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Lower Waikato main channel flood protection performance review

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Te Kaunihera a Rohe o Waikato

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Abstract

A performance review has been undertaken for flood protection assets on the Lower Waikato River main channel. The assessment scope is outlined in the project management plan (Doc# 15799033). The scope covers collation and review of previous literature and models, updating the models with most recent hydrology, cross-section and stopbank survey data, and incorporating specific flood assets within the system to improve model outputs and flood protection stopbanks performance.

The stopbank performance is a measure of the vulnerability of a stopbank to overtopping under a design event. The assessment process involves comparing actual crest levels of a stopbank against the corresponding design flood level to establish a performance grade for a 100 m length of the stopbank. Performance grades define the percentage of freeboard left compared to design freeboard, which informs the need and timing for stopbank upgrades.

The review also involves modelling future climate change hydrology and design flood profiles to inform stakeholders of the potential increase in flood risks resulting from future climate. In addition, it informs the Council of the potential loss in flood protection service level to assist in management decisions to build community resilience against future flooding.

Executive summary

The Lower Waikato-Waipa Control Scheme (LWWCS) is a comprehensive river control scheme designed to provide flood protection and drainage improvements within the flood plains of the lower Waikato and Waipa rivers. The flood magnitude against which the stopbanks were designed (Protection Standard) varied along the floodplain due to the technical and economic feasibility considerations. In general, the protection standard provided by stopbanks along the Main River Channel included a 1%, 2% or 10% Annual Exceedance Probability (AEP) river flood event or a 1% AEP tidal event. Note that other protection standards were adopted along tributaries.

The Flood Protection Performance Review (FPPR) focuses on Stopbank and Spillway assets of the LWWCS along the Lower Waikato River Main Channel only and excludes the Mangawara, Whangamarino, Lake Waikare and Mangatawhiri flood protection schemes. The flood protection assets along the Lower Waikato Main channel consist of 123.5 km of stopbanks and 1.6 km of spillways.

Flood protection schemes managed by Waikato Regional Council (WRC) are reviewed generally every ten years as provided for in the Regional Asset Management Plan (Doc# 12705650). The purpose of the review is to investigate the impacts on design flood levels due to changes in natural and physical factors such as:

1. Rainfall
2. Tide levels
3. Catchment development and land use
4. River channel and floodway parameters/dimensions

The performance of a flood defence (stopbank) against overtopping is measured by comparing its actual surveyed (stopbank/spillway) crest levels with the Design Crest Level. The Design Crest Level is determined by a Design Flood Level plus a design freeboard. The Level of Service for an asset is the frequency of the Design Flood Level, expressed as an Annual Exceedance Probability (AEP) or Average Return Interval (ARI).

The performance of an asset is classified by a grade between 1 and 5. An asset performance grade of 1 or 2 means the agreed Level of Service is met. A performance grade of 5 or 4 means the agreed Level of Service is not met or marginally met, requiring an upgrade to their design levels in the immediate term within 1 to 5 years. Performance grade 3 stopbanks means the Level of Service is met, but stopbanks are likely to deteriorate further, and planned upgrade will be required in the medium term of 5-to-10-year period.

Performance Assessment:

	Summary of stopbank and spillway performance						**Total**
Performance grade	1	2	3	4	5	Not assessed	
Total length (m)	79,424	22,977	6,936	3,946	6,609	3,268	123,160
Percentage (%)	64.5%	18.7%	5.6%	3.2%	5.4%	2.7%	100.0%

1. Approximately 113.3km (92.0%) of the 123.2km total stopbank length are above the Design Flood Level (DFL) and can withstand a design event without overtopping.
2. 10.6km of stopbanks with performance grades 4 and 5 are below the performance standard. These stopbanks must be raised by approximately 0.38m on average to meet the design crest level (DCL).

3. The Morrison Road return (left and right bank) have not been reviewed as the stopbank was not constructed to meet any specific design event standard. A separate review of the level of service and management options is planned.
4. Approximately 76.6% (1.204km) of the 1.6 km spillway total length is classified as grade 1 to 4. Approximately 12.1% (190 m) of total spillway length is the Morrison Road return (left bank) Spillway, which has not been assessed.
5. For some stopbank/spillway sections, the performance assessment at the start and end may differ from what is onsite (due to projected coordinate survey errors). The coordinates of the first and last link of a stopbank or spillway section should be verified onsite before any asset upgrade is carried out.

Climate Change Assessment:

1. The estimated average water level rise for the 10-year ARI with climate change RCP scenarios for the Lower Waikato River main channel is 0.49m.
2. The estimated average water level rise for the 100-year ARI with climate change RCP scenarios for the Lower Waikato River main channel is 0.44m.
3. The Lower Waikato River main channel Scheme minimum freeboard of 0.3 is less than this maximum average water level rises due to climate change.
4. To accommodate Climate change and retain the current LOS with appropriate freeboard, the DCL's will need to increase.

Recommendations:

1. The identified design flood levels and crest levels for each major stopbank and spillway (to address the measured change since the last scheme review) are adopted.
2. The design standard is formalised as follows:
    a. For the 123.2km of stopbanks designed to withstand river flooding, it is recommended that the existing 2, 10 and 100-year ARI design standards be retained.
3. Stopbank upgrades for the 10.6 km that are at a performance grade of 4 or 5
4. Prioritisation of stopbank upgrades to be undertaken by the Lower Waikato Zone, Asset Management and Engineering Delivery Teams.
5. Rangiriri Spillway performance will be reassessed with the performance assessment of the Whangamarino system scheduled to start in the 21/22 financial year.
6. Further works are required on the accuracy of surveyed information and asset location prior to carrying out upgrade works.
7. Based on the Climate Change impact information provided for the Lower Waikato River main channel, much of the existing stopbanks and spillways will require future upgrades to maintain the current Level of Service. Further planning and consideration of options are recommended to address future flood protection requirements.

1 Introduction

1.1 Overview

Waikato Regional Council Integrated Catchment Management (ICM) Directorate provides catchment management, river management, flood protection, and land drainage services across the region. The standards and levels of service provided are established in agreement with the regional communities. Consequently, Flood protection schemes generally involve stopbanks with drainage outlets along river systems forming contained floodways to convey flood flows downstream, preventing flooding of adjacent properties. The assets, levels of service and management requirements are documented in the Regional Asset Management Plan (Doc #12705650).

Flood protection schemes managed by WRC are reviewed regularly. The purpose of the review is to investigate the effects of changes in both natural and artificial factors on the Lower Waikato River hydraulics and scheme design flood levels, such as:

1. Rainfall
2. Tide levels
3. Catchment development and land use
4. River channel and floodway parameters/dimensions

These levels form the basis for assessing stopbank performance, and thus the scheme's ability to meet its currently agreed level of service.

1.2 Design performance measures

The levels of service that were initially established for the Lower Waikato Waipa Control Scheme (LWWCS) were set out in the 1959 scheme design report (WVA1959 – refer to doc#2261063). The current design service levels were confirmed through an extensive consultation process undertaken in 1997 when the first asset management plan was developed largely unchanged from the original scheme design. The stopbank design standards/service levels, expressed in terms of Annual Exceedance Probability (AEP) and freeboard, are shown in Table 3.1.

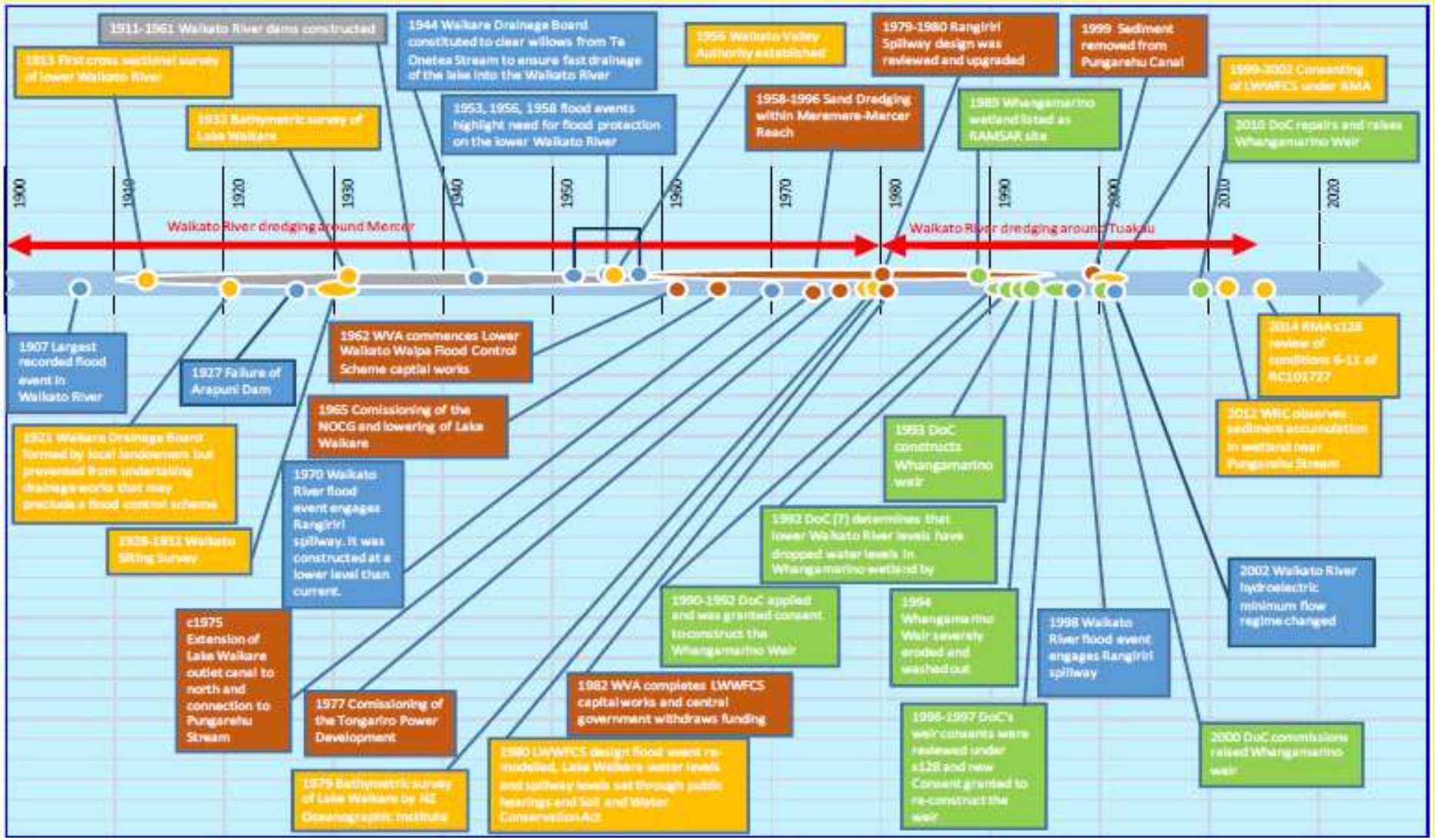
1.3 Overview of the Lower Waikato River Catchment

The Lower Waikato River Catchment (~2900 km2) comprises the Waikato River catchment area from Ngāruawāhia to the Tasman Sea and covers approximately 20 per cent of the total Waikato River catchment area. The LWWCS was established after the 1958 flood to reduce the losses caused by widespread flooding.

Prior to the LWWCS establishment, historical flooding data were gathered for the Waikato River Valley from 1907 to 1958. The earliest sounding data on record for Waikato River from the River Head to the Elbow was done in 1862 by Captain Greaves. A summary of the Lower Waikato Flood Protection Scheme Historical Background is shown in Figure 1**Error! Reference source not found.** below.

Hydraulic assessments of the performance of the main channel of the Lower Waikato River were undertaken in 1959, 1983, 2009 and 2013 (refer to doc #2261063, # 3300786, #1561932 and #2483094, respectively for these assessment reports).

Figure 1 Lower Waikato Flood Protection Scheme Historical Background (doc# 11655555)



1.4 Objectives of the Lower Waikato Flood Protection Review

The objectives of this review are:

1. To collate stopbank crest level survey information for all stopbanks along the Lower Waikato River Main Channel.
2. To overlay the stopbank crest level profile for each stopbank over the design event profile for that stopbank.
3. Determine the freeboard height between the two profiles above and assess the freeboard height against the design freeboard height to establish the Performance Grade of the stopbank at 100 m intervals.
4. Prepare a report outlining the results of the performance assessment for each river stopbank, with an overall map showing the different performance grades. Note: asset management requirement is that report includes a practical interpretation of the data. i.e., 1% AEP- =220m3/s at Tuakau = 3m stopbank height.
5. Spreadsheet for Conquest/Infor is quality checked before being submitted to Asset Management for input into Conquest/Infor.

2 Levels of service

Levels of service define the quality of delivery for a particular activity or service against which service performance can be measured. Associated with each service level are one or more performance measures that enable measurement of service level performance. The Regional Asset Management Plan (RAMP) states the service level for flood protection is:

"To provide the regional community with an agreed level of protection from floods".

The expected outcome from a service level agreement and flood protection performance review is that; Communities are less vulnerable and more resilient to flooding, the effects of climate change and changes to society and the economy.

Level of Service is expressed as the Average Recurrence Interval (ARI) or Annual Exceedance Probability (AEP) of the design event. Design Flood Levels for stopbanks are then calculated from the Design Flood Standard. Design Freeboard provides a safety allowance (over and above the Design Flood Level) when constructing and maintaining stopbanks.

The RAMP performance measures and targets are shown in Table 2 below.

Table 1: Assets Levels of Service, Performance Measures and Targets

Alignment	Requirement	Measure
Flood Protection		
System Adequacy	Control effect of a flood event (area affected)	System designed to agreed annual exceedance probability levels
System Maintenance	Flood Protection and control assets maintained, repaired, and renewed	85% of planned maintenance actions achieved each year
		93% of Rural and 95% of Urban Stopbanks maintained to above-designed flood height, or as agreed within each zone

Alignment	Requirement	Measure
		Flood recovery plans put in place for all major[1] events setting out time frames under which flood response actions are to be completed
River Management		
System Maintenance	Proactive monitoring and maintenance of priority rivers and streams	85% of planned maintenance actions achieved each year
		95% of enquiries being responded to within two working days
		Recovery plans put in place for all major events setting out time frames under which flood response actions are to be completed
Land Drainage		
System Adequacy	Reliable water table levels to ensure pastoral growth	Surface water ponding in a 24 Hour, 10%AEP rainfall event is removed within a 3-day period.
	Control effect of rain events	System designed to handle events with up to a 10% annual exceedance probability
System Maintenance	Land drainage assets maintained, repaired, and renewed	% of planned maintenance achieved each year, as agreed within each scheme.

In 2015 the following strategy for the renewal of stopbanks was adopted as stated in the RAMP:

- Stopbanks with performance grades 4 and 5 will be programmed for renewal.
- All stopbanks with performance grades 4 and 5 will be renewed within 5 years of being identified.
- When the renewal backlog is complete, expenditure on stopbank renewal will match depreciation.

All stopbanks with performance grade 4 can withstand a design event without overtopping. However, stopbank settlement over time can change some performance grade 4 to performance grade 5 stopbank, hence the need to renew both performance grades.

3 Flood protection assets and service levels

The table below is a summary of all the stopbank assets that have been investigated in this performance assessment review.

Table 2: Summary of current performance measures

Description (SB =Stopbank)	**Type**	**Design standard**		**Design free-board (m)**	**Length (m)**
		(% AEP)	**(ARI -yrs.)**		
Aka Aka Otaua (Mangawhero) SB	Stopbank	1%	100	0.3	263
Aka Aka Otaua Buffer SB	Stopbank	43%	2.33	0.2	4,350
Aka Aka Otaua SB	Stopbank	1%	100	0.3	13,865
Austins/Waikato Sect SB	Stopbank	1%	100	0.3	2,826
Austins/Whangape Sect SB	Stopbank	1%	100	0.3	1,444
Blairs Sect SB	Stopbank	1%	100	0.3	769

[1] A major flood event is defined as an event that triggers use of disaster reserve funding.

Description (SB =Stopbank)	**Type**	**Design standard**		**Design free-board (m)**	**Length (m)**
		(% AEP)	**(ARI -yrs.)**		
Churchill East SB	Stopbank	10%	10	0.61	4,840
Deroles Main Stopbank	Stopbank	10%	10	0.61	1,000
Deroles Return Stopbank	Stopbank	10%	10	0.61	1,340
Furniss Downstream SB	Stopbank	10%	10	0.3	2,790
Furniss Upstream SB	Stopbank	10%	10	0.3	1,521
Guests Sect SB	Stopbank	1%	100	0.3	1,691
Harris Street SB	Stopbank	1%	100	0.61	111
Harveys SB	Stopbank	10%	10	0.3	1,650
Hills Sect SB	Stopbank	1%	100	0.3	1,321
Hly Sth Main Road: Between Tainui BR & Rail BR SB	Stopbank	1%	100	0.61	472
Hly Sth Tainui Bridge Up Stm SB	Stopbank	1%	100	0.61	2,435
Hora Hora Sect SB	Stopbank	1%	100	0.3	6,398
Horseshoe SB	Stopbank	1%	100	0.3	767
Huntly North Freeboard SB	Stopbank	1%	100	0.61	453
Huntly North SB	Stopbank	1%	100	0.61	713
Huntly West Sect SB	Stopbank	1%	100	0.3	3,452
Kimihia SB	Stopbank	1%	100	0.3	2,314
Mangatawhiri Compartment 5 (Miller Farlane)	Stopbank	1%	100.0	0.30	427
Mercer West Northern Main SB	Stopbank	10%	10	0.6	3,000
Meremere Main SB	Stopbank	1%	100	0.6	384
Meremere West SB	Stopbank	10%	10	0.6	4,308
Morrison Road Main SB	Stopbank	10%	10	0.6	800
Morrison Road return (left bank)	Spillway	Not specified	Not specified	0.00	190
	Stopbank	Not specified	Not specified	0.00	1,528
Morrison Road return (right bank)	Stopbank	Not specified	Not specified	0.00	1,740
Ohairoa SB	Stopbank	10%	10	0.61	2,470
Okowhao Sect SB	Stopbank	1%	100	0.3	2,709
Onewhero East SB	Stopbank	10%	10	0.46	2,635
Onewhero West SB	Stopbank	10%	10	0.46	3,781
Orton SB	Stopbank	10%	10	0.61	1,635
Parry Street SB	Stopbank	1%	100	0.61	315
Rangiriri (Section 1) SB	Stopbank	1%	100	0.3	22
Rangiriri (Section 1) Spillway	Spillway	2%	100	0	83
Rangiriri (Section 2) SB	Stopbank	1%	100	0.3	178
Rangiriri (Section 2) Spillway	Spillway	2%	100	0	178
Rangiriri (Section 3) SB	Stopbank	1%	100	0.3	322
Rangiriri (Section 3) Spillway	Spillway	2%	100	0	1,000
Rangiriri North SB	Stopbank	10%	10	0.61	2,323
Rangiriri Spillway to Wool Scourers SB	Stopbank	1%	100	0.3	2,783
Rotongaro Canal LB SB	Stopbank	1%RL 7.59 - 7.65m (MVD) *	RL 7.59 - 7.65m (MVD) *100	0.3	1,400

Description (SB =Stopbank)	**Type**	**Design standard**		**Design free-board (m)**	**Length (m)**
		(% AEP)	**(ARI -yrs.)**		
Rotongaro Canal RB Austins Section (D/S of Spillway) SB	Stopbank	RL 7.59 - 7.65m (MVD) *1%	RL 7.59 - 7.65m (MVD) *100	0.46	1196
Rotongaro Canal RB Austins Section (U/S of Spillway) SB	Stopbank	RL 7.65m (MVD)*	RL 7.65m (MVD)*	0.001	108
Rotongaro Canal RB Austins Section Spillway	Spillway	RL 7.59m (MVD)*	RL 7.59m (MVD)*	0.001	121
Rotongaro Canal RB Horo Horo Section SB	Stopbank	RL 7.65 – 7.74m (MVD)*	RL 7.65 – 7.74m (MVD)*	0.46	2,919
Southern Compartment Main SB	Stopbank	10%	10	0.6	3,000
Te Kohanga Major-Eastern Section 1 SB	Stopbank	1%	100	0.61	5,282
Te Kohanga Major-Eastern Section 2 SB	Stopbank	1%	100	0.61	367
Te Kohanga Major-Eastern Section 3 SB	Stopbank	1%	100	0.61	556
Te Kohanga Major-Western SB	Stopbank	1%	100	0.61	1,672
Te Kohanga Minor (Aireys) SB	Stopbank	10%	10	0.3	2,494
Tickles SB (see note below)	Stopbank	1%	100	0.3	1,590
Tuakau: East Compartment SB	Stopbank	10%	10	0.61	2,853
Tuakau: West Compartment SB	Stopbank	10%	10	0.61	4,336
Whiskey Flats Eastern Comp SB	Stopbank	1%	100	0.3	1,105
Whiskey Flats Western Comp SB	Stopbank	1%	100	0.3	1,036
Wool Scourers to Fosters Landing SB	Stopbank	1%	100	0.3	5,100
Total					124,732

*Design standard is unspecified, but the reduced levels are as per the original design

Note 1: Morrison Road return left and right stopbanks do not have a specified design standard
Note 2: Tickles stopbank service levels & management is under review with the property owner.

Aka Aka Otaua Buffer Stopbank

The original function of the Buffer stopbank is to isolate the river flooding from Tidal fluctuation along Holmes Canal. The design attempted to ensure that Aka Aka flood-gated drainage outlets operate (e.g. open and close) in response to the tidal cycle, which provides longer periods of operation during low tide.

This bank became a silt pile for the river and canal dredging, so its height and construction methods have not been actively managed over its life.

The original design height of the stopbank was RL 2.56 m (MVD) at its downstream end near Hoods Landing and RL 2.61 m (MVD) at the upstream end of the stopbank (doc#2225153). Frequency Analysis of Hoods Landing Tide Gauge suggests that the 2.33-year ARI tidal event is at RL 2.35 m MVD (refer to Table 3). Therefore, for this modelling, a freeboard of approximately 210mm to 260mm has been applied for this stopbank. For the performance assessment, a freeboard of 200 mm was used.

Table 3: Waikato at Hoods Landing

Return period	Gauge Level (metres)	Moturiki Datum (metres)
2.33	2.27	2.35
5	2.34	2.43
10	2.40	2.49
20	2.46	2.55
30	2.49	2.58
50	2.54	2.62
100	2.59	2.68

Based on these parameters, the performance assessment shows most of the stopbank is grade 4 or 5, well below the used design crest level and design flood level. It is recommended that an assessment of the required design crest level is completed before any upgrades are undertaken.

