and discharge activities authorised
- 4) Monitoring Programme (a – i)
- 5) Monitoring Results
- 6) Annual Report (a – i)

The first three are covered by other conditions within Schedule A (SA) and are therefore not reported on individually below. The Compliance columns incorporate a traffic light system as described below. Commentary is provided where required for clarification. Within Schedule A, the following conditions are statements and are covered by other condition(s), or are administrative and therefore not reported on individually below:

- 1) Design, structural integrity and maintenance of the stormwater network
- 2) Changes to the stormwater network
- 3) Best Practicable Option
- 20) Routine contaminant discharges into the stormwater network
- 32) Consent Holder's Representative
- 33) Review Clause
- 34) Administrative charges

Compliance for the following Conditions within Schedule A are “determined through the establishment and implementation of best practicable stormwater management measures that are adopted by, and implemented through, the Stormwater Management Plan required by Condition 30 of this consent” (Advice Note) and are therefore not reported on individually below:

- 6) Adverse stormwater quantity effects
- 11) Floatable contaminants
- 12) Suspended solids
- 13) Hazardous substances
- 14) Micro-organisms
- 15) Adverse effects on aquatic ecosystems

As historically, the difficulties in achieving compliance have once again been due to constraints on resources, staff turnover, and budget, as well as ongoing complications from COVID-19

#	Condition	Compliance 2019/2020	Commentary	Compliance 2020/2021	Commentary
4	Monitoring Programme		Due to be updated 2016. Update yet to occur		Monitoring Programme submitted for review / approval on 30/9/21 as required by the 2019/2020 Site Compliance Report
5	Monitoring Results		Monitoring results submitted as Appendix 6-8 in 2018-2020 Annual Report		Only Visual Monitoring Results due this period. See Appendix 5.
6	Annual Report		Annual Report submitted on time		Annual Report submitted on revised agreed timeframe
SA4	Technical Certification		Submitted retrospectively in 2018-2020 Annual Report and approved.		See Appendix 3 & 4
SA5	Asset Management Activities		See section h) of 2018-2020 Annual Report		Education sessions for relevant departments and their subcontractors commenced. See Section a) Management Initiatives 2020-2021, point 4
SA7	Addressing Adverse Stormwater Quantity Effects		No adverse quantity effects have been reported.		See 2019/2020 Commentary
SA8	Fish Passage		Reviewed as part of Ecological Monitoring required by Monitoring Programme.		See 2019/2020 Commentary
SA9	Stormwater Management Devices (Control Volume and / or peak rates of discharge)		Not all stormwater management devices have maintenance schedules within the respective contracts		See Section h)

#	Condition	Compliance 2019/2020	Commentary	Compliance 2020/2021	Commentary
SA10	Stream Channel Works		See Section j) Stormwater Management Plan 2020		See Section j) Stormwater Management Plan 2020
SA16	Street and Stormwater catchpit cleaning operations		See Section f) Stormwater Management Plan 2020		See Section f) Stormwater Management Plan 2020
SA17	Stormwater Catchpits		TCDC's view is existing catchpits are capable of retaining the majority of gross pollutants. Floating contaminants are considered during capital works projects		See 2019/2020 commentary
SA18	Stormwater Management Devices (treat contaminated stormwater)		See Section h)		See 2019/2020 commentary
SA19	Illicit wastewater connections		No specific investigations carried out, however no reports of potential issues during this period. Protocol to be written see Section h)		See 2019/2020 commentary
SA21	Non-routine contaminant discharges to / from the stormwater network		See Stormwater Complaints 2018/2019 Appendix 2		See Stormwater Complaints Appendix 2
SA22	New or replacement connections to the stormwater network		See Section hiii) Stormwater Management Plan 2020. No stormwater bylaw see Section h)		See submission to WRC 31/7/21

#	Condition	Compliance 2019/2020	Commentary	Compliance 2020/2021	Commentary
SA23	Stormwater Quality Improvement Programme		See Section m) Stormwater Management Plan 2020		Included with Draft Stormwater Network Management Plan 2021
SA24	Complaints Register		Complaints Register collated live in Pathway. See summary in Appendix 3 of 2018-2020 Annual Report		Complaints Register collated live in Pathway. See summary Appendix 2
SA25	Catchment Management Plans		There are approved catchment management plans, however they don't contain all requirements		See 2019/2020 Commentary. Catchment Management Plans are in the process of being re-written, however this is lower priority as advised by Rob Hart.
SA26	Implementation of Catchment Management Plans		The only requirement within the Catchment Management Plans that are able to be implemented is monitoring (see Condition 5)		See 2019/2020 Commentary
SA27	Waikato Regional Council guidelines for sustainable subdivision development		The concepts within the document are promoted however the document itself is not referred to (and is now out of date).		See 2019/2020 Commentary
SA28	Low Impact Urban Design measures and stormwater management devices		Council have promoted hydraulic neutrality as a LIUD measure.		See 2019/2020 Commentary
SA29	Register of stormwater management devices		See Appendix E Stormwater Management Plan 2020		Register complete. See draft Stormwater Network Management Plan and Section a) Managements Initiatives