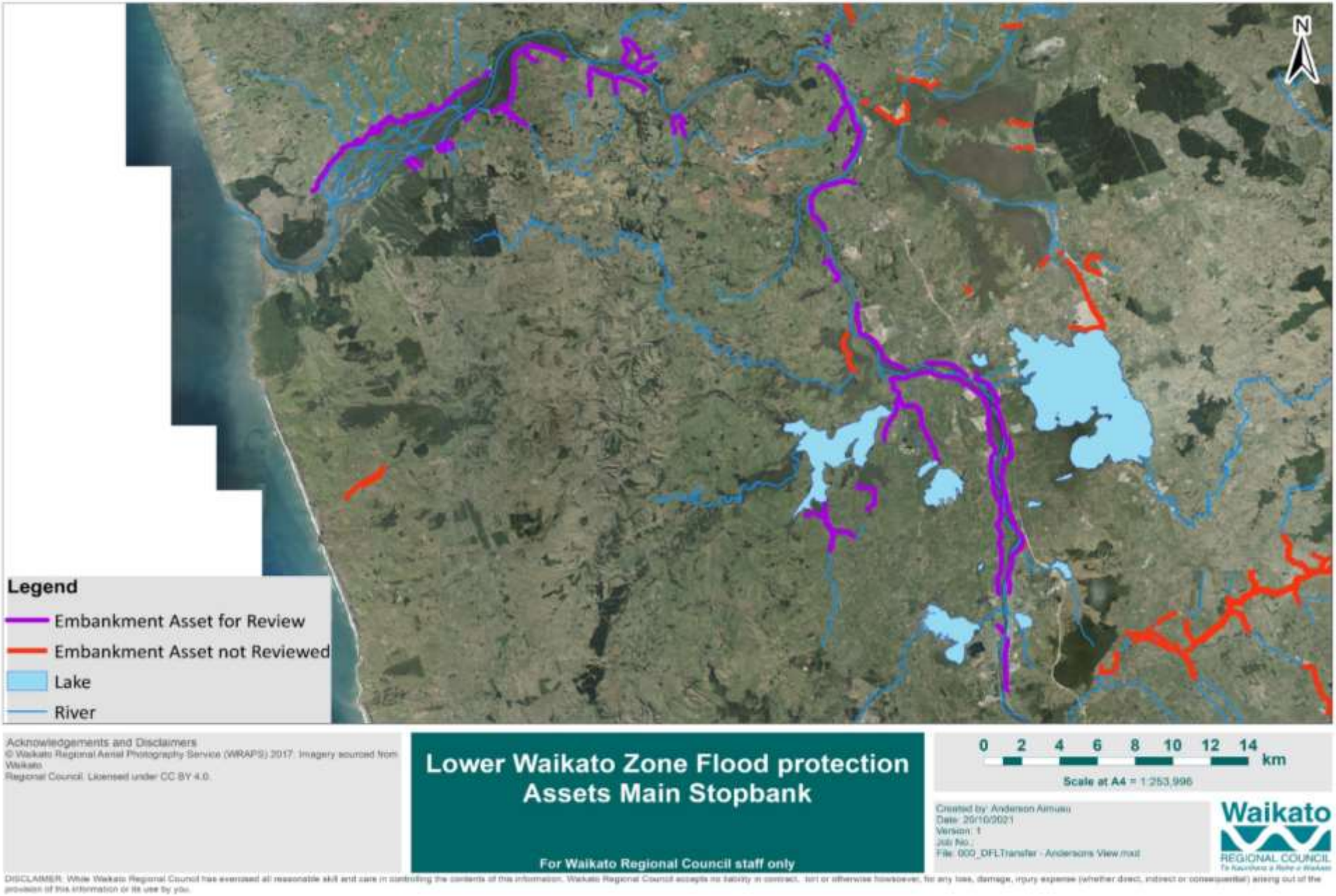
Morrison Road Return Stopbank

The Morrison Road Return stopbank was not constructed to meet any specific design event standard. The stopbank is typically overtopped several times annually and has settled significantly as the underlying soils are organic peat layers. A review of the overall performance and management options has been initiated, and accordingly, no performance assessment is carried out for these stopbanks.

Rotongaro Canal RB Austins Section Spillway

The Rotongaro Canal RB Austins Section spillway is constructed on an internal stopbank (Rotongaro Canal Right Stopbank). The performance is measured against its original design height (doc#15181478) and does not relate to rainfall/flood events. Refer to doc#1534866) for details of the Rotongaro as-built cross-section.

Figure 2: Map showing Lower Waikato Main Channel Stopbank Asset



4 Model Result

The Lower Waikato River Catchment has been modelled by DHI(NZ) using their Mike11 hydraulic modelling software and incorporated NAM rainfall-runoff modelling package.

The modelling was completed in four phases, with each phase reviewed by both WRC and an external consultant (Tonkin and Taylor). The four phases include:

1. update and recalibration of the NAM rainfall-runoff model,
2. update to the hydraulic MIKE 11 model,
3. calibration of the hydraulic model and
4. design simulations.

The review of the hydraulic modelling ensured a robust model output for the performance assessment.

Four rainfall events (1%, 2%, 5%, 10% AEP) have been considered for simulating design scenarios, including future sea-level rise due to climate change. An additional scenario of a constant 350m3/s flow at Ngāruawāhia was undertaken to assess the influence of the Tongariro Diversion into Lake Taupo, which will be assessed later.

Details of the model setup, calibration and execution scenarios are provided in DHI final Report (refer to doc#21996669).

Peak discharges obtained for the design standard at critical locations in the catchment are presented in the final hydraulic report.

4.1 Current Climate Result

The flood level profiles along the Lower Waikato River for a range of ARI events are shown in Appendix 3 of this report. These water levels are used as current design flood levels (DFL) to define the stopbank and spillway asset levels of service for the Lower Waikato River main channel flood protection scheme.

4.2 Future Climate Result

A comparison of modelled water levels between current 10-year and 100-year ARI and climate change RCP 6.0 and RCP 8.5 scenarios to 2101-2120 is shown in Table 4 below.:

Table 4: Comparison of water level increase at Lower Waikato River main channel for 10-year and 100-year ARI

Scenario	Average water level increase (m)
10year ARI RCP 6.0	0.28
10year ARI RCP 8.5	0.49
100year ARI RCP 6.0	0.25
100year ARI RCP 8.5	0.44

Based on the two RCP scenarios, the lower Waikato River could see up to 0.49 m (10-year ARI) and 0.44 m (100-year ARI) rise with projected climate change (RCP 6.0 and RCP 8.5 scenarios to 2101-2120).

The Lower Waikato River main channel Scheme minimum freeboard of 0.3 is less than this maximum average water level rises due to climate change.

To accommodate climate change and retain the current LOS with appropriate freeboard, the DCL's will need to increase. However, raising stopbank heights may not be economically viable in some areas.

5 Asset Performance

Flood protection schemes managed by WRC are reviewed generally every ten years as provided for in the Regional Asset Management Plan (Doc# 12705650). The stopbanks performance is a measure of the vulnerability of the stopbank to withstand a design flood without overtopping.

5.1 Performance measurement

Stopbanks, spillways and dams are graded on a one to five scale to enable measurement of performance against target. The five performance grades for both stopbanks and dams are set out in Table 5, while the performance grade for spillway is set out in Table 6. The RAMP states that service levels will be achieved by maintaining stopbanks to achieve performance grade 4 or better.

5.2 Stopbank performance

The performance of Stopbanks is assessed by comparing the current actual (surveyed) crest level against the design crest level (DCL). The assessment is done at every 100m length or link of stopbank, where the current crest level is compared to DCL.

Plots showing design flood levels, design crest levels and actual crest levels for each compartment are shown in Figure 17 - Figure 75. The current performance of Stopbanks and Spillways in the Lower Waikato River Catchment have all been assessed in this scheme review.

Table 5: Stopbank performance grades

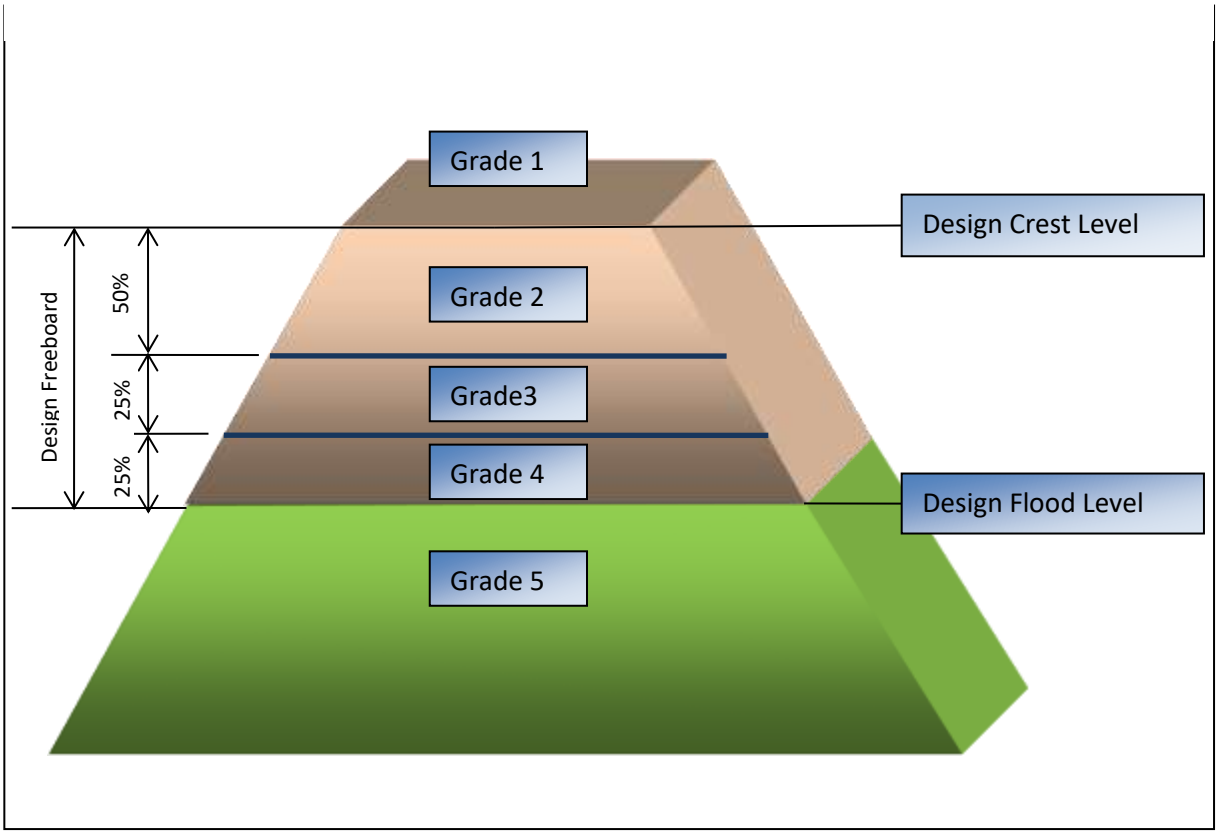
Performance grade	Stopbanks
	P= (actual freeboard/design freeboard) x 100
1	P ≥ 100%
2	100% > P ≥ 50%
3	50% > P ≥ 25%
4	25% > P ≥ 0%
5	P < 0%

Designed Crest Level (DCL) = Design Flood Level (DFL) + Design freeboard.
Actual freeboard = Actual Crest Level (ACL) - Design Flood Level (DFL)
Target = DFL + ½ Freeboard (i.e., performance grade 1 or 2).

In general, the target stopbank performance grade is 1 and 2, while grades 3, 4 and 5 do not meet the required stopbank performance grade. Stopbanks with performance grade 3 do provide marginal protection and are in the monitoring phase. Although stopbank with performance grade 4 does offer some level of protection, they do tend to performance grade 5 over time due to compaction and consolidation. Hence, stopbanks that have performance Grades 4 and/or 5 are programmed for renewal and will be renewed within 5 years of being

identified. This strategy to renew stopbank with performance grades 4 and 5 was adopted in 2015 as stated in the RAMP (refer to p.117 of the RAMP- doc# 12705650).

Figure 3: The performance grading scale for stopbanks is shown diagrammatically



Current performance has been assessed against the design performance standard based on the most recent stopbank crest level survey data.

The current height of all the stopbanks in the Lower Waikato River Catchment is surveyed at 100 m intervals. The performance of all stopbanks at the current Level of Service, and using the updated heights provided through hydraulic modelling, was calculated and shown graphically in Figure 4 and Figure 5.

For some stopbank/spillway sections, the performance assessment at the start and end may differ from what is onsite (due to projected coordinate survey errors). The coordinates of the first and last link of a stopbank or spillway section should be verified onsite before any asset upgrade is carried out.

Figure 4: Stopbank performance broken down by compartment

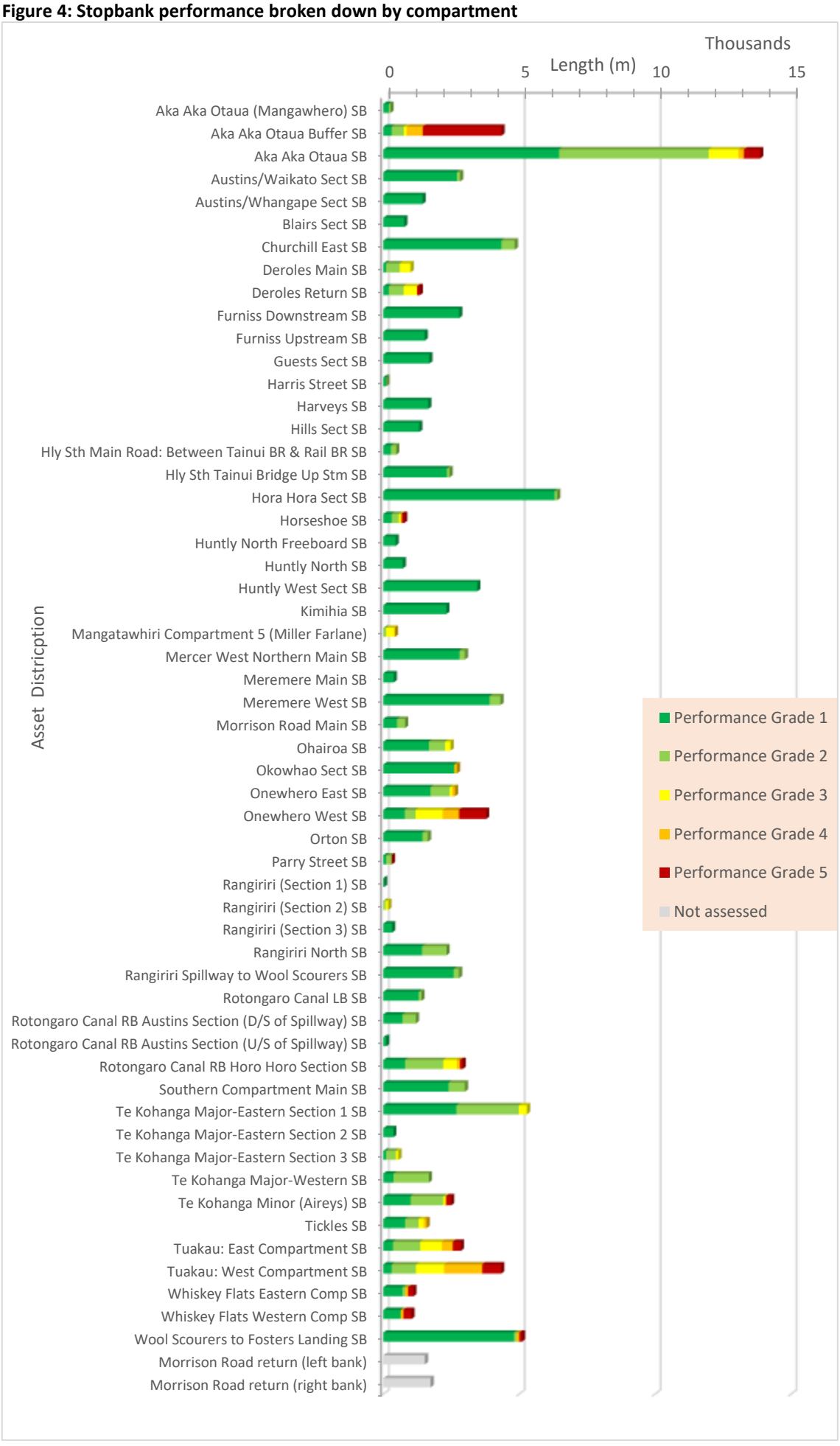
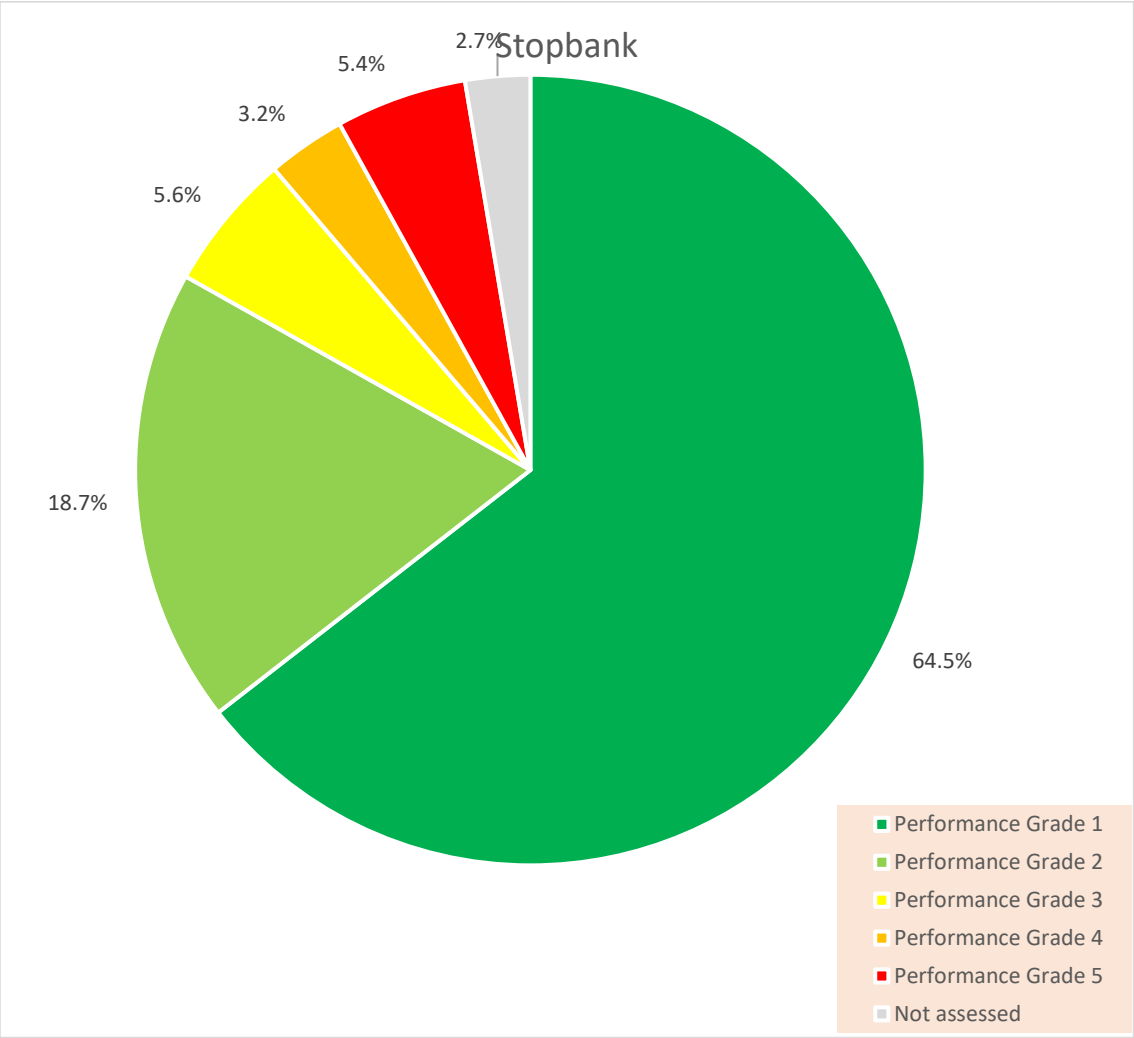


Figure 5: Overall stopbank performance



5.3 Spillway performance

The performance of spillways is assessed by comparing the current actual (surveyed) crest level against the design crest level (DCL). The design crest levels of spillways are set to overtop and do not incorporate a freeboard. Therefore, a small increase or decrease in actual crest levels can have significant implications downstream.

A performance grading system has been adopted by the Waikato Regional Council Asset Management Plan (Doc#12705650). This grading system was developed to refine the grading of spillways and to improve asset management practices in relation to spillways, as outlined in Table 6 below. Spillway activation and spillway capacity are the two indexes used in this grading system.

The performance is defined in terms of the freeboard variance for Spillway activation and the Average Ratio (R) of AFB / DFB for spillway capacity. Where AFB is Actual Freeboard and DFB is Design Freeboard:

Table 6: Performance grades – spillway activation and capacity

Performance grade	Activation criteria Variance (A) = Min (AFB – DFB)	Capacity criteria Ratio (R) = Average (AFB / DFB)
1	A ≥ -0.050m	R ≥ 1
2	-0.050m > A ≥ -0.100m	0.9 ≤ R < 1
3	-0.100m > A ≥ -0.150m	0.5 ≤ R < 0.9
4	-0.150m > A ≥ -0.200m	0.25 ≤ R < 0.5
5	A < -0.200m	R < 0.25

Based on the above criteria, the spillway performance was evaluated and shown in Figure 5.4. Noting that Morrison Road Spillway was not assessed.

Figure 6: Spillway performance by location

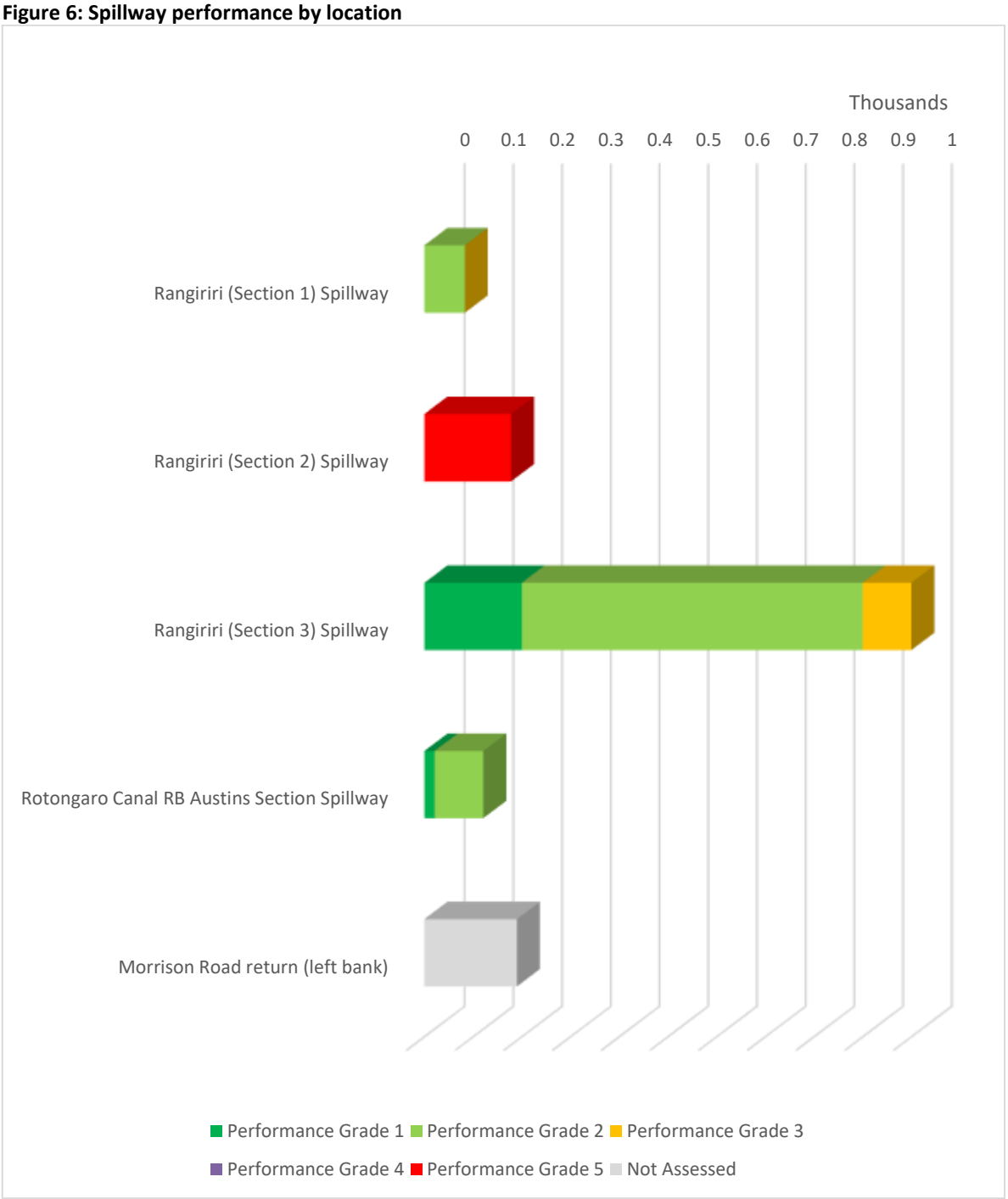
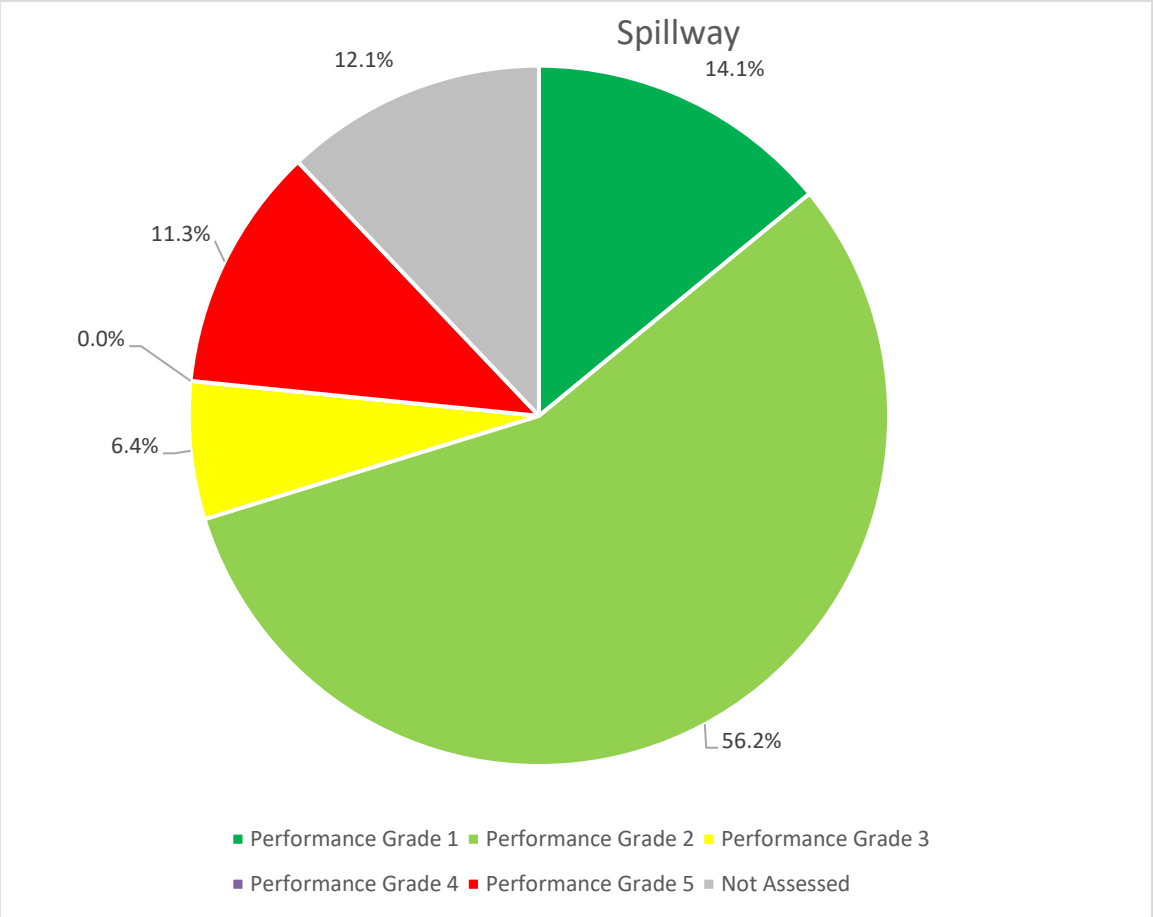


Figure 7: Overall spillway performance



A map showing a comparison of the current year and previous year stopbank performance assessment is shown in appendix 2 of this report. The difference between the current and previous performance assessments are minor in most locations.

6 Conclusion

The review indicates that approximately 92.0% of scheme stopbanks (by length) are above the adopted design flood level (i.e., performance grades 1,2, 3 and 4).

Under the present climate scenario, 102,401m (83.1%) of stopbanks length meet the current performance requirements (performance grades 1 and 2). 10,882m (8.8%) provide marginal protection (grades 3 and 4). 6,609m (5.4%) are below design flood level (performance grade 5).

Also, 3,268 m (2.7%) of the total stopbanks length, the Morrison Road Return Stopbank, was not assessed.

Based on the two RCP scenarios (RCP 6.0 and RCP 8.5), the lower Waikato River could see up to 0.49 m (10-year ARI) and 0.44 m (100-year ARI) rise with projected climate change (RCP 6.0 and RCP 8.5 scenarios to 2101-2120).
The Lower Waikato River main channel Scheme minimum freeboard of 0.3 is less than this maximum average water level rises due to climate change.

To accommodate climate change and retain the current LOS with appropriate freeboard, the DCL's will need to increase. However, raising stopbank heights may not be viable in some areas.

7 Recommendations

The following items are recommended following the performance assessment of the Lower Waikato Main Channel flood protection assets:

1. The identified design flood levels and crest levels for each major stopbank and spillway are adopted.
2. The design standard is formalised as follows:
    a. For the 123.2km of stopbanks designed to withstand river flooding, it is recommended that the existing 2, 10 and 100-year ARI design standards be retained.
3. Rangiriri Spillway performance be reassessed with the performance assessment of the Whangamarino system scheduled to start in the 21/22 financial year.
4. Based on the climate change impact information provided for the Lower Waikato River main channel, much of the existing stopbanks and spillways will require future upgrades to maintain the current Level of Service.
5. Further works are required on the accuracy of surveyed information and asset location.

8 Next Steps

A review of the overall performance and management options for Morrison Rd return stopbanks should be completed.

Initiate the assessment of whether the Aka Aka Otaua Buffer Stopbank is needed, and the design crest level should be for successful operation.

For some stopbank/spillway sections, the performance assessment at the start and end may differ from what is onsite. The coordinates of the first and last link of a stopbank or spillway section should be verified onsite before any asset upgrade is carried out.

Stopbank upgrades for 10.6 km that are at a performance grade of 4 or 5 be added into the upgrade capital works programme.

References

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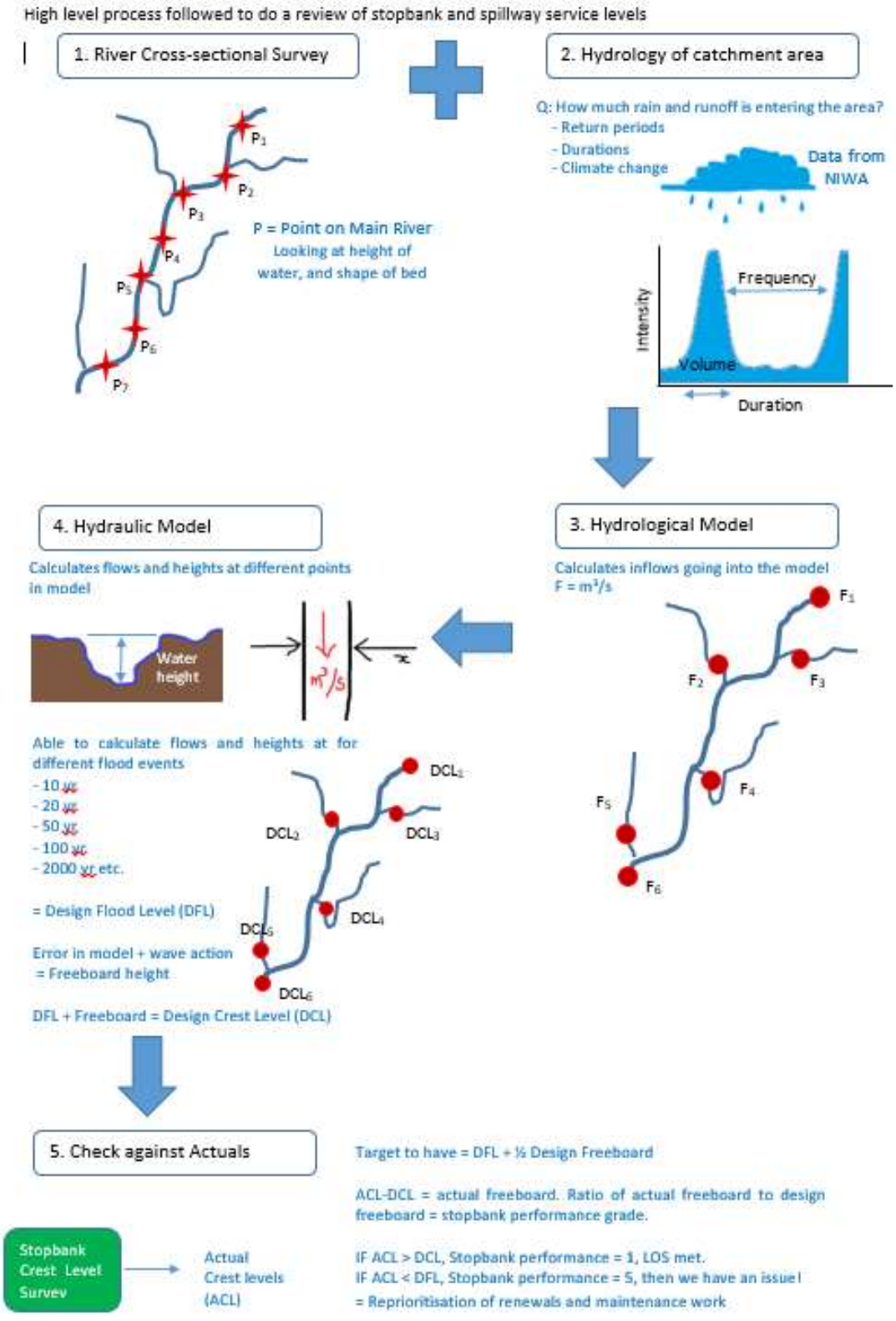
Appendix 1: Scheme Review Process Schematic

High level process followed to do a review of stop bank and spillway service levels

Figure 8: Scheme Review Process Schematic



Appendix 2: Stopbank Performance Grade

Figure 9: Map showing stopbank asset performance grade from current assessment

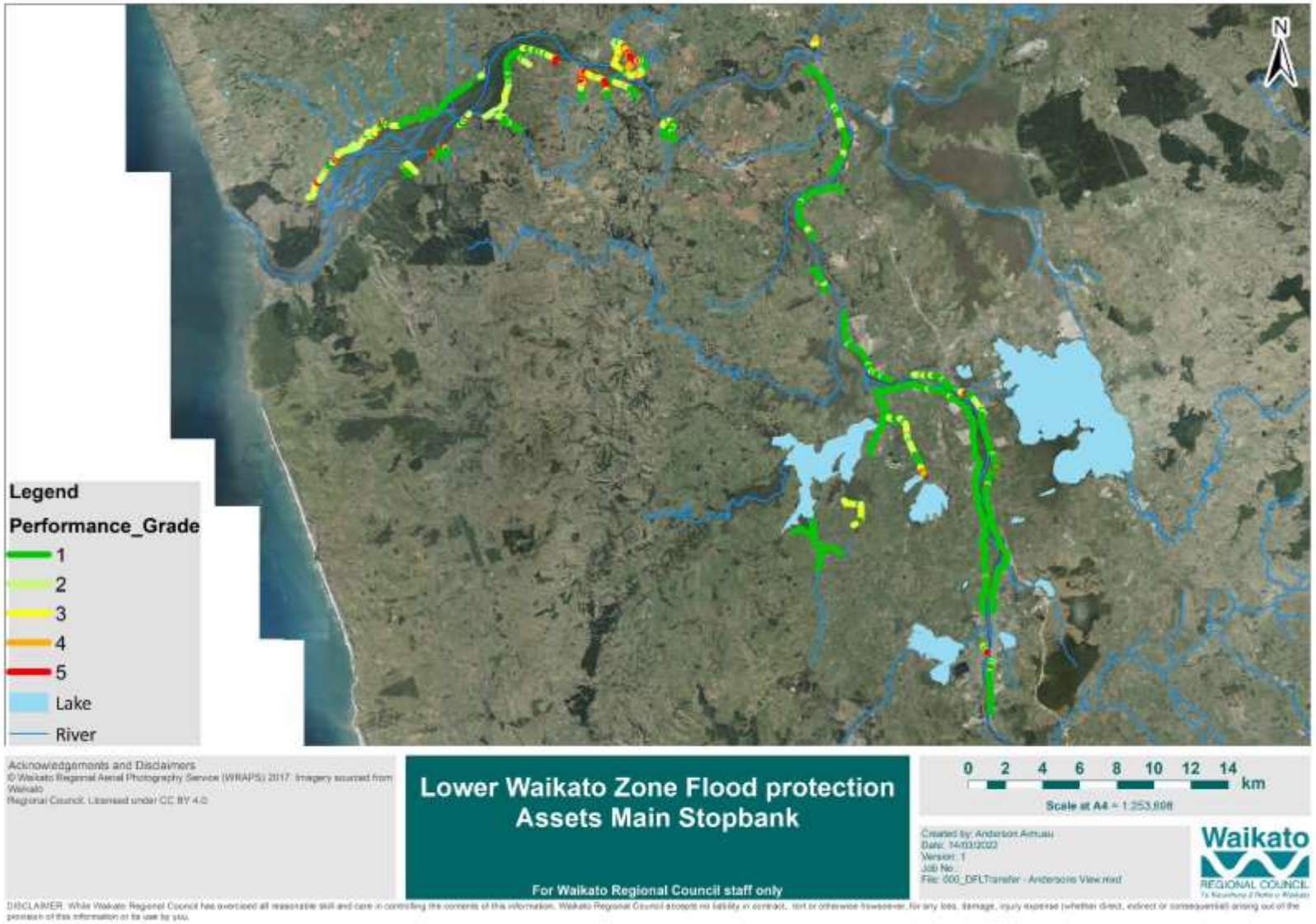
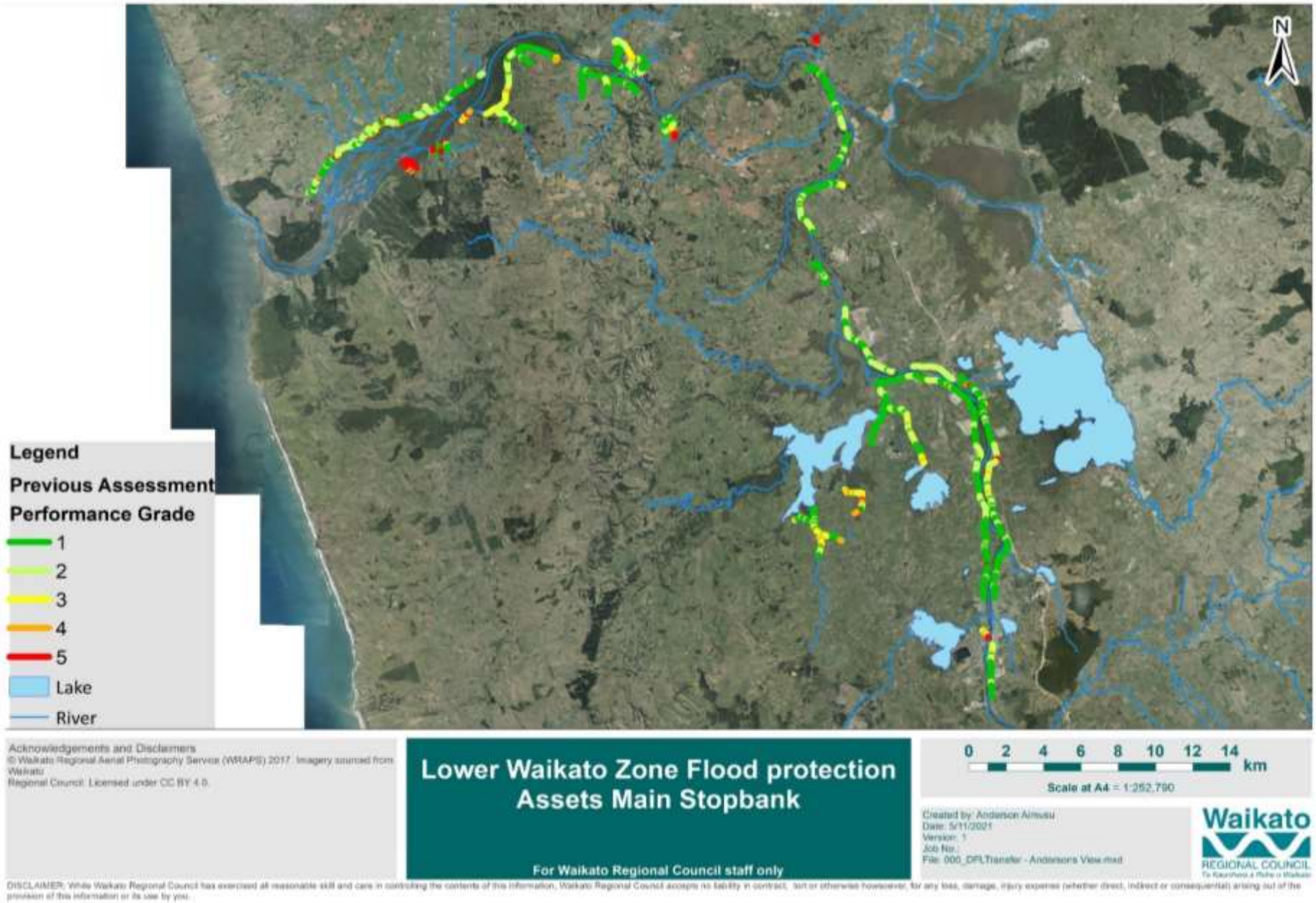


Figure 10: Map showing stopbank asset performance grade from 2009 assessment



Appendix 3: Water level profile data

Table 7: Waikato River flood water level profiles

Chainage	Cross Section	Comment	1959		1983		2009		2021	
			10-yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI
14464	15		2.10	2.71	2.10	2.80	2.15	2.34	2.41	2.75
14927	16		2.18	2.78	2.15	2.85	2.15	2.40	2.43	2.77
15209	17		2.22	2.82	2.18	2.88				
15712	17A		2.30	2.90	2.24	2.94	2.16	2.58	2.49	2.86
16174	18		2.37	2.97	2.29	2.99	2.17	2.62	2.50	2.86
16778	19		2.46	3.06	2.37	3.07	2.17	2.69	2.54	2.92
17422	20	The Elbow	2.56	3.17	2.44	3.20	2.18	2.75	2.59	2.98
17941	21		2.63	3.27	2.50	3.31	2.19	2.80	2.62	3.03
18329	22		2.68	3.34	2.55	3.26			2.70	3.13
18808	23		2.75	3.43	2.61	3.31	2.35	2.98	2.77	3.21
19240	24		2.81	3.51	2.66	3.36			3.04	3.53
19795	25		2.88	3.60	2.73	3.42	2.50	3.17	2.77	3.21
20902	26		3.02	3.78	2.89	3.58	2.67	3.35	3.04	3.53
21396	26B		3.09	3.84	2.96	3.65				
21566	26A		3.11	3.86	2.98	3.67	2.76	3.43		
22672	27A		3.26	4.00	3.14	3.83	2.87	3.54		
23316	27		3.34	4.08	3.23	3.92	2.95	3.63	3.77	4.44
23849	28		3.42	4.15	3.29	3.99	3.02	3.72	3.79	4.46
25022	29		3.55	4.31	3.42	4.14	3.17	3.88	3.90	4.58
25468	29A		3.61	4.37	3.47	4.20			3.95	4.63
25871	30A		3.66	4.42	3.52	4.25			3.95	4.63

Chainage	Cross Section	Comment	1959		1983		2009		2021	
			10-yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI
26470	30		3.73	4.50	3.59	4.31	3.24	3.95	3.97	4.65
26923	31		3.78	4.57	3.63	4.35	3.29	4.00	3.99	4.68
27721	31A		3.90	4.65	3.69	4.42	3.36	4.13	4.00	4.67
28558	32		4.03	4.73	3.76	4.50	3.53	4.31	4.12	4.83
29110	33	Tuakau bridge	4.12	4.79	3.81	4.56	3.59	4.36	4.14	4.84
29474	34		4.15	4.84	3.85	4.60				
29840	35		4.19	4.89	3.89	4.64	3.71	4.53	4.20	4.91
30092	36		4.22	4.92	3.92	4.67				
30493	37		4.26	4.97	3.96	4.72	3.78	4.61	4.25	4.97
30940	37A		4.31	5.03	4.01	4.77	3.82	4.65	4.25	4.97
31437	38		4.36	5.09	4.05	4.84	3.87	4.69	4.28	5.00
31974	39		4.44	5.15	4.11	4.90	3.93	4.76	4.33	5.05
32570	40		4.53	5.22	4.18	4.96	4.01	4.85	4.37	5.10
33221	41		4.63	5.30	4.25	5.03	4.08	4.92	4.42	5.14
33629	42		4.69	5.37	4.30	5.07				
33874	43		4.73	5.41	4.32	5.10	4.17	5.03	4.49	5.22
34393	44		4.82	5.52	4.41	5.20	4.23	5.11	4.51	5.23
34920	45		4.88	5.58	4.46	5.26	4.33	5.22	4.62	5.37
35325	46		4.95	5.64	4.52	5.31	4.38	5.28	4.61	5.34
35689	47		5.00	5.69	4.58	5.40	4.41	5.34	4.66	5.41
35888	48		5.03	5.72	4.62	5.45	4.48	5.40	4.70	5.47
36672	49		5.15	5.84	4.76	5.64	4.56	5.48	4.79	5.57
37511	50		5.27	5.97	4.91	5.83	4.63	5.55	4.87	5.63
38044	51		5.34	6.10	4.95	5.87	4.69	5.61	4.86	5.61
38122	52		5.35	6.12	4.96	5.88	4.70	5.62	4.92	5.69