#	Condition	Compliance 2019/2020	Commentary	Compliance 2020/2021	Commentary
SA30	Stormwater Management Plan		Stormwater Management Plan was due to be updated in 2017		Draft Stormwater Management Plan 2020 was submitted to WRC for review / approval on 30 September 2020. Final feedback not received by 30 June 2021.
SA31	Implementation of the Stormwater Management Plan		Stormwater Management Plan partly implemented. Draft SMP submitted for review / approval 30 September 2020.		Stormwater Network Management Plan further developed and submitted for review / approval on 8 October 2021



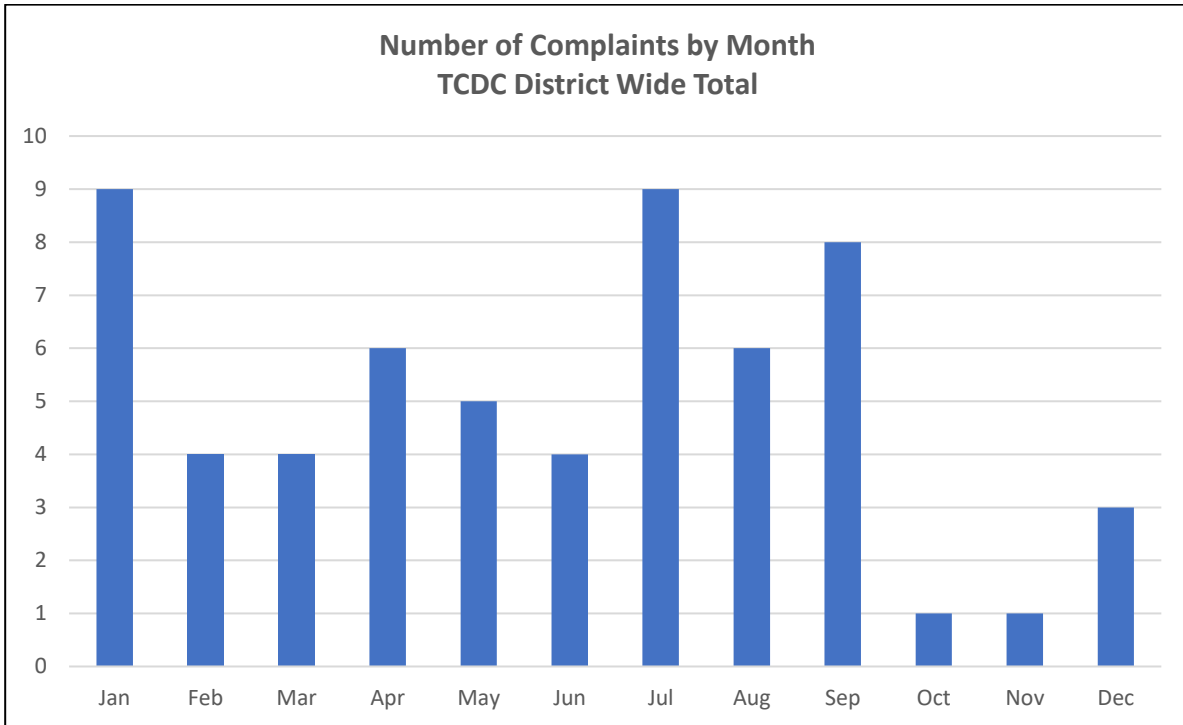
## Appendix 2: Stormwater Complaints Summary

Section 24 of Schedule A (General Conditions of Comprehensive Stormwater Discharge Consents) requires all formal complaints received about stormwater diversion and discharge activities authorised by these consents to be held in a register. Thames-Coromandel District Council's system for recording all complaints, notifications, and requests is the Request for Service (RFS) module in Pathway. The report below includes all requests for service that come to Council regarding Stormwater even though not all are formal complaints.

During the 2020-2021 year there were a total of 60 requests for service relating to stormwater within the Thames-Coromandel District Council urban areas serviced by Comprehensive Stormwater Discharge Consents. This is a decrease of 28 compared to the 2019-2020 year.

Requests are categorised as follows:

Category	Number of Complaints
Clear Stormwater Asset Request	23
Stormwater Asset Leak	0
Pollution Report	2
Ponding / Flooding Private Land	9
Ponding / Flooding Public Land	5
Stormwater Asset Issue (e.g. manhole cover displaced, request to cover open drain)	20
Third Party Damage	1