Chainage	Cross Section	Comment	1959		1983		2009		2021	
			10-yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI
38538	53	Mangatawhiri River	5.40	6.22	4.99	5.91	4.73	5.66	4.95	5.73
39007	54		5.46	6.27	5.03	5.95			4.95	5.73
39106	55		5.48	6.28	5.04	5.96	4.78	5.70	4.99	5.76
39933	56		5.58	6.37	5.11	6.03	4.88	5.79	5.04	5.81
40492	57A		5.66	6.45	5.16	6.08	4.98	5.90	5.06	5.82
40557	57	Mercer wharf	5.66	6.45	5.16	6.08			5.16	5.93
41251	57B		5.75	6.54	5.22	6.14	5.12	6.07	5.16	5.93
41747	58		5.81	6.61	5.26	6.19	5.19	6.14	5.29	6.08
42145	58A		5.86	6.73	5.32	6.26	5.30	6.28	5.37	6.18
42385	59	Whangamarino River	5.89	6.80	5.36	6.30			5.42	6.23
42611	60		5.92	6.82	5.40	6.34	5.38	6.35	5.42	6.23
43211	60A		6.00	6.88	5.49	6.45	5.42	6.38	5.44	6.24
44016	61A		6.10	6.97	5.61	6.58	5.60	6.57	5.57	6.39
44681	61		6.18	7.04	5.71	6.69	5.70	6.68		
	61/1	Meremere	6.18	7.04	5.71	6.69	5.70	6.68	5.64	6.46
45444	62		6.28	7.13	5.82	6.81	5.82	6.81	5.70	6.51
46128	62A		6.35	7.20	5.90	6.88	5.93	6.90	5.70	6.51
46398	63		6.38	7.23	5.93	6.91			5.80	6.62
	63/1		6.38	7.23	5.93	6.91			5.89	6.71
46613	64		6.40	7.25	5.96	6.93			5.97	6.78
47033	64A		6.44	7.29	6.01	6.98	6.04	7.02		
47546	65		6.49	7.35	6.06	7.02	6.09	7.05		
47869	65/1		6.53	7.38	6.09	7.05				
	66		6.53	7.38	6.09	7.05				
48361	66A		6.59	7.43	6.14	7.09	6.17	7.12	6.01	6.81

Chainage	Cross Section	Comment	1959		1983		2009		2021	
			10-yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI
48743	67		6.64	7.47	6.18	7.12	6.23	7.19		
48991	68	Punga Stream	6.67	7.49	6.21	7.14	6.26	7.23		
	68A		6.67	7.49	6.21	7.14	6.26	7.23	6.10	6.92
49299	68B		6.71	7.52	6.24	7.16	6.27	7.24	6.13	6.94
49419	69		6.72	7.54	6.26	7.17				
49648	69A		6.75	7.56	6.28	7.19	6.32	7.29	6.17	6.98
49809	70		6.77	7.58	6.30	7.22	6.33	7.29		
49909	70A		6.78	7.59	6.31	7.23			6.22	7.03
50148	70B		6.82	7.62	6.35	7.26				
50531	71		6.86	7.65	6.40	7.30	6.42	7.38	6.28	7.08
51016	71A		6.90	7.69	6.46	7.36	6.50	7.45	6.36	7.17
51337	72		6.93	7.72	6.50	7.40	6.53	7.47	6.40	7.21
51801	72A		6.98	7.76	6.56	7.46	6.57	7.50	6.44	7.24
52138	72B		7.00	7.78	6.59	7.49				
52424	73A		7.03	7.81	6.64	7.53	6.62	7.53	6.55	7.35
52741	73B		7.07	7.84	6.69	7.58				
53248	73		7.11	7.89	6.75	7.63	6.69	7.60	6.67	7.47
53462	74A		7.14	7.93	6.79	7.67				
53554	74	Orton	7.14	7.93	6.79	7.67				
53912	75		7.17	7.98	6.84	7.72				
54177	76		7.19	8.01	6.89	7.76	6.80	7.69	6.79	7.59
54439	77		7.22	8.04	6.94	7.80				
54731	78		7.24	8.08	7.00	7.84	6.89	7.77	6.85	7.64
55038	79		7.27	8.12	7.06	7.89				
55088	79A		7.27	8.12	7.06	7.89				

Chainage	Cross Section	Comment	1959		1983		2009		2021	
			10-yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI
55347	80		7.30	8.16	7.11	7.93	6.95	7.81	6.93	7.71
55570	81		7.32	8.19	7.15	7.96				
55856	82		7.35	8.23	7.21	8.01	7.03	7.87	7.02	7.80
56066	83	Te Kauwhata intake	7.37	8.26	7.24	8.04				
56193	84		7.39	8.28	7.26	8.06				
56315	85		7.40	8.30	7.28	8.08				
56509	86		7.42	8.32	7.31	8.11	7.10	7.91	7.12	7.90
56791	87		7.45	8.36	7.35	8.15				
56997	88		7.48	8.39	7.38	8.18	7.15	7.95	7.17	7.95
57378	89	Opuatia Stream	7.52	8.44	7.43	8.23				
57631	90		7.55	8.47	7.47	8.27	7.28	8.07	7.29	8.08
57757	91		7.56	8.47	7.48	8.28				
58168	92		7.61	8.51	7.54	8.33				
58487	93		7.65	8.54	7.58	8.37	7.40	8.17	7.39	8.18
58706	94		7.68	8.56	7.61	8.40				
58875	95		7.70	8.58	7.63	8.42	7.45	8.21	7.48	8.27
58945	96A		7.71	8.59	7.64	8.43	7.47	8.23	7.52	8.31
59012	96		7.72	8.60	7.65	8.44				
59367	97		7.77	8.64	7.70	8.49				
59602	98		7.80	8.67	7.73	8.52	7.53	8.28	7.57	8.35
59855	99		7.83	8.70	7.77	8.56			7.68	8.46
60034	100A		7.85	8.72	7.80	8.59	7.60	8.36	7.68	8.46
60112	100	Whangape Stream	7.86	8.73	7.81	8.60				
60322	101		7.89	8.75	7.84	8.63	7.64	8.40	7.72	8.50
60782	102		7.95	8.80	7.90	8.70				

Chainage	Cross Section	Comment	1959		1983		2009		2021	
			10-yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI
60984	103		7.97	8.82	7.93	8.73	7.71	8.45	7.78	8.56
61225	104		8.00	8.85	7.96	8.77				
61333	105		8.02	8.86	7.98	8.79				
61497	106			8.88	8.00	8.80	7.75	8.49	7.88	8.64
62020	106A			8.94	8.07	8.85	7.80	8.53	7.95	8.72
62505	107			8.99	8.14	8.89				
63049	108			9.05	8.22	8.94	7.98	8.71	8.07	8.84
63529	108A			9.10	8.29	8.99	8.03	8.76	8.24	9.00
64173	109A			9.17	8.38	9.06	8.16	8.89		
64519	109			9.21	8.43	9.10	8.21	8.94		
65138	110A	Rangiriri bridge		9.28	8.51	9.16	8.30	9.03	8.31	9.06
65447	110			9.30		9.19			8.40	9.16
65525	110B	D/S Rangiriri spillway		9.31		9.20			8.45	9.21
	111B			9.31		9.20			8.49	9.26
65607	110C			9.32		9.21	8.38	9.12	8.49	9.26
66483	111			9.44		9.32	8.49	9.27	8.55	9.32
67175	111C	U/S Rangiriri spillway		9.54		9.41	8.55	9.34	8.56	9.35
67635	111E			9.61		9.50	8.61	9.40	8.61	9.40
68016	112			9.66		9.57	8.65	9.46	8.66	9.47
68476	112A			9.72		9.65	8.72	9.55	8.72	9.54
69100	113			9.81		9.76	8.78	9.63	8.77	9.60
69900	113A			9.96		9.92	8.89	9.78	8.88	9.73
70635	114			10.10		10.07	8.98	9.89	8.98	9.85
71135	114A			10.19		10.17	9.04	9.96	9.08	9.97
71240	114B			10.21		10.19	9.20	10.16	9.15	10.05

Chainage	Cross Section	Comment	1959		1983		2009		2021	
			10-yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI
72338	115	Ohinewai		10.41		10.41			9.31	10.24
73163	116			10.58		10.51	9.37	10.36	9.46	10.43
73793	116A			10.71		10.59	9.50	10.52	9.52	10.48
74483	117			10.85		10.68	9.63	10.69	9.52	10.48
74954	118			10.97		10.80	9.68	10.76	9.56	10.52
75339	119	Kimihia floodgate		11.07		10.89	9.87	10.96	9.68	10.67
76317	120	Gun club		11.31		11.02	10.00	11.12	9.82	10.83
76859	120A			11.42		11.14	10.12	11.26	9.93	10.95
77406	121			11.52		11.25	10.19	11.33	10.00	11.03
78396	121A			11.71		11.46	10.33	11.49	10.14	11.20
79492	122	Huntly power station		11.92		11.69	10.46	11.63	10.31	11.38
80212	122A			12.08		11.87	10.57	11.77	10.31	11.38
80854	123	Huntly rail bridge		12.22		12.01	10.65	11.86	10.43	11.53
81487	123A	Tainui bridge		12.35		12.15	10.76	11.97		
82476	124			12.56		12.36	10.93	12.17	10.88	12.04
83236	124A			12.68		12.49	11.02	12.27	10.96	12.13
83646	124B			12.75		12.56	11.09	12.35	11.04	12.21
84131	125			12.83		12.64	11.14	12.40	11.08	12.25
84931	125A			12.98		12.85	11.30	12.59	11.22	12.41
85461	126			13.05		12.99	11.37	12.65	11.30	12.50
86111	126A			13.17		13.11	11.44	12.72	11.39	12.60
87089	127			13.38		13.28	11.57	12.85	11.51	12.73
87547	127A	Mangawara River		13.47		13.38	11.69	13.02	11.61	12.84
88402	128	Taupiri tearooms		13.69		13.58	11.82	13.18	11.70	12.94
89454	129			13.87		13.86	12.00	13.36	11.89	13.17

Chainage	Cross Section	Comment	1959		1983		2009		2021	
			10-yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI
90304	129A			14.02		13.99	12.09	13.47	12.15	13.46
91292	130			14.19		14.15	12.20	13.57	12.15	13.46
92342	130A			14.37		14.30	12.35	13.72	12.31	13.63
93226	131			14.52		14.42	12.53	13.97	12.44	13.81
93946	131A			14.65		14.58	12.66	14.10	12.56	13.95
94449	132	Ngaruawahia		14.75		14.70	12.73	14.18	12.61	13.99

Appendix 4: Lower Waikato River Water Level Profile

Figure 11: Lower Waikato River Water Level Profile for Current Climate

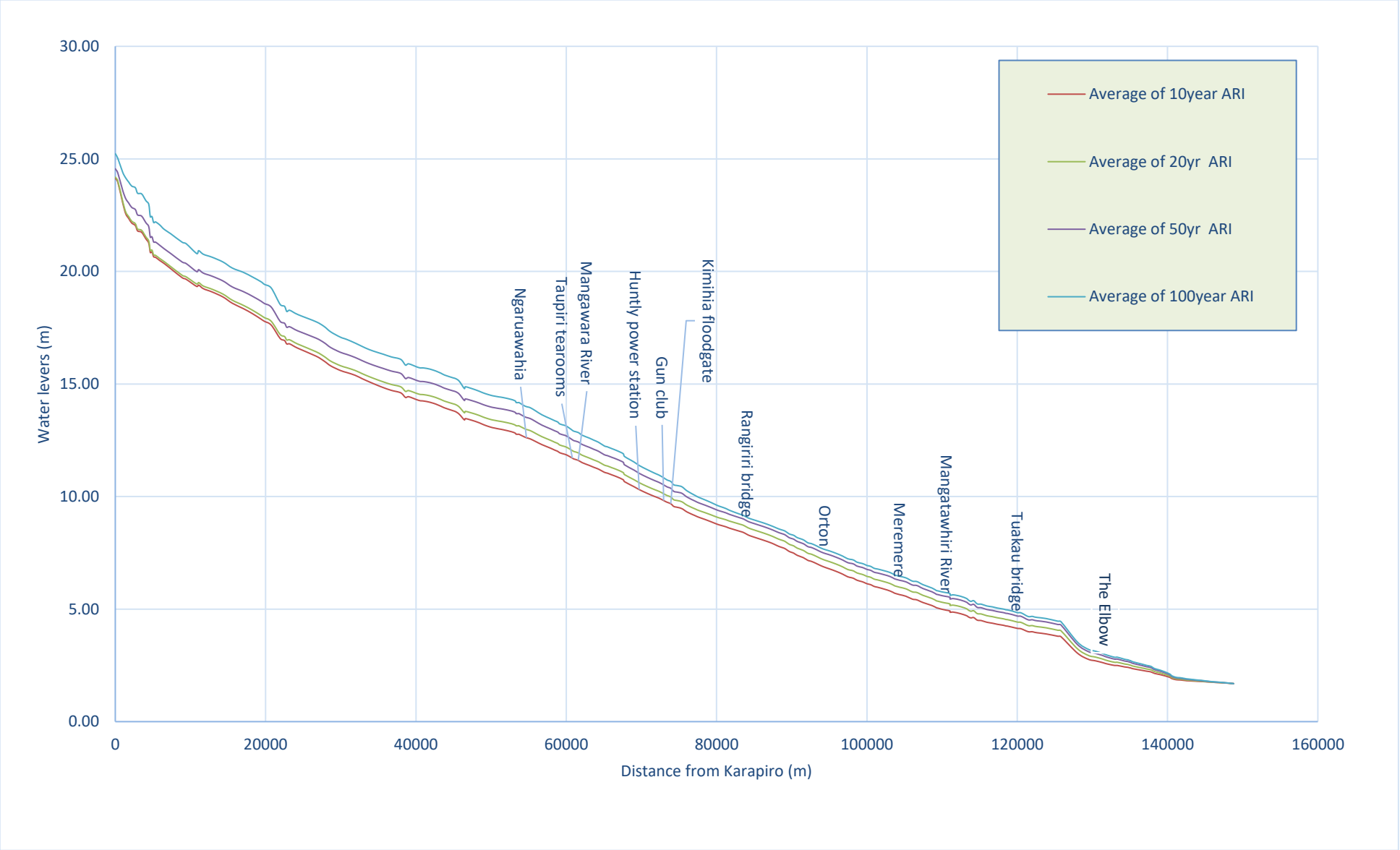


Figure 12: Lower Waikato River Water Level Profile for Current and Future Climate

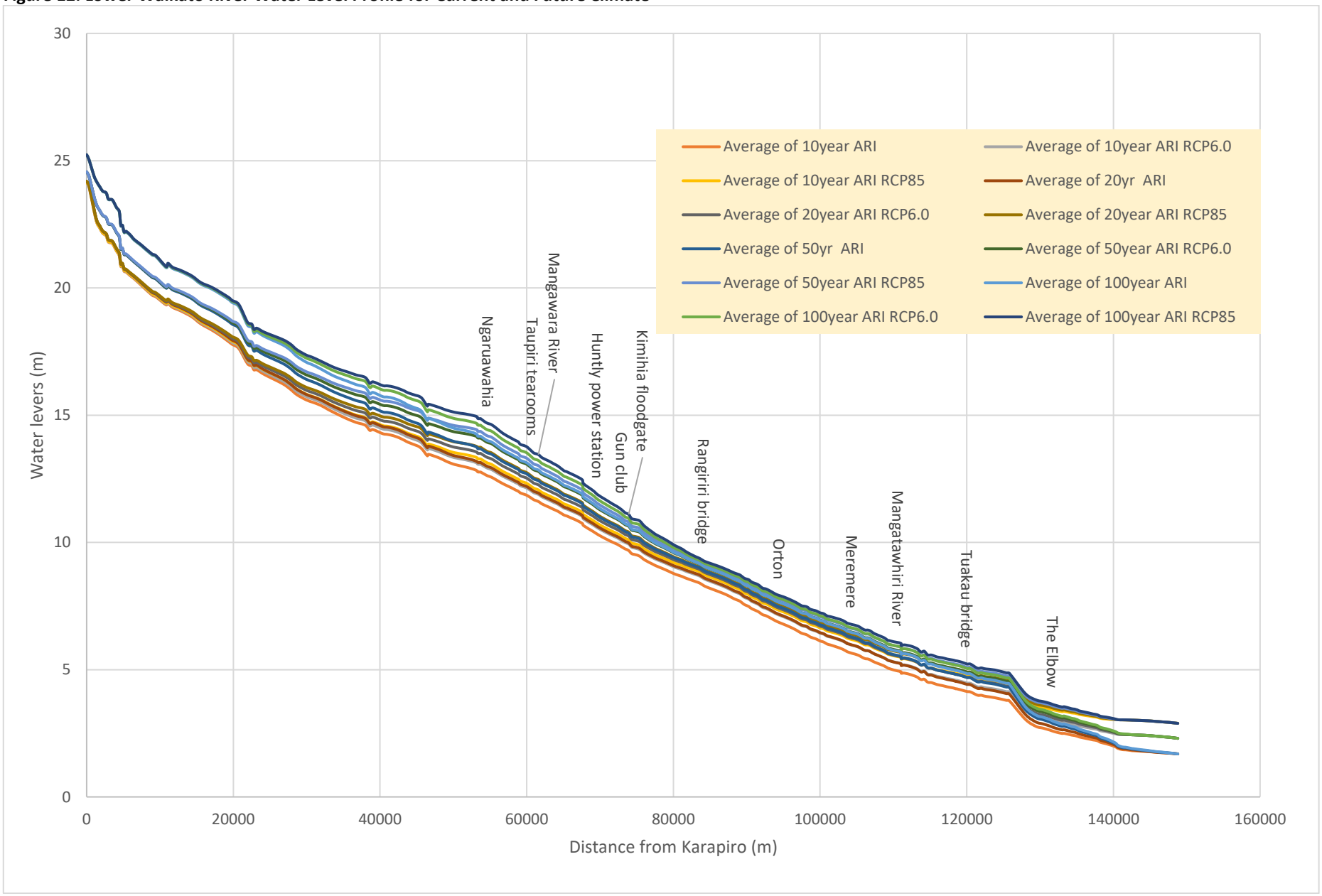


Figure 13: Lower Waikato River Water Level Profile for 10-year Current and Future Climate

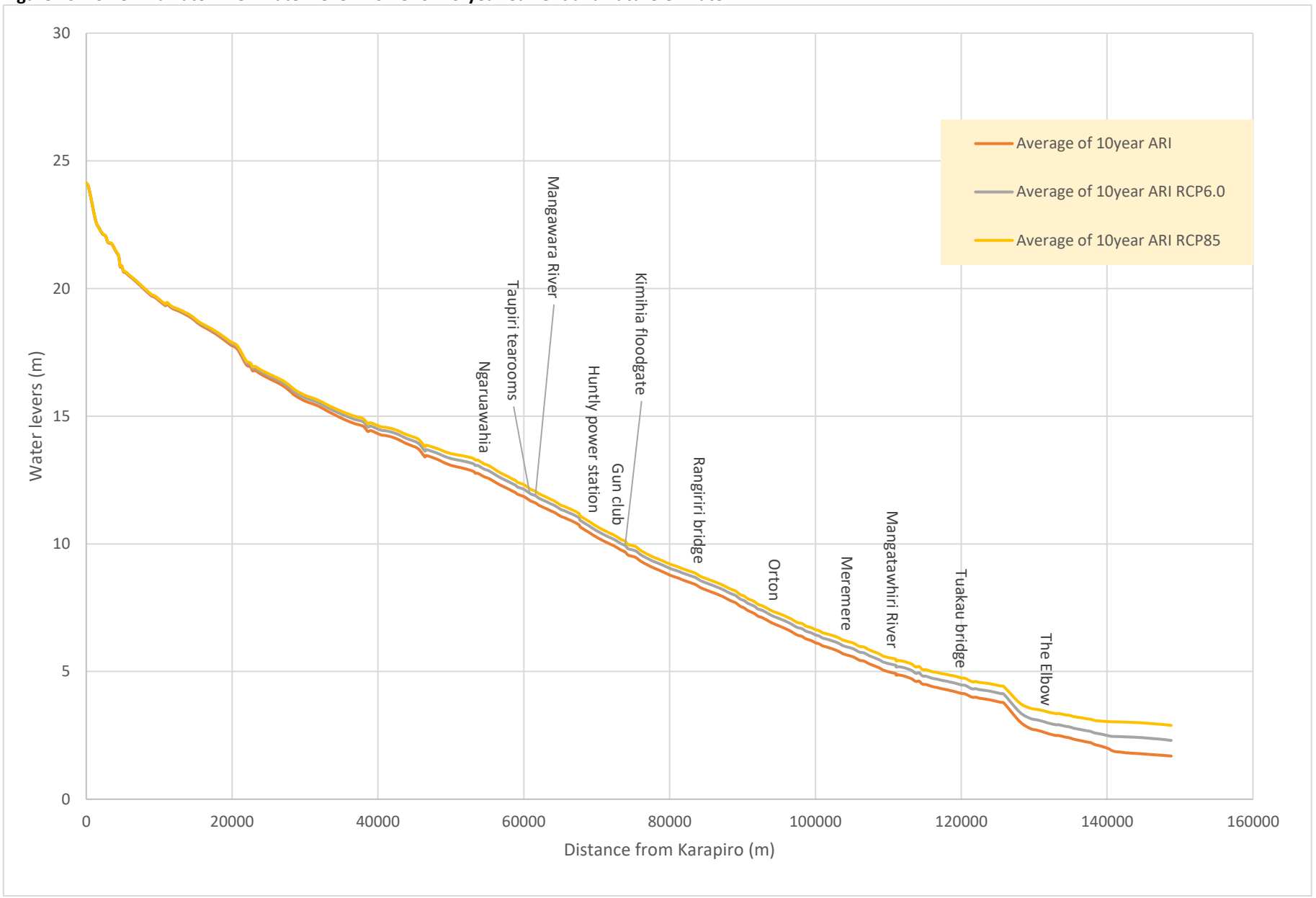


Figure 14: Lower Waikato River Water Level Profile for 20-year Current and Future Climate

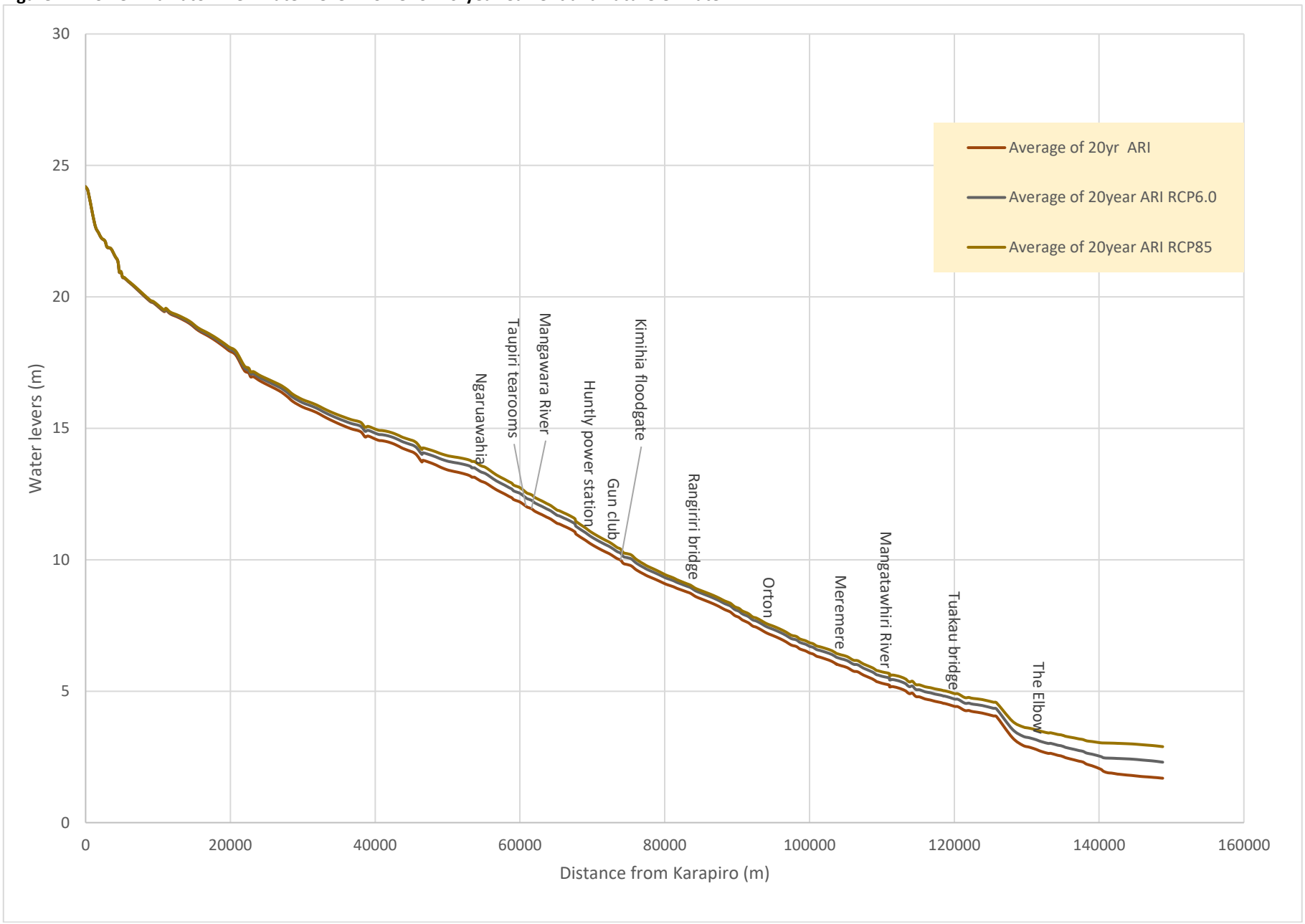


Figure 15: Lower Waikato River Water Level Profile for 50-year Current and Future Climate

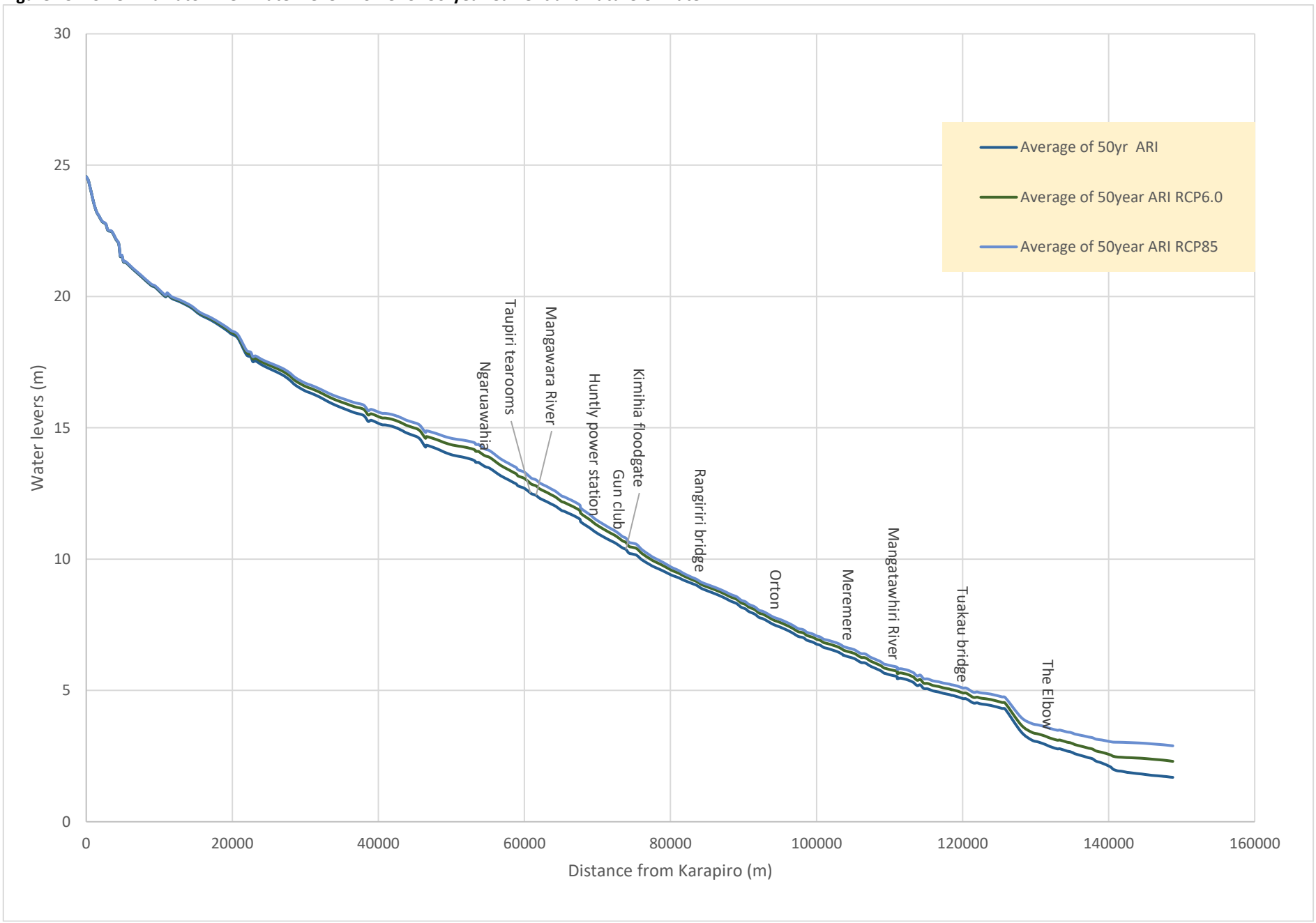
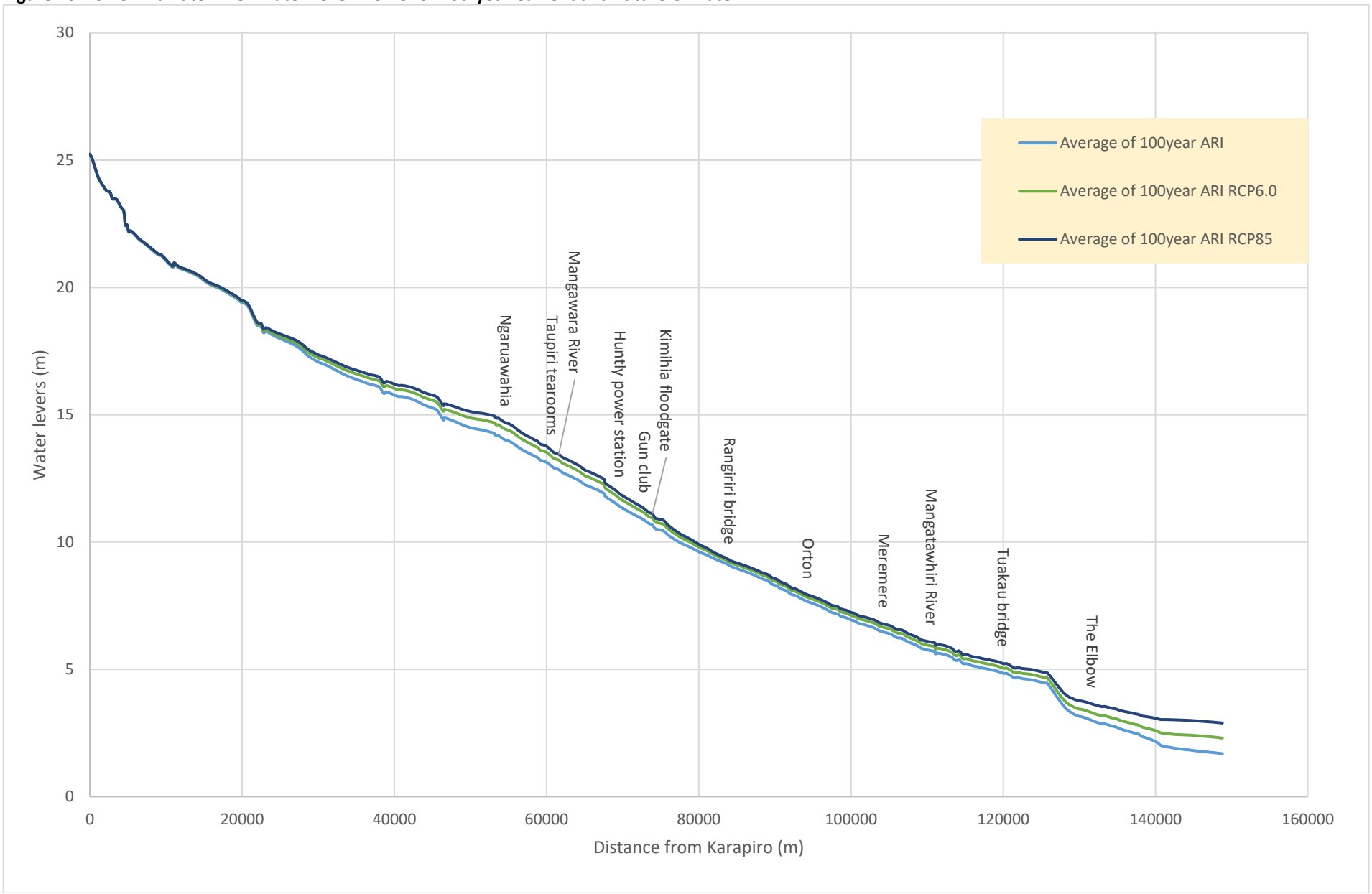


Figure 16: Lower Waikato River Water Level Profile for 100-year Current and Future Climate



Appendix 5: Longitudinal section plots

DFL = Design Flood Level, DCL = Design Crest Level, ACL = Actual (surveyed) Crest Level