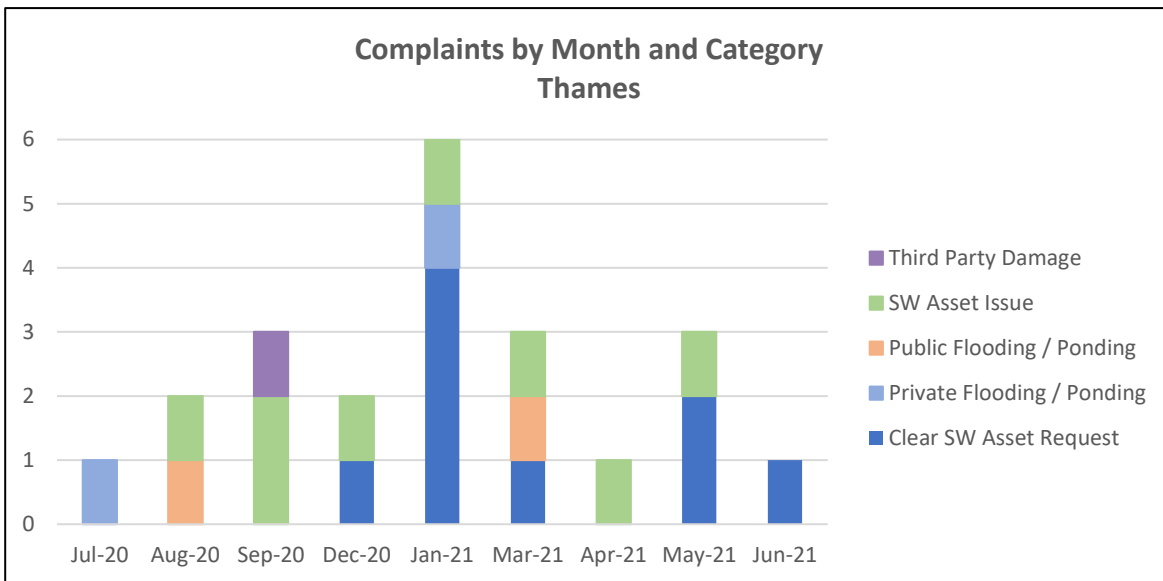


### Comprehensive Stormwater Discharge Consent 122521 – Thames Urban Area

During the 2020-2021 year there were a total of 22 requests for service relating to stormwater within the Thames urban area, a reduction of four from 2019-2020.

Requests are categorised as follows:

- Clear Stormwater Asset Request 9
- Ponding / Flooding Private Land 2
- Ponding / Flooding Public Land 2
- Stormwater Asset Issue 8
- Third Party Damage 1

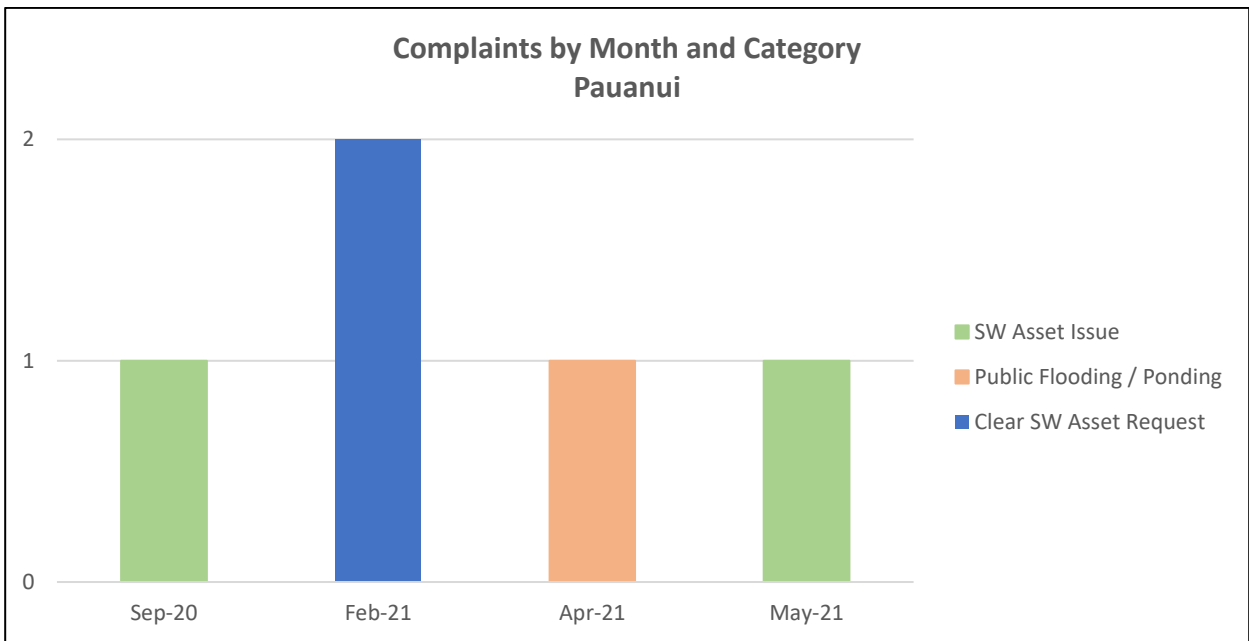


### Comprehensive Stormwater Discharge Consent 105661 – Pauanui

During the 2020-2021 year there were a total of five requests for service relating to stormwater within the Pauanui urban area. This is an increase of two from the 2019-2020 year.