Figure 17: Aka Aka Otaua (Mangawhero) Stopbank

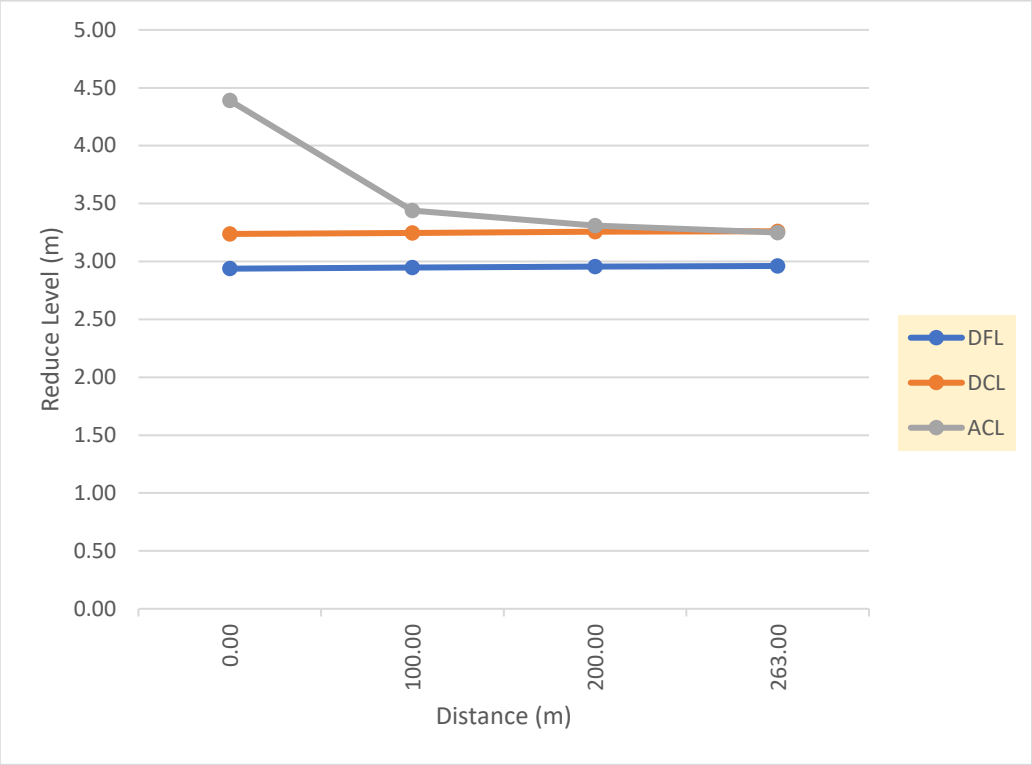


Figure 18: Aka Aka Otaua Buffer SB

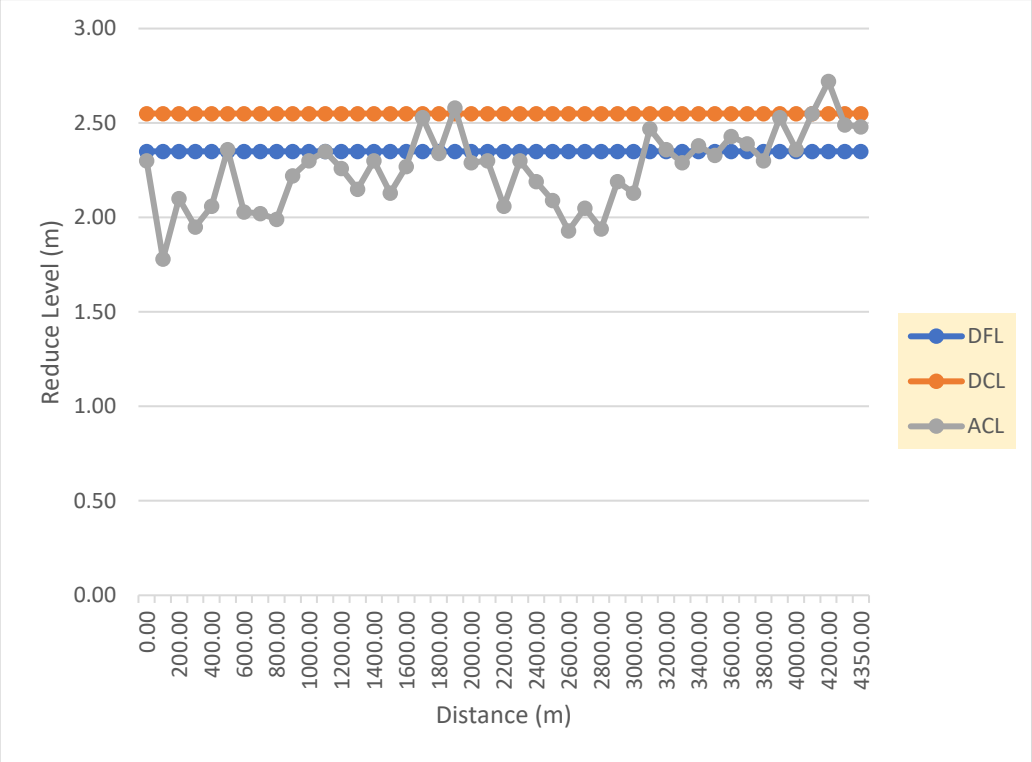


Figure 19: Aka Aka Otaua Stopbank

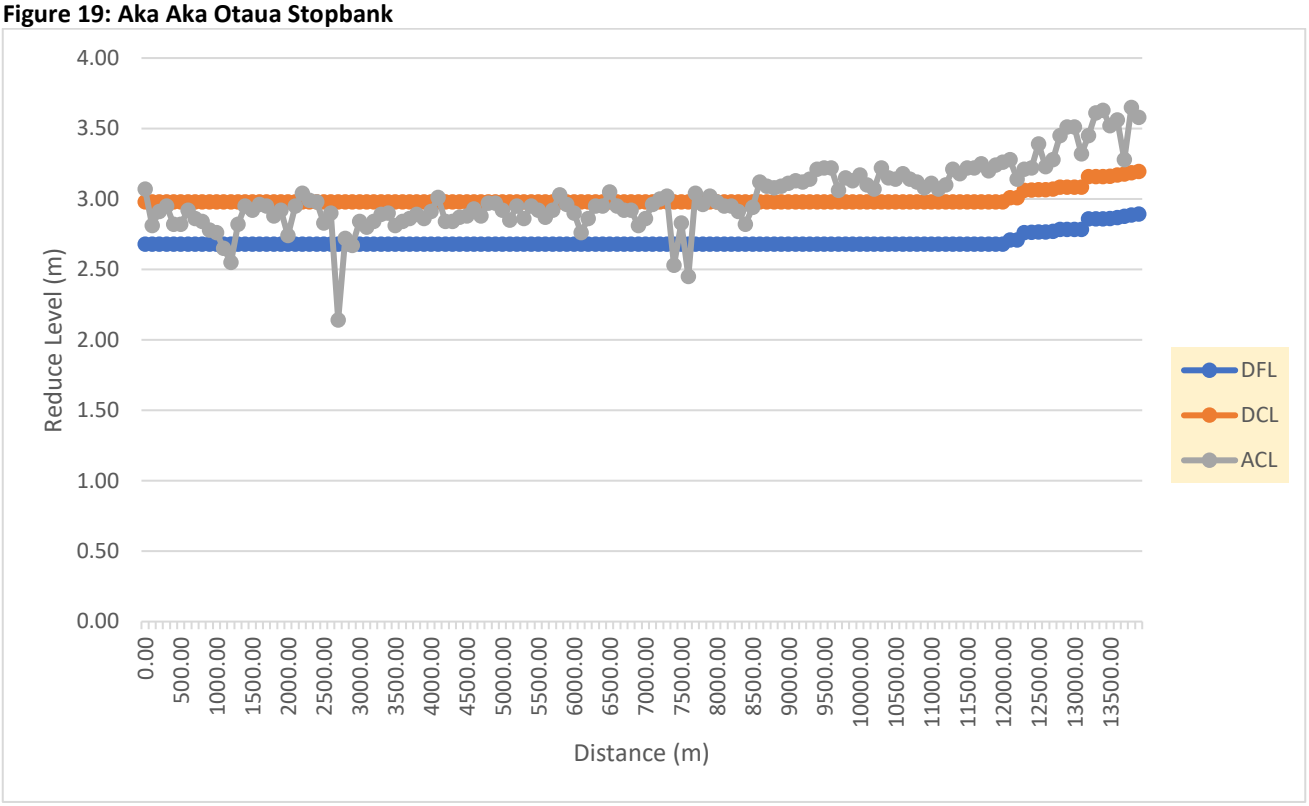


Figure 20: Austins/Waikato Sect Stopbank

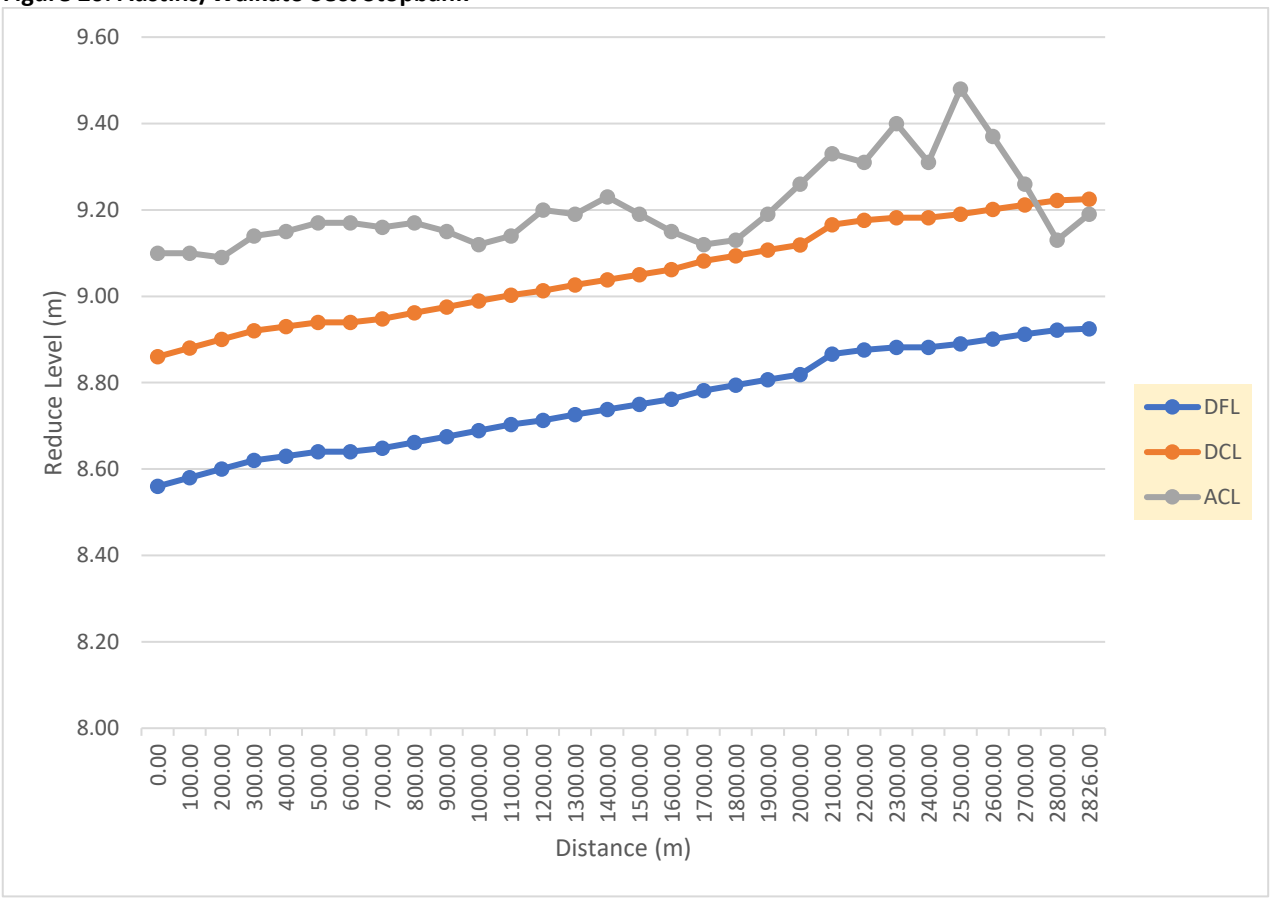


Figure 21: Austins/Whangape Sect Stopbank

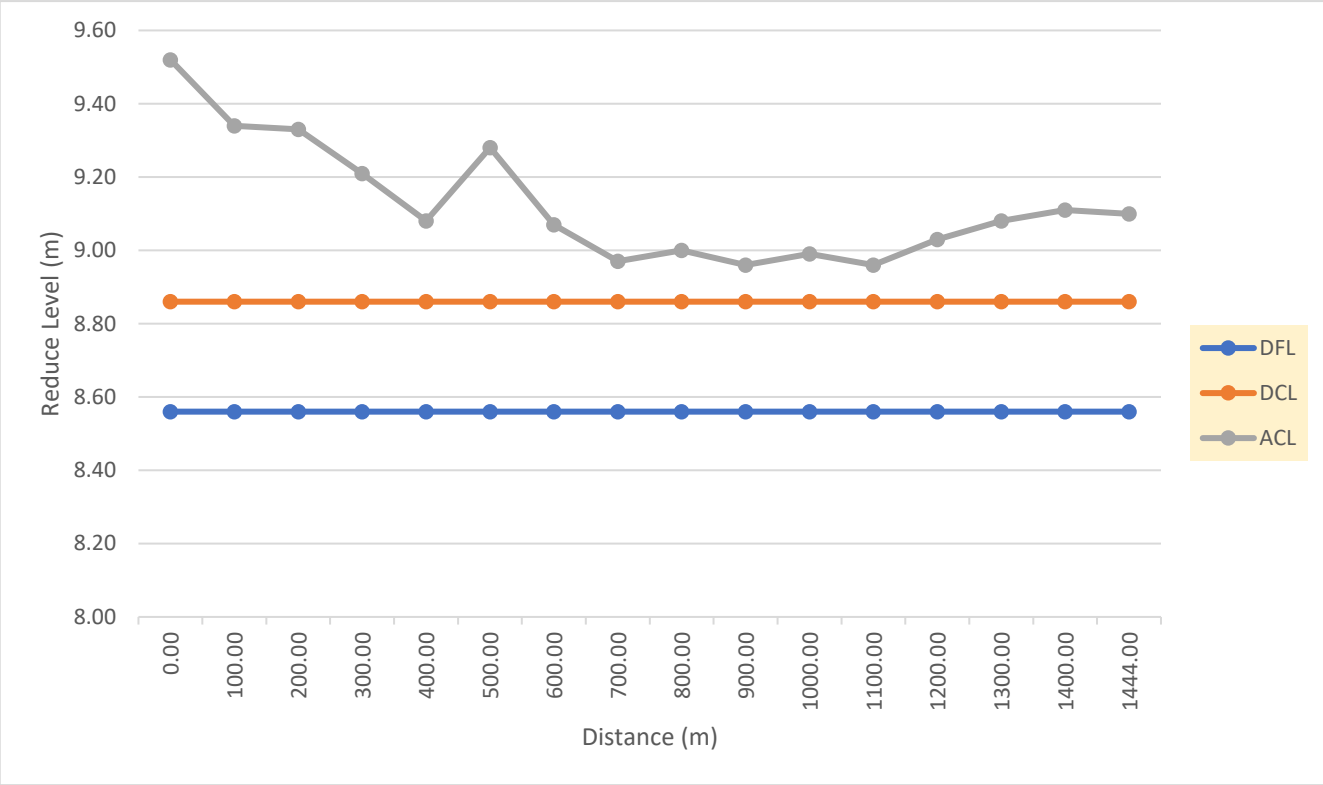


Figure 22: Blairs Sect Stopbank

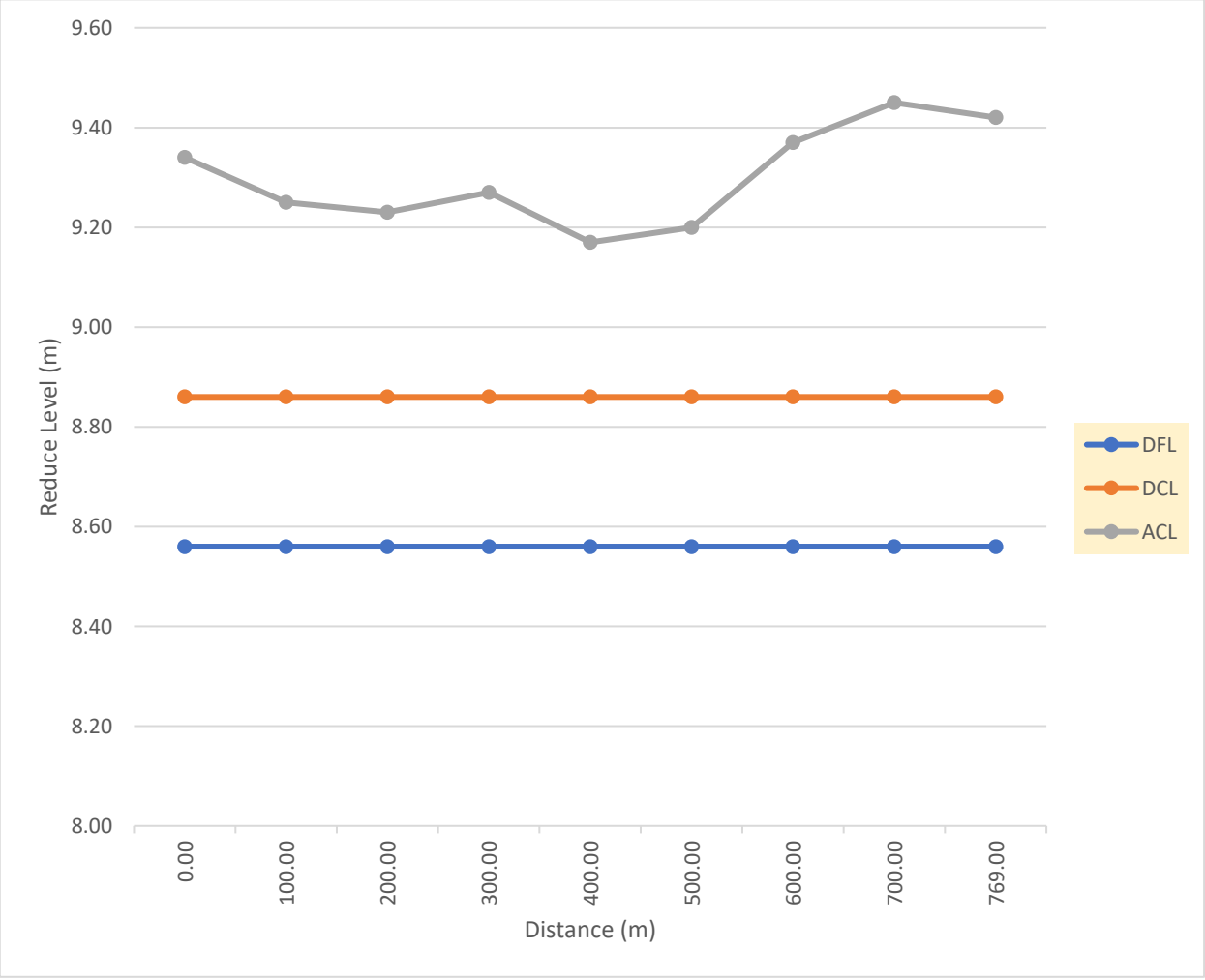


Figure 23: Churchill East Stopbank

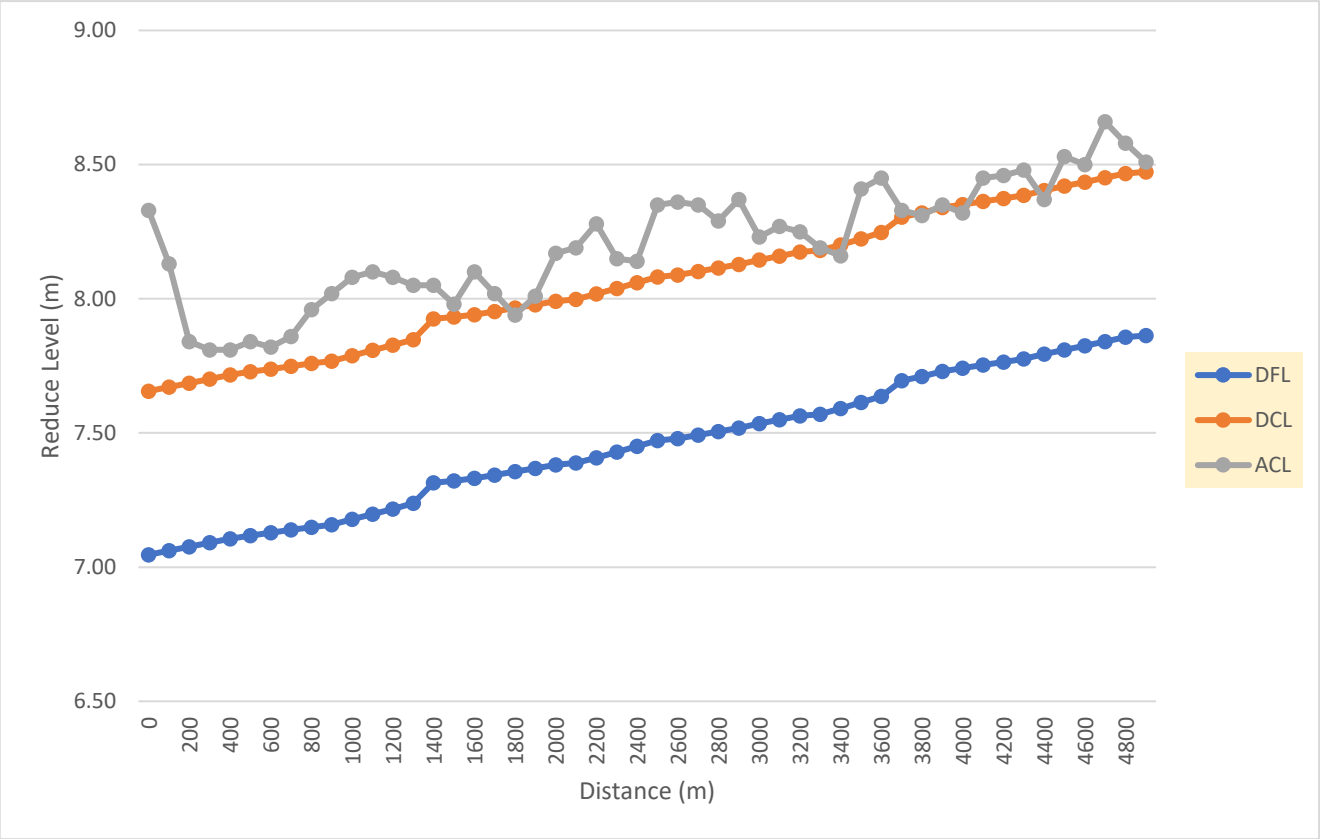


Figure 24: Guests Sect Stopbank

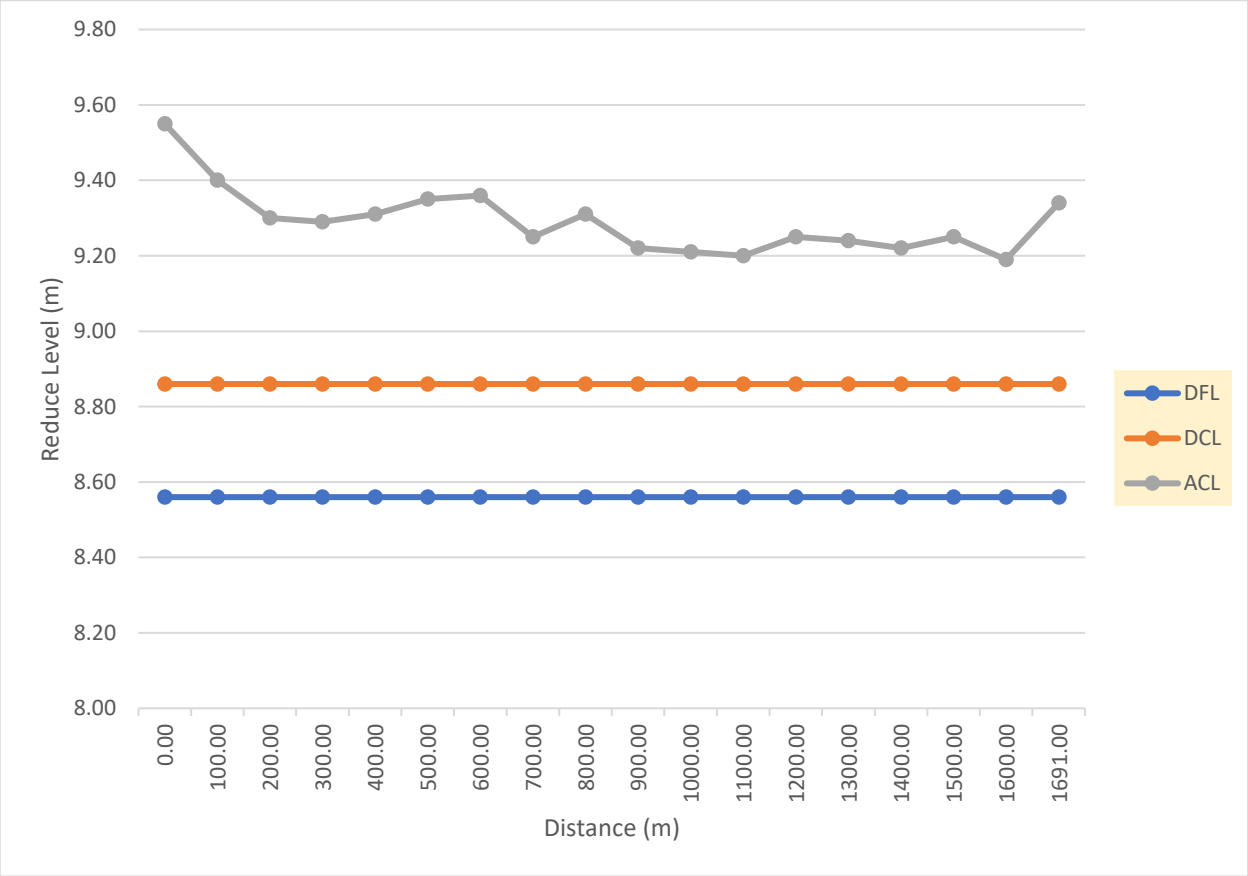


Figure 25: Harris Street Stopbank

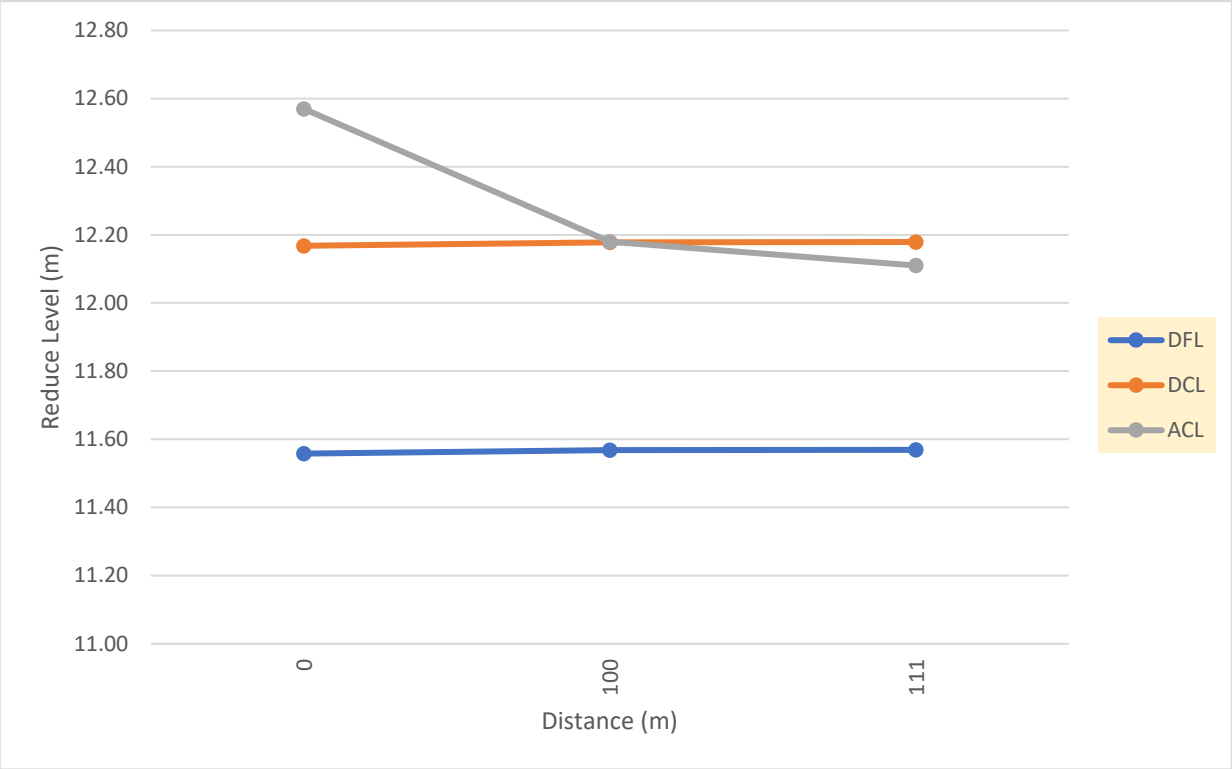


Figure 26: Hills Sect Stopbank

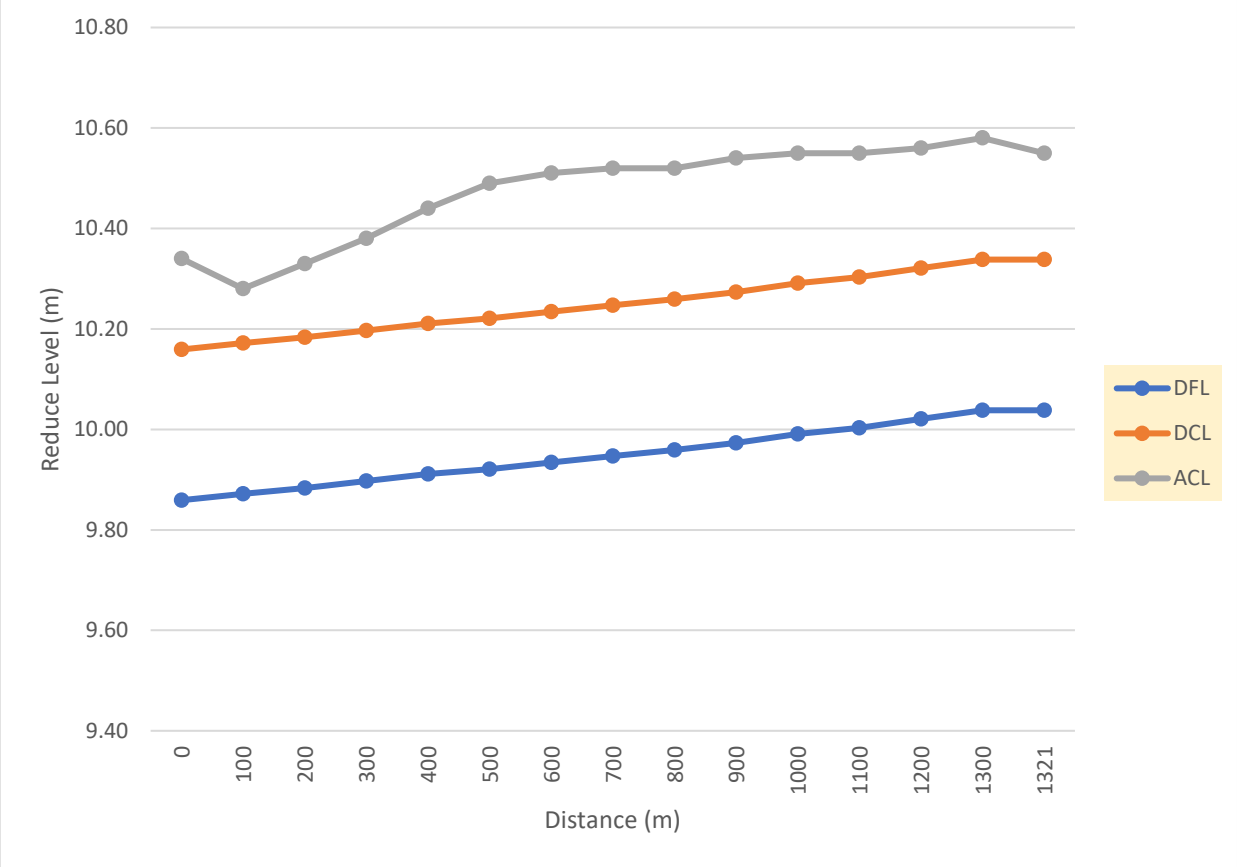


Figure 27: Hly Sth Main Road: Between Tainui BR & Rail BR Stopbank

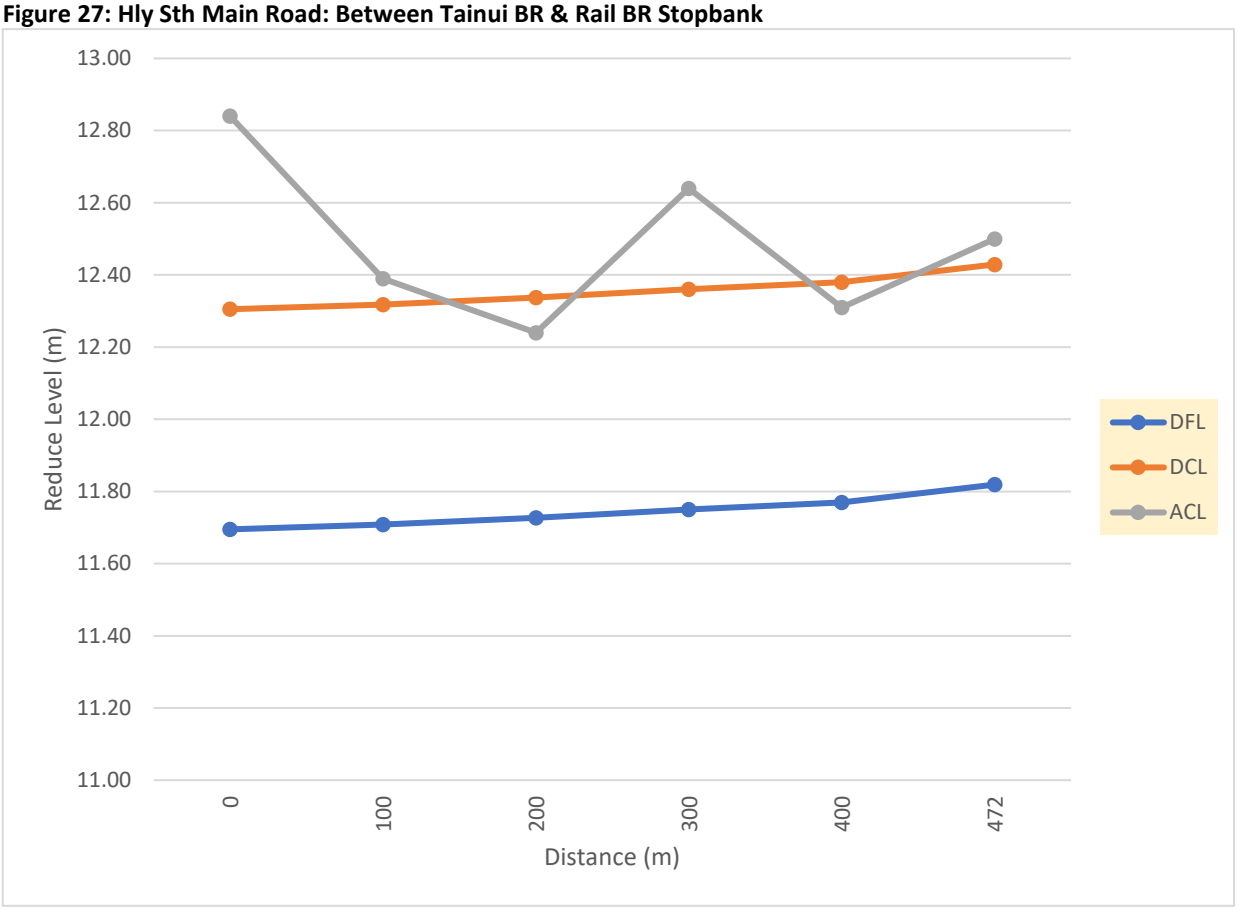


Figure 28: Hly Sth Tainui Bridge Up Stm Stopbank

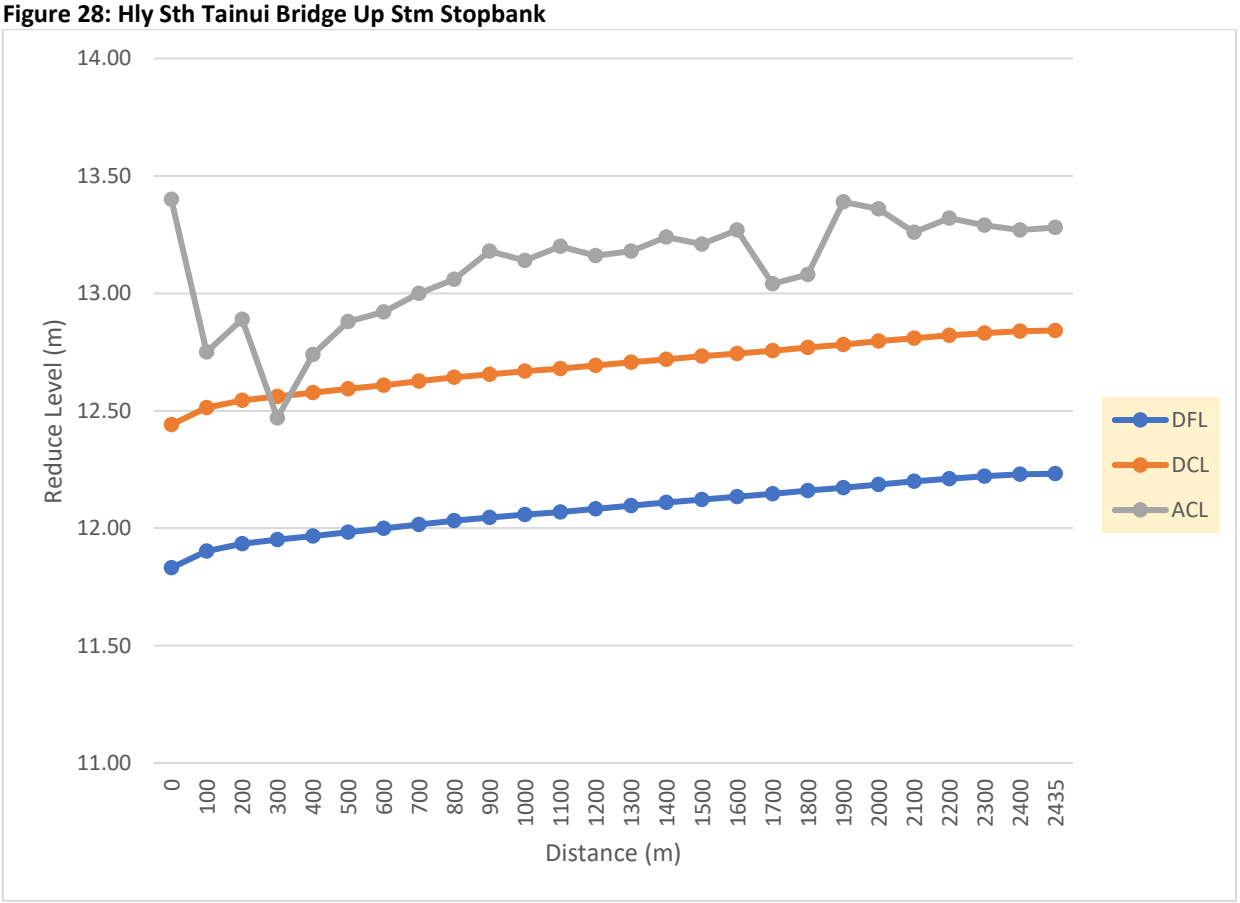


Figure 29: Hora Hora Sect Stopbank

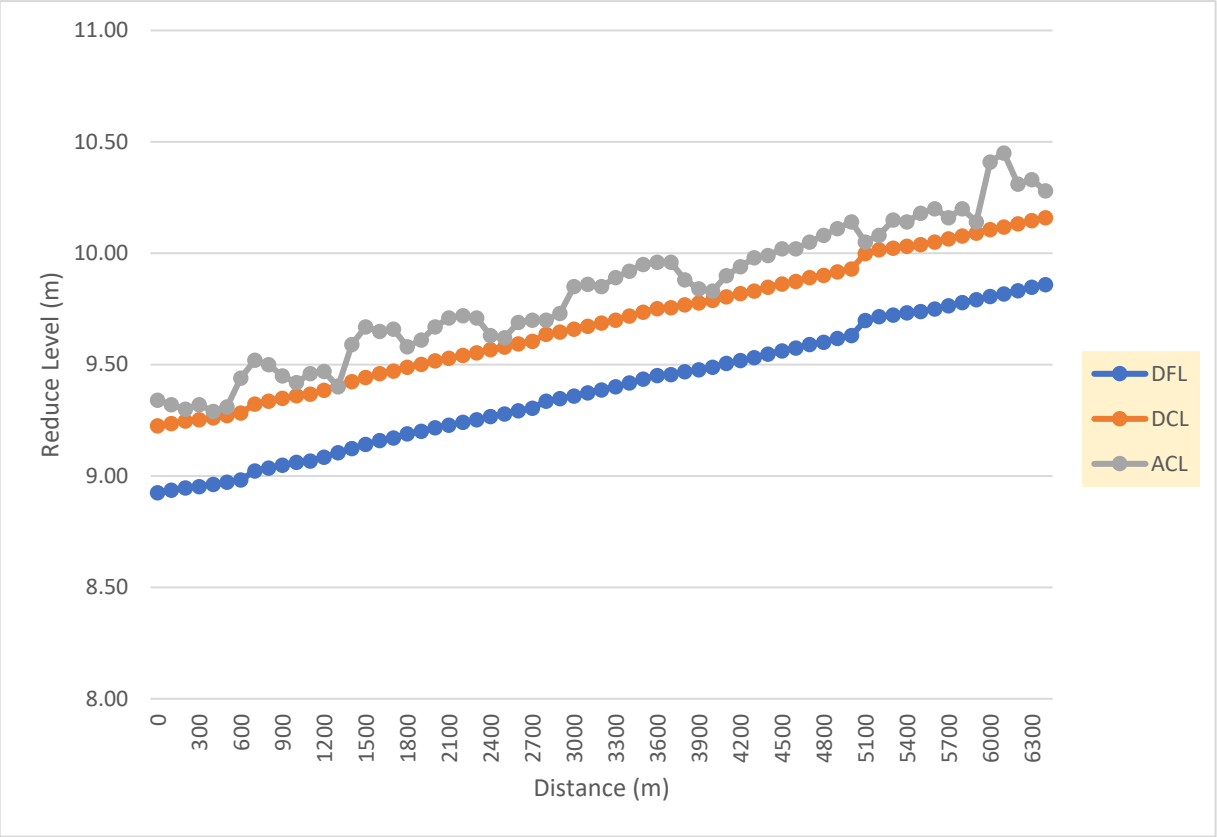


Figure 30: Horseshoe Stopbank

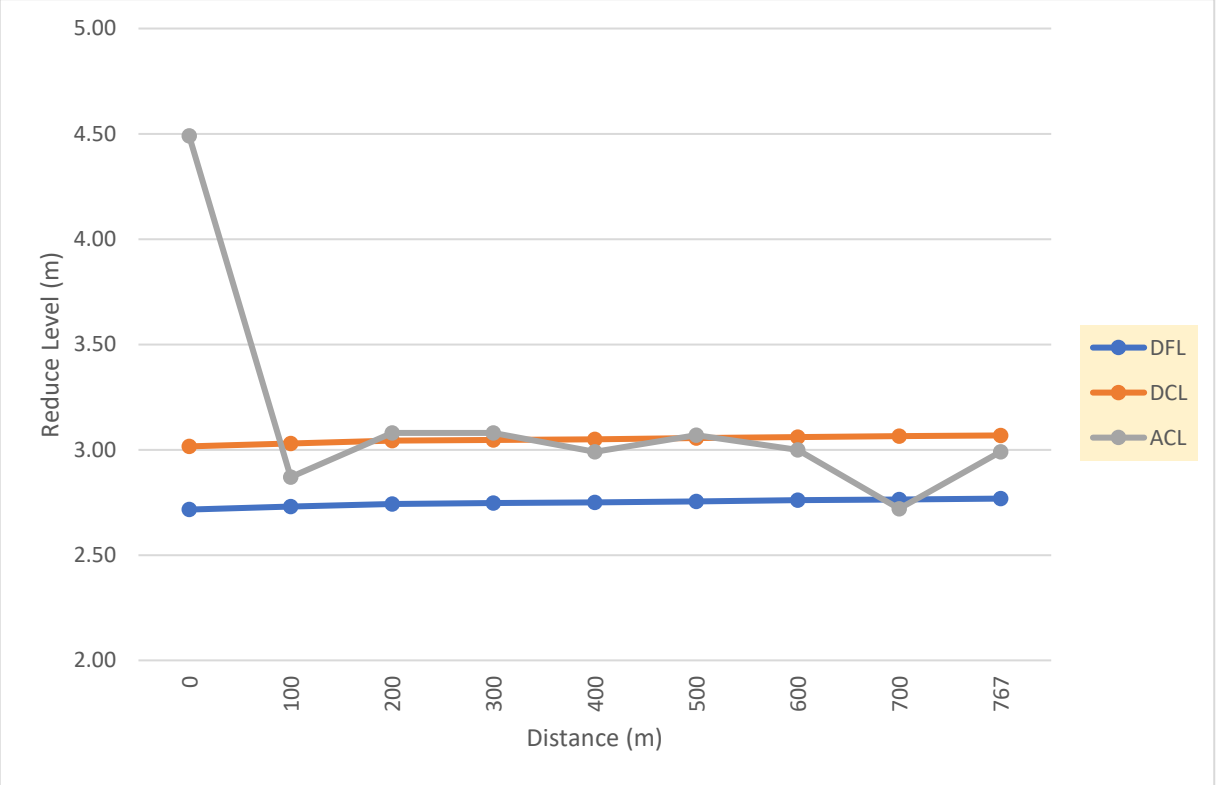


Figure 31: Huntly North Freeboard Stopbank

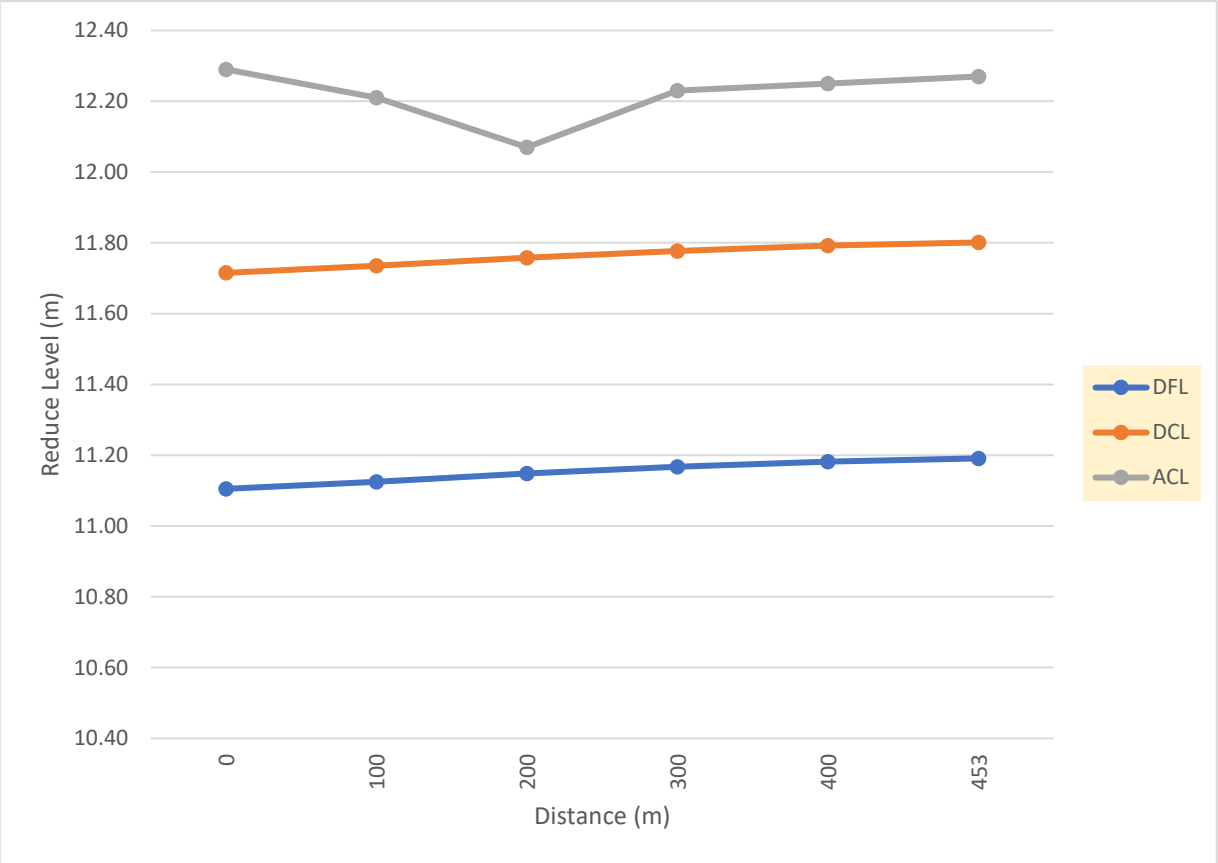


Figure 32: Huntly North Stopbank

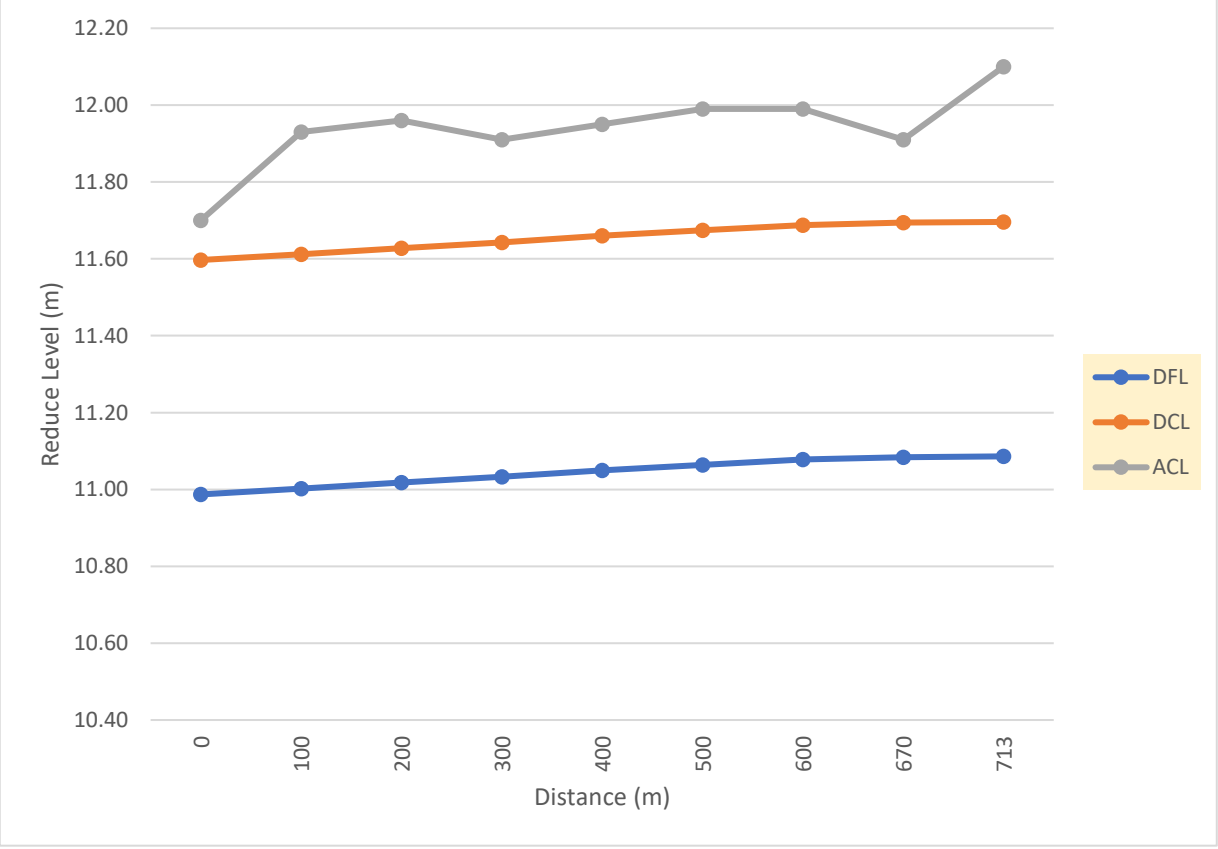


Figure 33: Huntly West Sect Stopbank