Requests are categorised as follows:

- Clear Stormwater Asset Request                    2
- Ponding / Flooding Public Land                    1
- Stormwater Asset Issue                                2

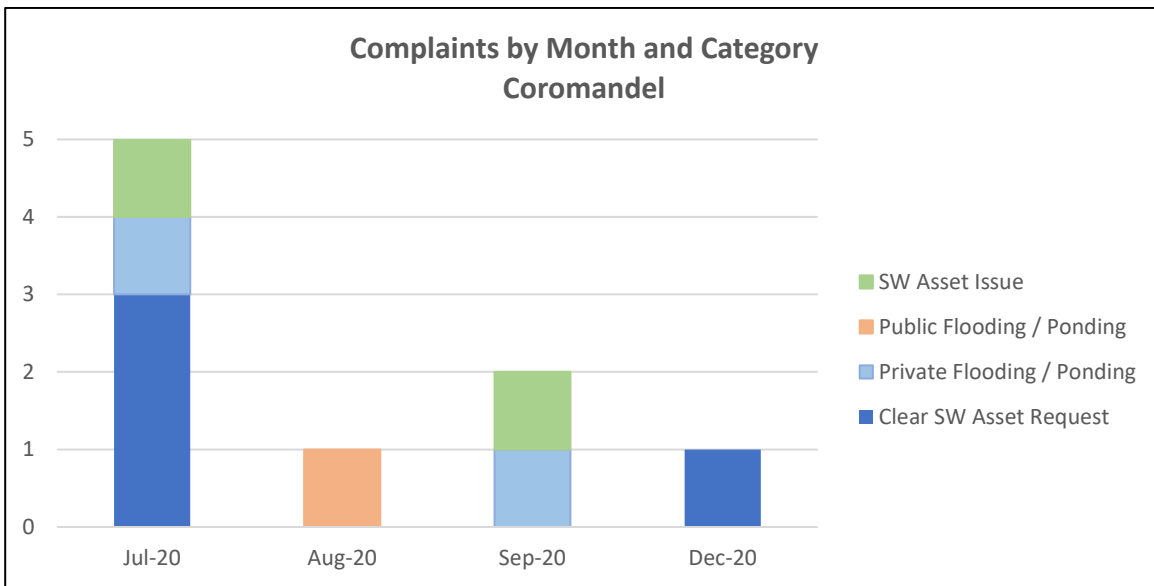


### Comprehensive Stormwater Discharge Consent 105663 – Coromandel

During the 2020-2021 year there were a total of nine requests for service relating to stormwater within the Coromandel urban area, an increase of four from the 2019-2020 year

Requests are categorised as follows:

- Clear Stormwater Asset Request            4
- Ponding / Flooding Private Land            2
- Ponding / Flooding Public Land            1
- Stormwater Asset Issue                      2

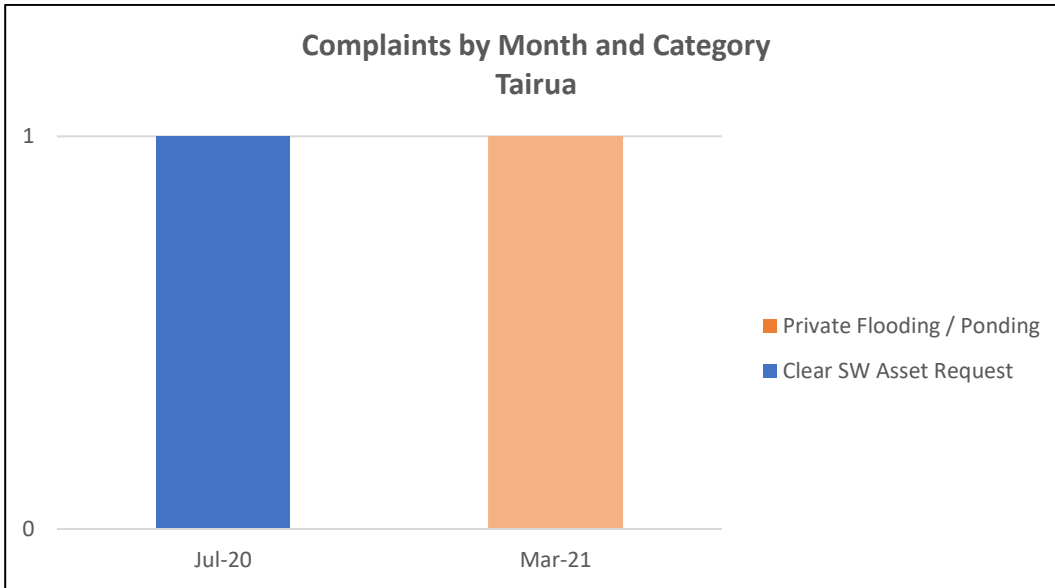


### Comprehensive Stormwater Discharge Consent 105664 – Tairua

During the 2020-2021 year there were a total of two requests for service relating to stormwater within the Tairua urban area, a decrease of five from the 2019-2020 year.

Requests are categorised as follows:

- Clear Stormwater Asset Request                    1
- Ponding / Flooding Private Land                    1

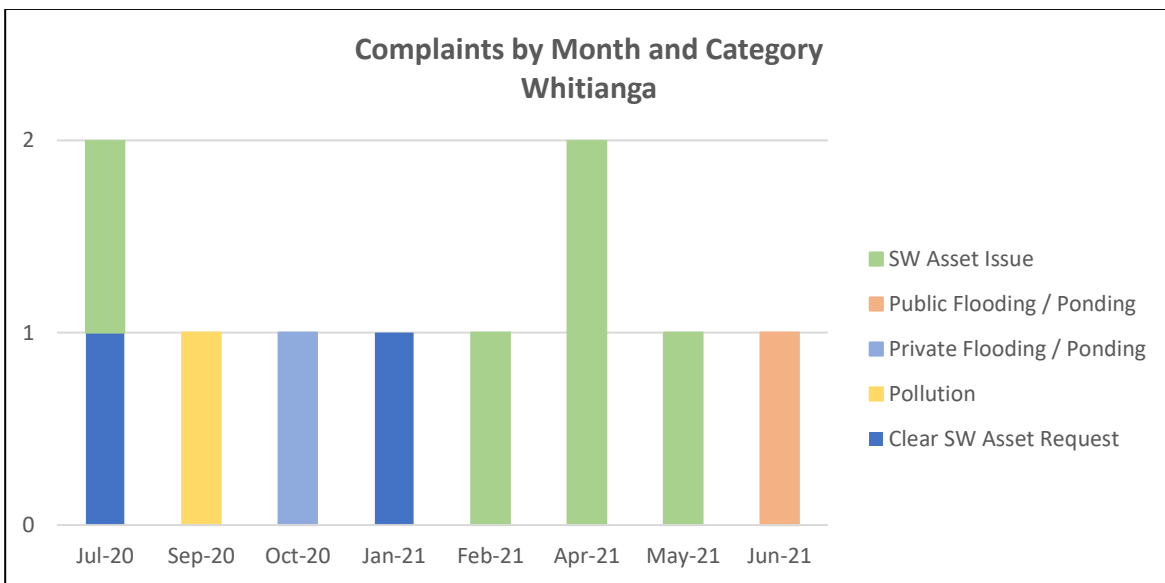


### Comprehensive Stormwater Discharge Consent 105665 – Whitianga

During the 2020-2021 year there were a total of ten requests for service relating to stormwater within the Whitianga urban area, a decrease of six from the 2019-2020 year.

Requests are categorised as follows:

- Clear Stormwater Asset Request                    2
- Pollution Report    1
- Ponding / Flooding Private Land                    1
- Ponding / Flooding Public Land                    1
- Stormwater Asset Issue                                5

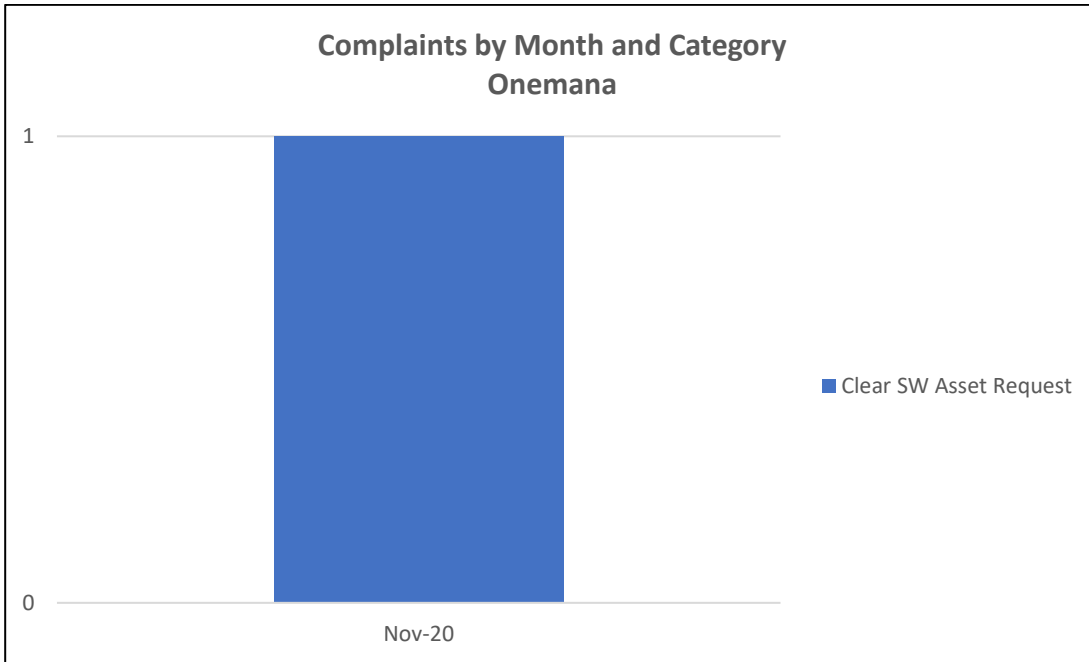


### Comprehensive Stormwater Discharge Consent 105666 – Onemana

During the 2020-2021 year there was one request for service relating to stormwater within the Onemana urban area, a decrease of one from the 2019-2020 year.

Requests are categorised as follows:

- Clear Stormwater Asset Request 1

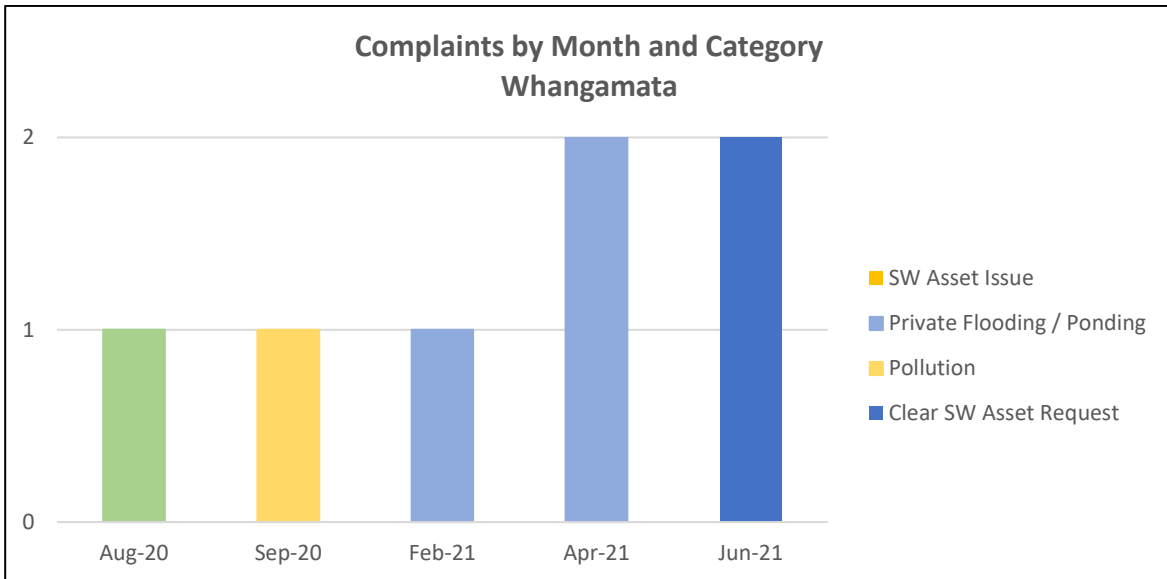


### Comprehensive Stormwater Discharge Consent 105667 – Whangamata

During the 2020-2021 year there were seven requests for service relating to stormwater within the Whangamata urban area, a decrease of one from the 2019-2020 year.

Requests are categorised as follows:

- Clear Stormwater Asset Request                    2
- Pollution Report    1
- Ponding / Flooding Private Land                    3
- Stormwater Asset Issue                                1



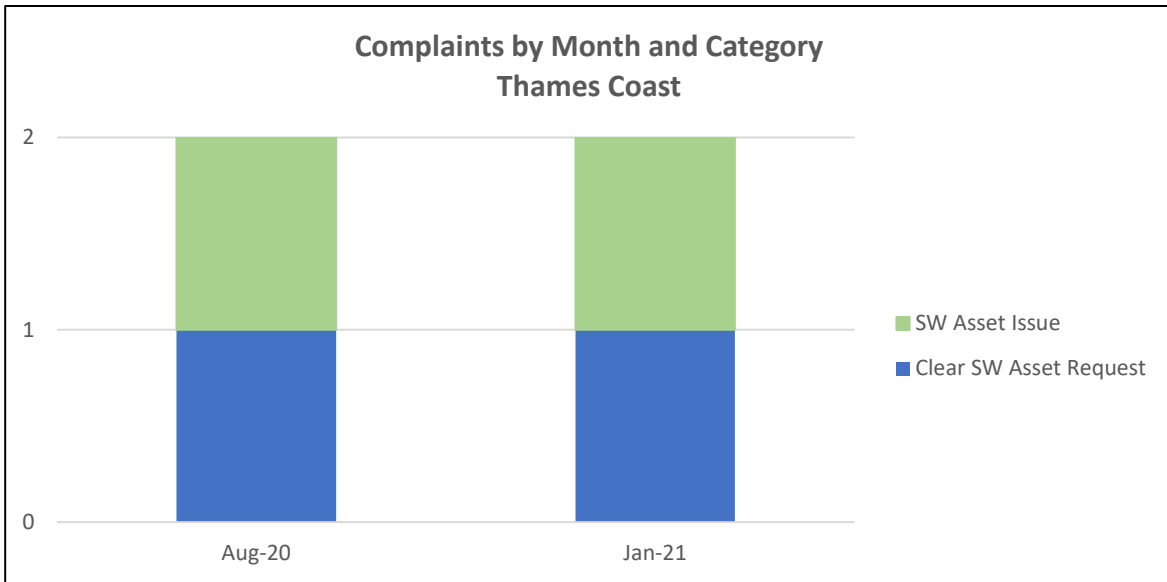


**Comprehensive Stormwater Discharge Consent 105668 – Thames Coast**

During the 2020-2021 year there were four requests for service relating to stormwater within the Thames Coast urban area, a decrease of four from the 2019-2020 year.

Requests are categorised as follows:

- Clear Stormwater Asset Request                    2
- Stormwater Asset Issue                                2



### Appendix 3: Changes to Stormwater Network

There has only been one change to the stormwater network in the last year which has potentially increased the scale or intensity of the actual and / or potential adverse effects of the authorised activities on the environment as required by Schedule A, Condition 2. Only those subdivisions that are > 1 hectare are included. All calculations are rounded to two decimal places.

The results of the calculations provide a reasonable estimate of the change in runoff pre and post-development. Due to the requirement for hydraulic neutrality for new buildings, up to 35% of the land area will be subject to pre-development flows up to a 1 in 10-year, 10-minute, rainfall event. It can be assumed that 50% of this flow will go to ground soakage and therefore there is no increase in the scale or intensity of the discharge to the stormwater system, thus mitigating actual and / or potential adverse effects of the authorised activities on the environment.

#### 15 Wharekaho Road, Wharekaho (Stage 2A2) - Whitianga Urban Area (Consent 105665)

NB/ Calculations relate to the entire Wharekaho subdivision as previously provided in the 2018-2020 Report. Stage 2A2 consists of 15 lots.

Address	Gross Area (ha)	No. of Lots	Average lot Size (ha)	Pre-Development				Post-Development				Flow Increase (m <sup>3</sup> /s)
				Q=CIA/360 (m <sup>3</sup> /s)	C (coefficient)	I (mm/hr)	A (ha)	Q=CIA/360 (m <sup>3</sup> /s)	C (coefficient)	I (mm/hr)	A (ha)	
15 Wharekaho Road, Wharekaho	46.78	111	0.42	4.37	0.35	96	46.78	6.77	0.54	96	46.78	2.40



#### Appendix 4: New Stormwater Activities in Urbanised Catchments

##### 15 Wharekaho Road, Wharekaho (Stage 2A2) - Whitianga Urban Area (Consent 105665)

This stage of the Wharekaho medium density residential subdivision is a total of 15 lots, with areas of reserve within the wider subdivision. The subdivision has been assessed against the following conditions of the Comprehensive Stormwater Discharge Consent:

Condition Number	Condition Summary	Commentary
Schedule A, Condition 3	The Consent Holder shall seek to implement the best practicable option to avoid, remedy or mitigate the actual and potential adverse effects of the stormwater diversion and discharge activities authorised by this consent on the environment	A condition of this consent required hydraulic neutrality as described in Appendix 3
Schedule A, Condition 4(b)	For new stormwater diversion and discharge activities established in urbanised catchments - the new activities do not increase peak discharge rates to, or flow volumes in, stormwater receiving water bodies above those that would occur at the time of granting this consent, unless it is demonstrated that there are no additional adverse effects on the environment or downstream properties as a result of such increase	See Appendix 3
Schedule A, Condition 4(c)	For new stormwater diversion and discharge activities established in developing catchments - the new activities are consistent with Catchment Management Plans which have been prepared in accordance with Condition 25 of this consent, prior to the establishment of new activities within these catchments	This subdivision is not within a developing catchment
Schedule A, Condition 17	All stormwater catchpits which connect to the stormwater network shall be capable of capturing and retaining the majority of gross pollutants. New, replacement and / or upgraded stormwater catchpits shall, when constructed, be further capable of capturing and retaining the majority of floatable contaminants such as oil and grease, unless any discharges of floatable contaminants from the catchpits to the receiving environment would have no more than negligible adverse effects	All stormwater catchpits have a sump which is capable of capturing and retaining the majority of heavy gross pollutants. Historically, catchpits have not been required to capture and retain floatable contaminants

Condition Number	Condition Summary	Commentary
Schedule A, Condition 22	When assessing applications and engineering approvals for new or replacement connections to the stormwater network, the Consent Holder shall, to the extent that it lawfully can, ensure that stormwater management devices are required and / or in place to avoid as far as practicable and otherwise minimise routine contaminant discharges to the stormwater network.	The only stormwater management device TCDC required for this subdivision was hydraulic neutrality which, in this case, was in the form of detention tanks.
Schedule A, Condition 26	The Consent Holder shall coordinate and oversee the implementation of approved Catchment Management Plans as required by Condition 4(c) of this consent, and shall ensure as far as practicable, that all relevant stormwater management devices are constructed and operational prior to the development of impervious surfaces within developing catchments.	This subdivision is not within a developing catchment
Schedule A, Condition 27	For all new stormwater diversion and discharge activities in developing catchments, the Consent Holder shall promote consideration of the Waikato Regional Council publication titled 'Sustainable Subdivision Development - An Environment Waikato Perspective' (WRC, 2006), or any other technical publication approved in advance by the Waikato Regional Council in a technical certification capacity	This subdivision is not within a developing catchment
Schedule A, Condition 28	...the Consent Holder shall promote the implementation of Low Impact Urban Design measures and stormwater management devices in all reticulated catchments, to avoid as far as practicable and otherwise minimise the actual and potential adverse effects of the stormwater diversion and discharge activities authorised by this consent on the environment	WRC consent required stormwater discharge from the development to a detention pond that discharges into a natural wetland that discharges to the Tohetea Stream that ultimately discharges onto the south end of Wharekaho Beach.
Schedule A, Condition 29	As the Consent Holder and / or private developers progressively construct new stormwater management devices that become part of the stormwater network, the Consent Holder shall maintain a register of these devices in the Stormwater Management Plan required by Condition 30 of this Consent, including details of their location, catchment area, operational procedures and maintenance requirements.	Refer to Stormwater Management Plan 2020 Appendix F.

**Appendix 5: Visual Monitoring Results**

Ref 01	February 2021, Shortland Wharf, Thames	June 2021 Shortland Wharf, Thames
	<p>Site cleared and small sail boat removed</p> 	

Ref 02	February 2021, Sealey Street, Thames	June 2021, Sealey Street, Thames
	<p data-bbox="331 277 1039 375">Installation of WA Stops has kept apron and immediate portion of down stream channel clear of mud through the intermittent release of water</p> 	

<p>Ref 03</p>	<p>February 2021, Burke Street Outfall</p> <p>Downstream maintained by WRC Mangrove regrowth apparent after recent removal of larger Mangroves</p> 	<p>June 2021 Burke Street Outfall</p> <p>Mangrove growth has advanced. No other changes</p> 
<p>Ref 04</p>	<p>Thames Control Site - No visual inspection required</p>	

Ref 05	<p>February 2021, Shepard Avenue, Pauanui</p> <p>SW outlet remains unchanged from with stable discharge pool. The final pipe is slowly being undermined and the length of exposed pipe has increased on the seaward side.</p> 	<p>June 2021, Shepard Avenue, Pauanui</p> <p>Further erosion of the embankment on the northern side of the outlet pipe.</p> 
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Ref 06	February 2021, Coromandel outfall to Whangarahi Stream	June 2021, Coromandel outfall to Whangarahi Stream
	<p data-bbox="331 277 499 305">Outfall stable</p> 	<p data-bbox="1194 277 1934 375">No image captured as this outlet is now redundant following SW upgrades on Wharf road. The outlet has been replaced with a device close to the Wharf road bridge</p>

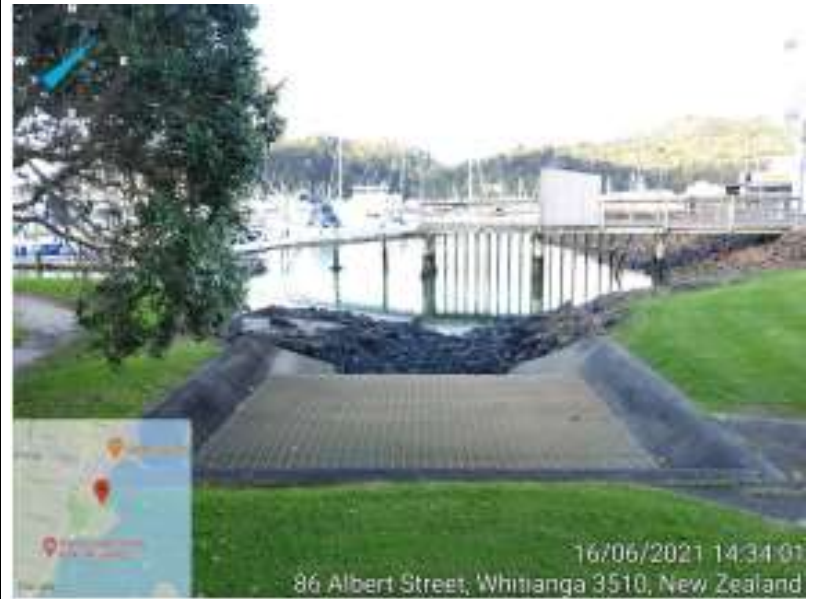
Ref 07	February 2021, Marquet Place Tairua	June 2021, Marquet Place Tairua
	<p data-bbox="325 276 934 308">Outfall requires repair work around the head wall</p> 	<p data-bbox="1144 276 1932 341">Tree jammed in outlet later removed. Requirement for remedial work on head wall and surrounds remains</p> 

Ref 08

February 2021, Whitianga Marina



June 2021, Whitianga Marina



<p>Ref 09</p>	<p>February 2021, Moewai Road, Whitianga</p> <p>Drain flow is clear of surface contaminants but has high suspended sediment load</p> 	<p>June 2021, Moewai Road, Whitianga</p> <p>Drain downstream from outlet Same conditions as in February</p> 
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Ref 10	February 2021, Casement Road Whangamata	June 2021 Casement Road, Whangamata
	<p data-bbox="321 267 630 308">Channel clear and stable</p> 	<p data-bbox="1144 267 1575 308">Channel requires vegetation control</p> 

Ref 11	February 2021, Hetherington Road Whangamata	June 2021, Hetherington Road Whangamata
	<p data-bbox="331 277 856 310">Site unchanged from previous inspections</p> 	

Ref 12	February 2021, Aicken Road Whangamata	June 2021, Aicken Road Whangamata
	<p data-bbox="331 277 852 310">Outlet channel requires vegetation control</p> 	<p data-bbox="1152 277 1518 310">Vegetation control completed</p> 

Ref 13	February 2021, Lindsey Road Whangamata	June 2021, Lindsey Road Whangamata
	<p>Outlet stable with minor surface scums / slick</p> 	<p>No change to February inspection</p> 



Ref 14	<p>February 2021, Kotuku Street Whangamata</p> 	<p>June 2021, Kotuku Street Whangamata</p> 
Ref 15	Whangamata Control Site - No visual inspection required	