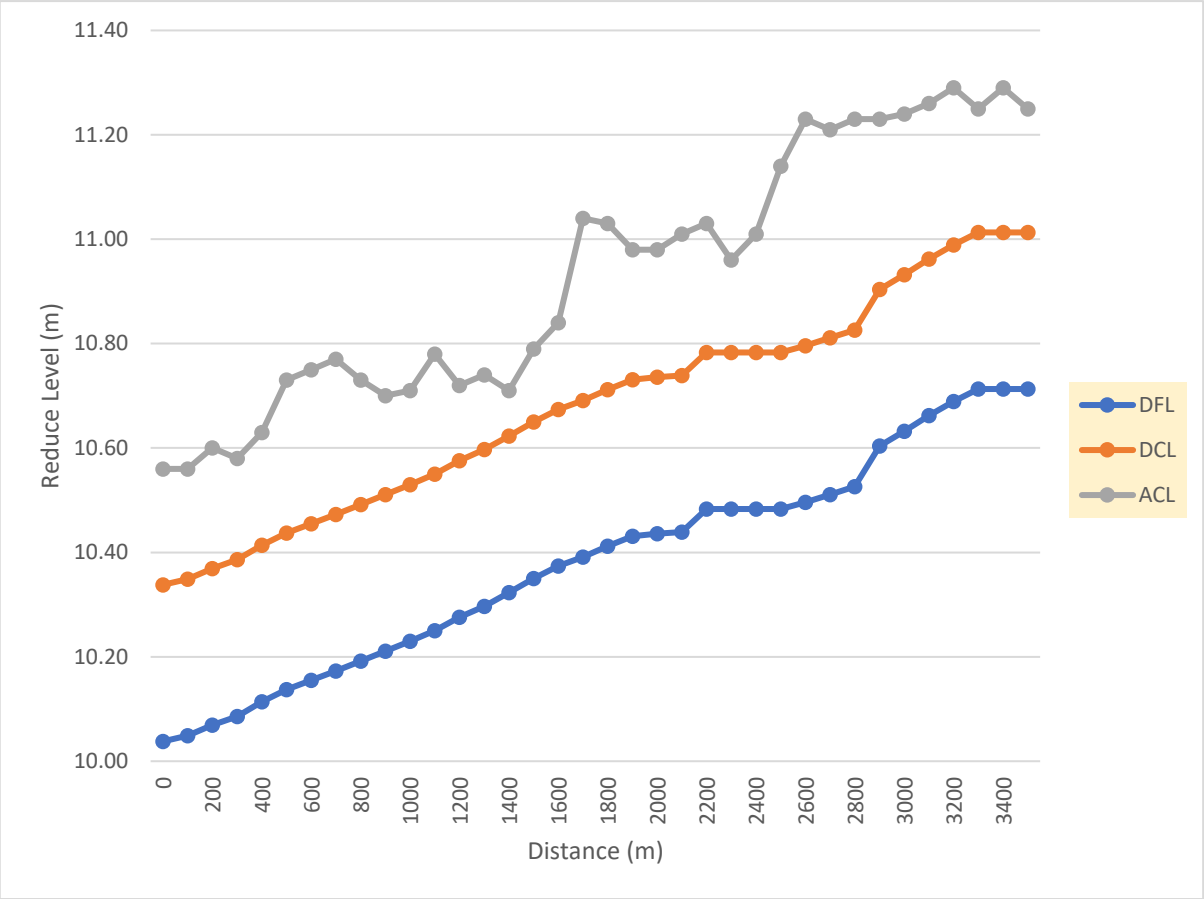


Figure 34: Kimihia Stopbank

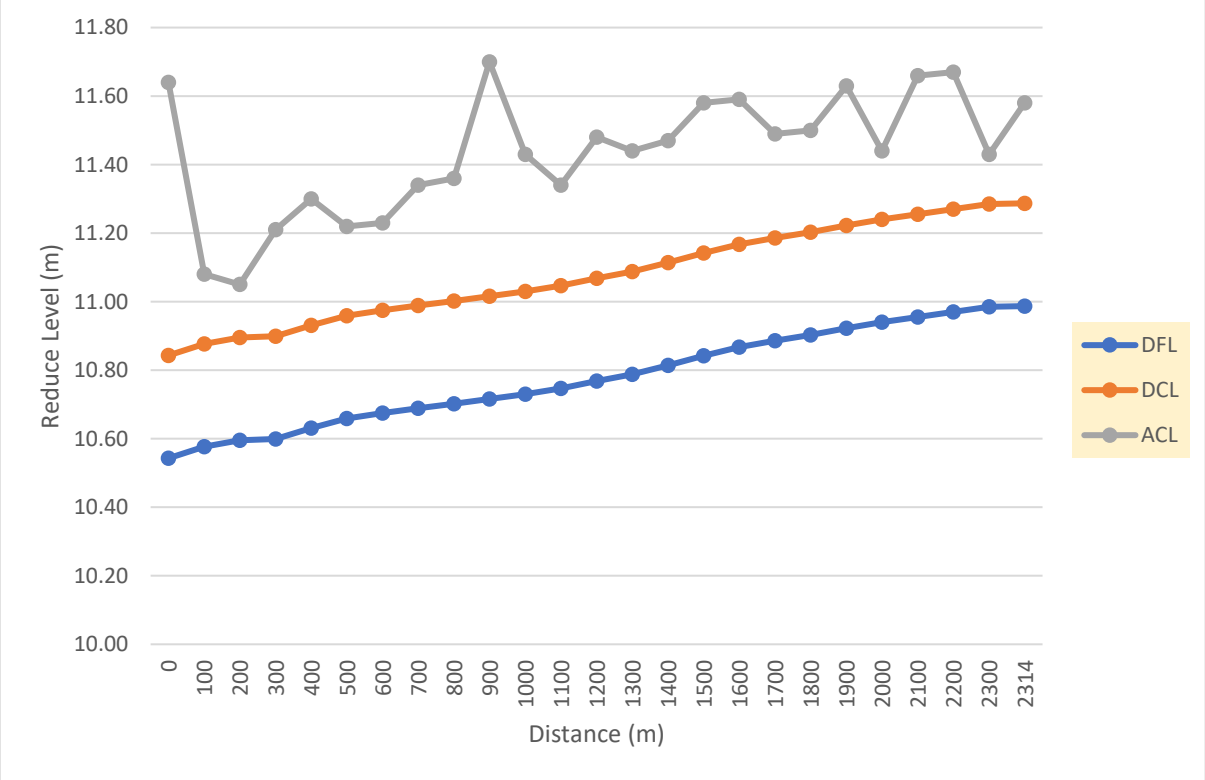


Figure 35: Mercer West Northern Main Stopbank

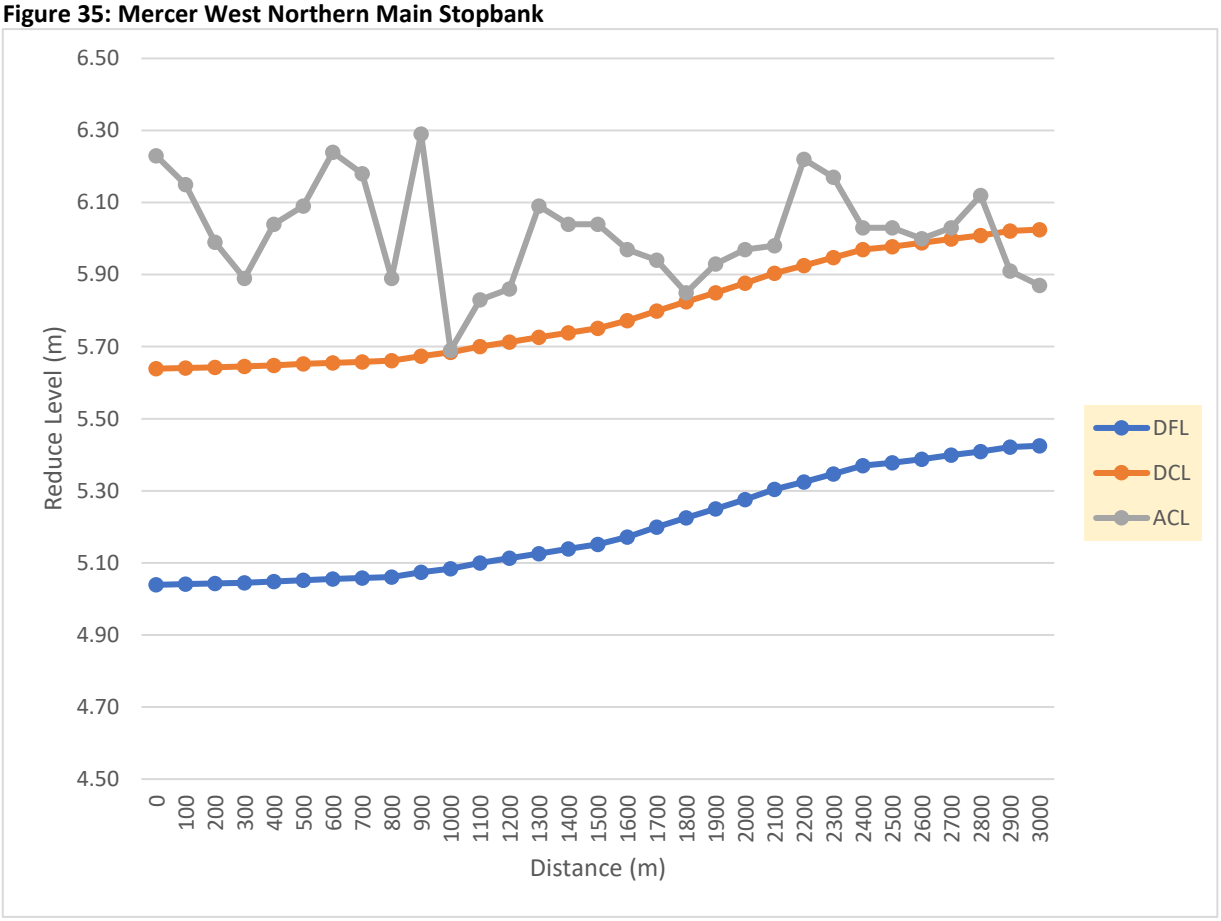


Figure 36: Meremere Main Stopbank

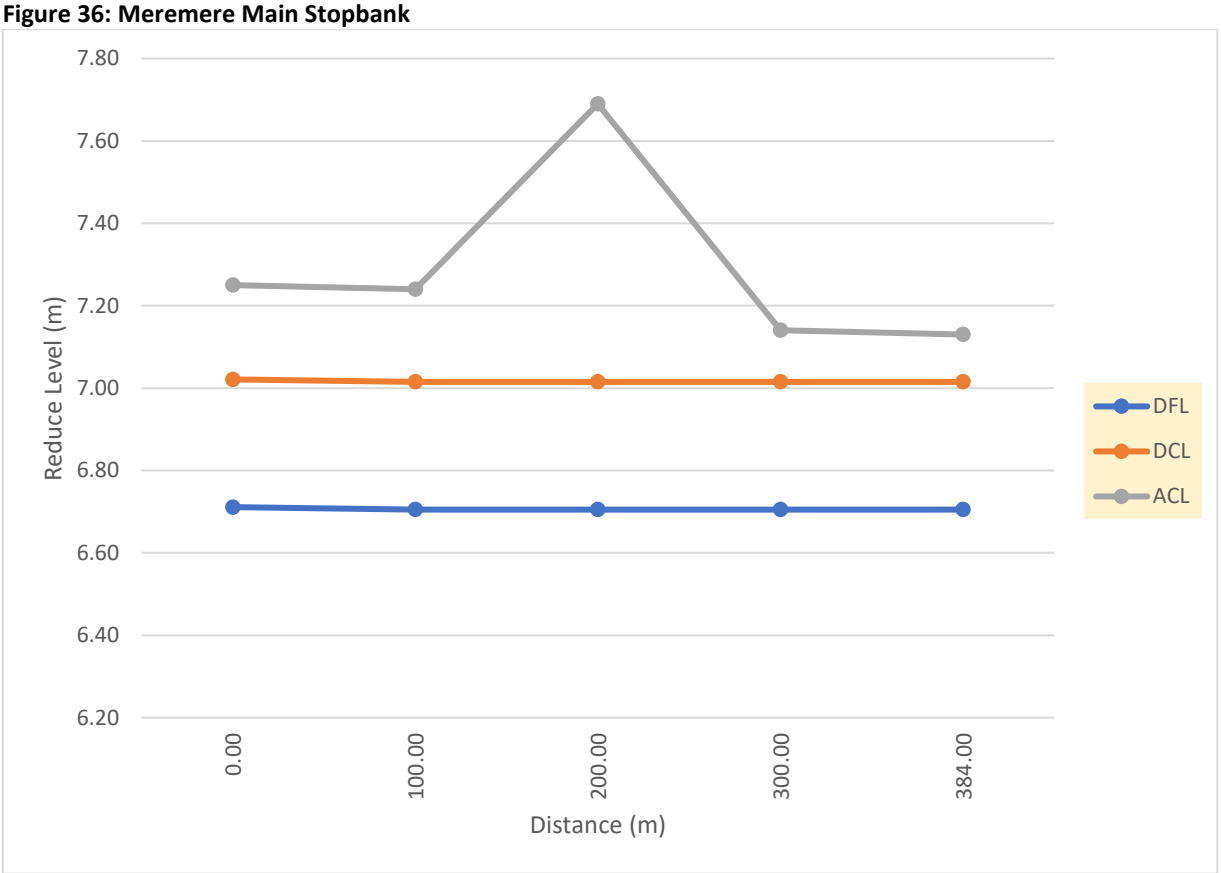


Figure 37: Meremere West Stopbank

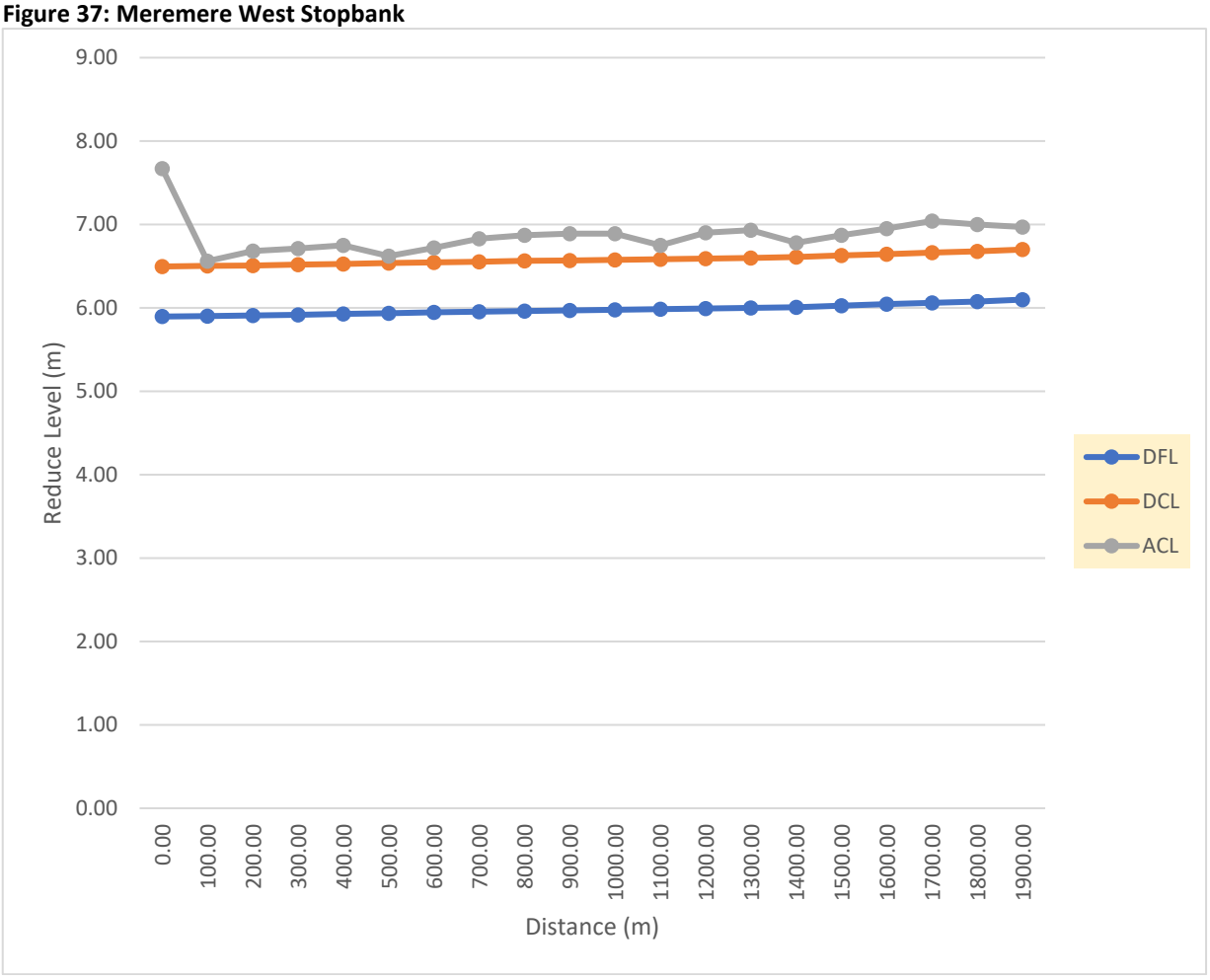


Figure 38: Morrison Road Main Stopbank

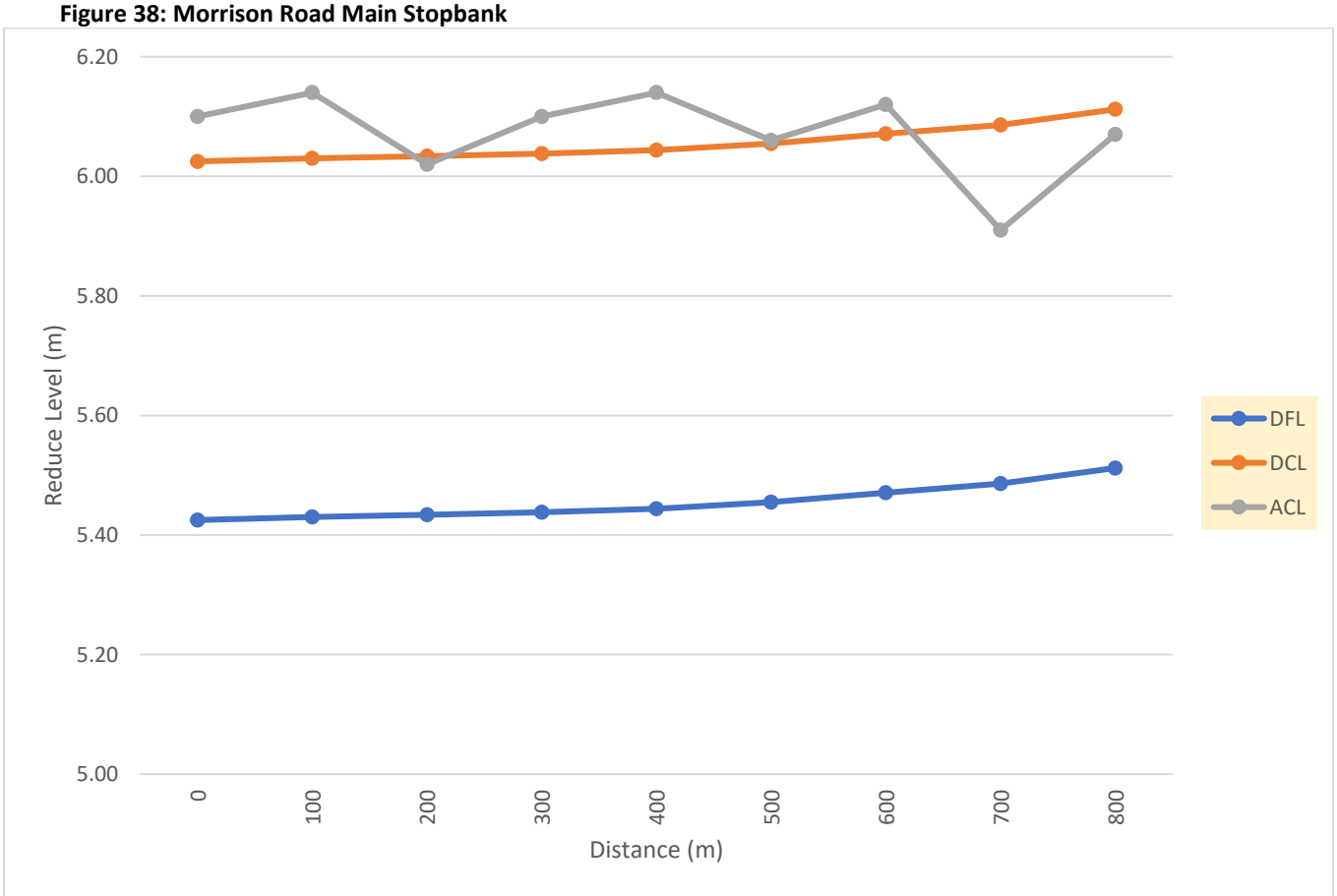


Figure 39: Ohairoa Stopbank

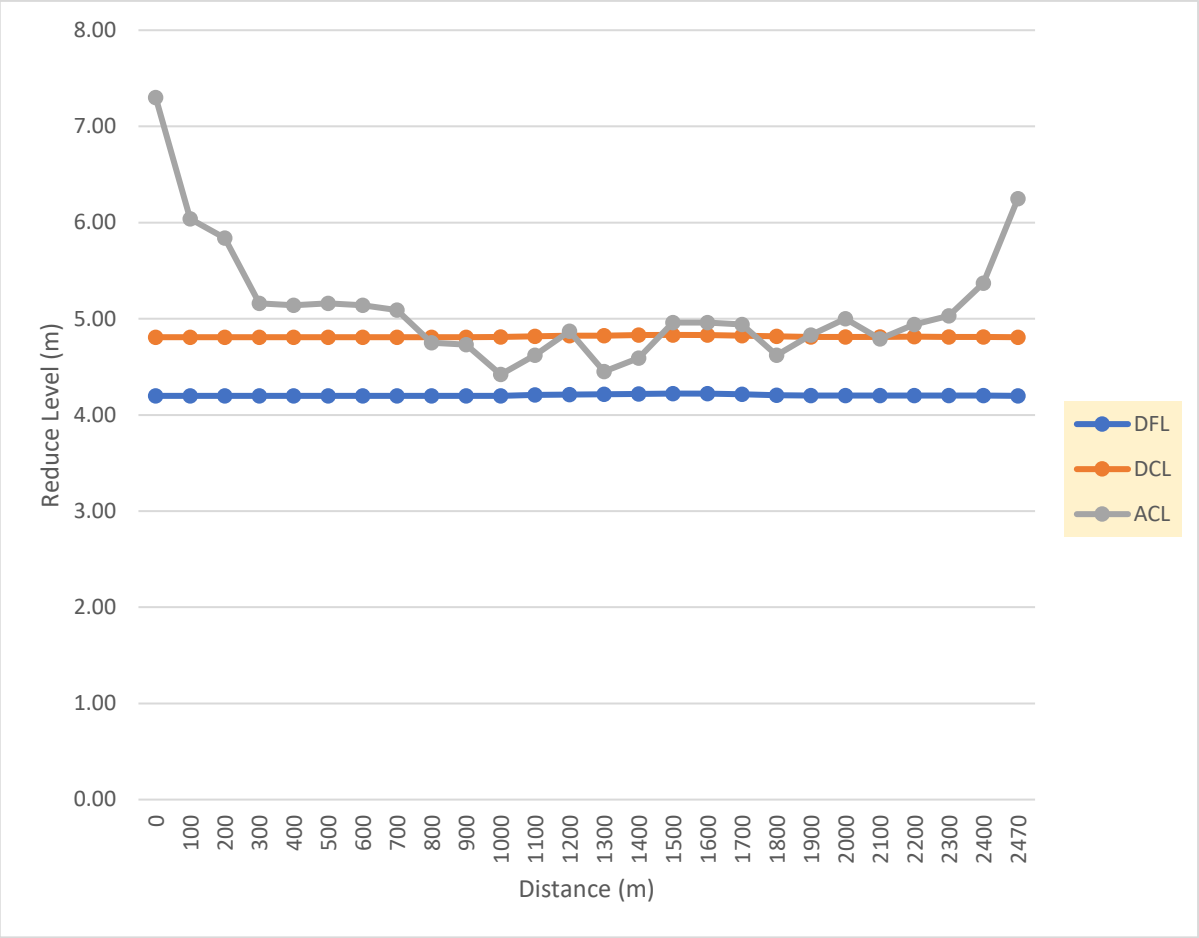


Figure 40: Okowhao Sect Stopbank

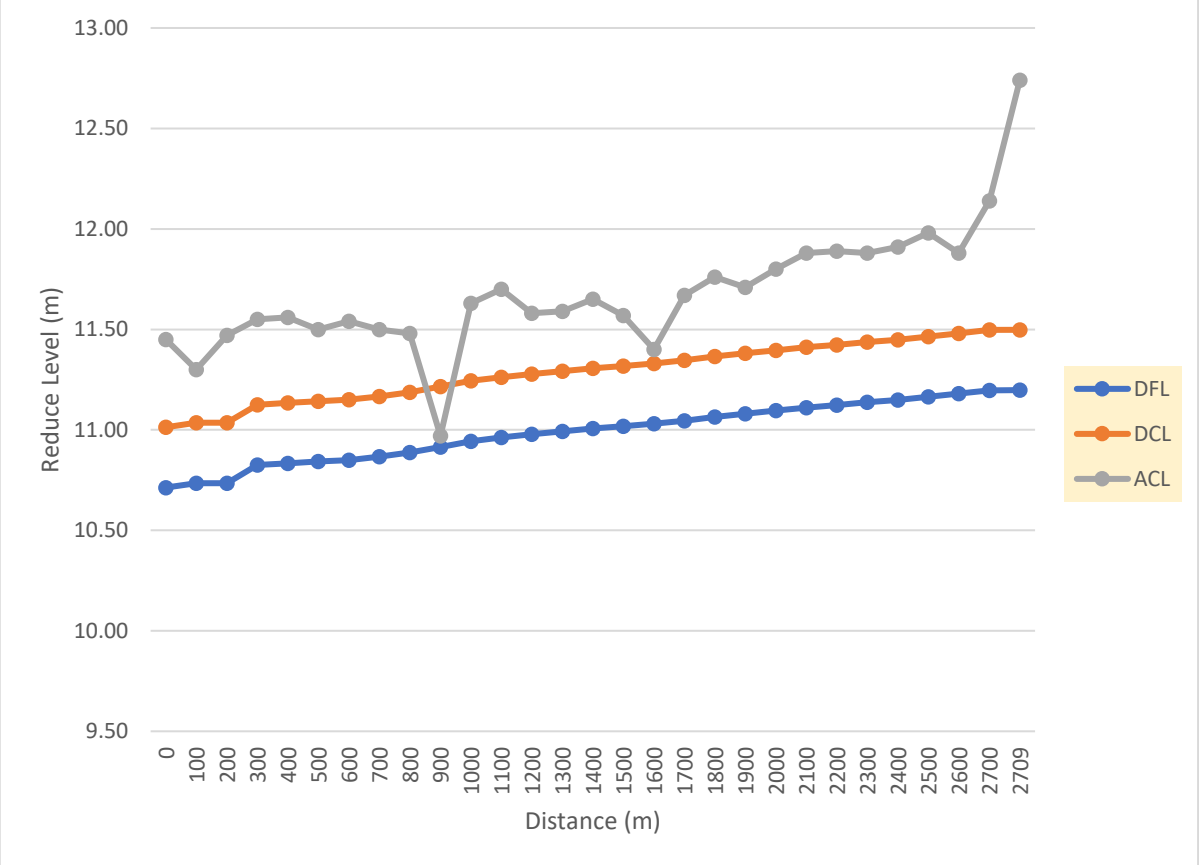


Figure 41: Onewhero East Stopbank

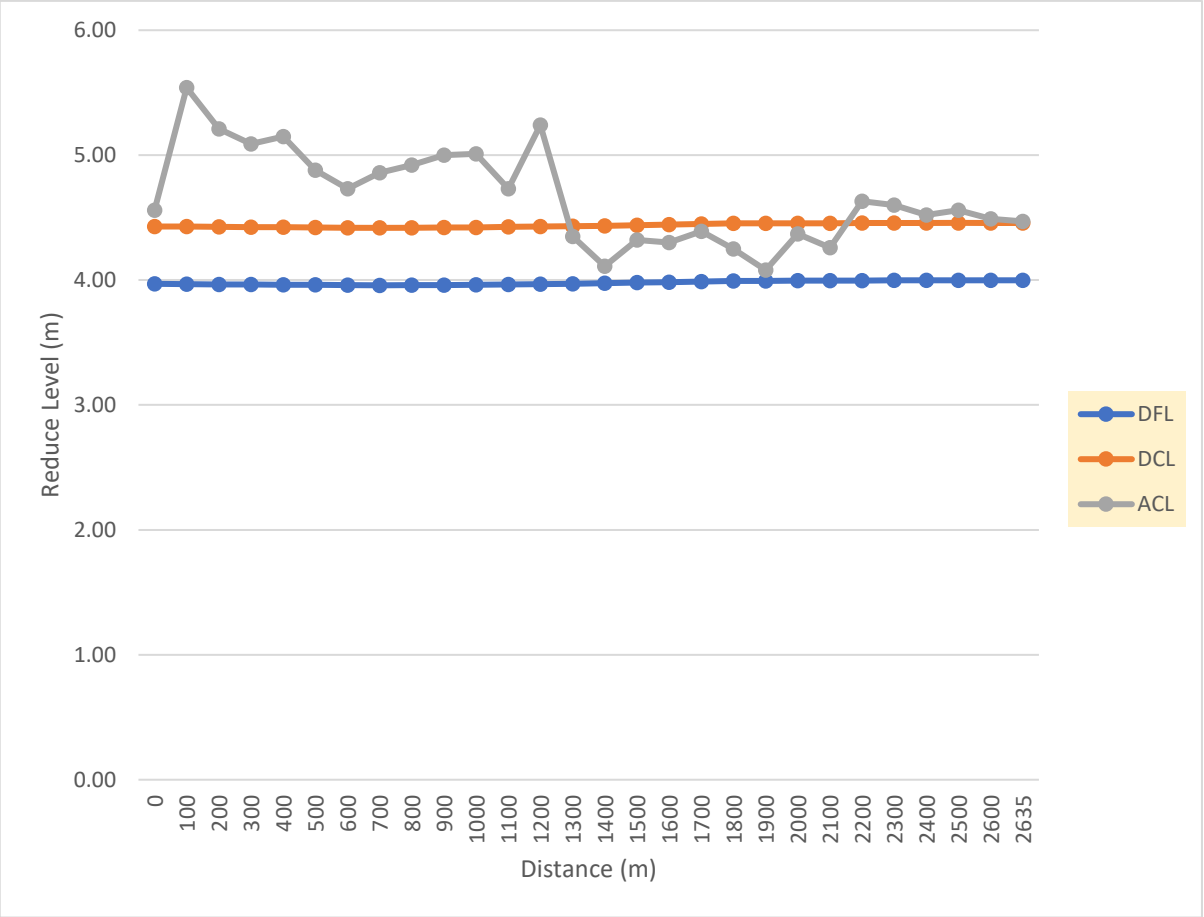


Figure 42: Onewhero West Stopbank

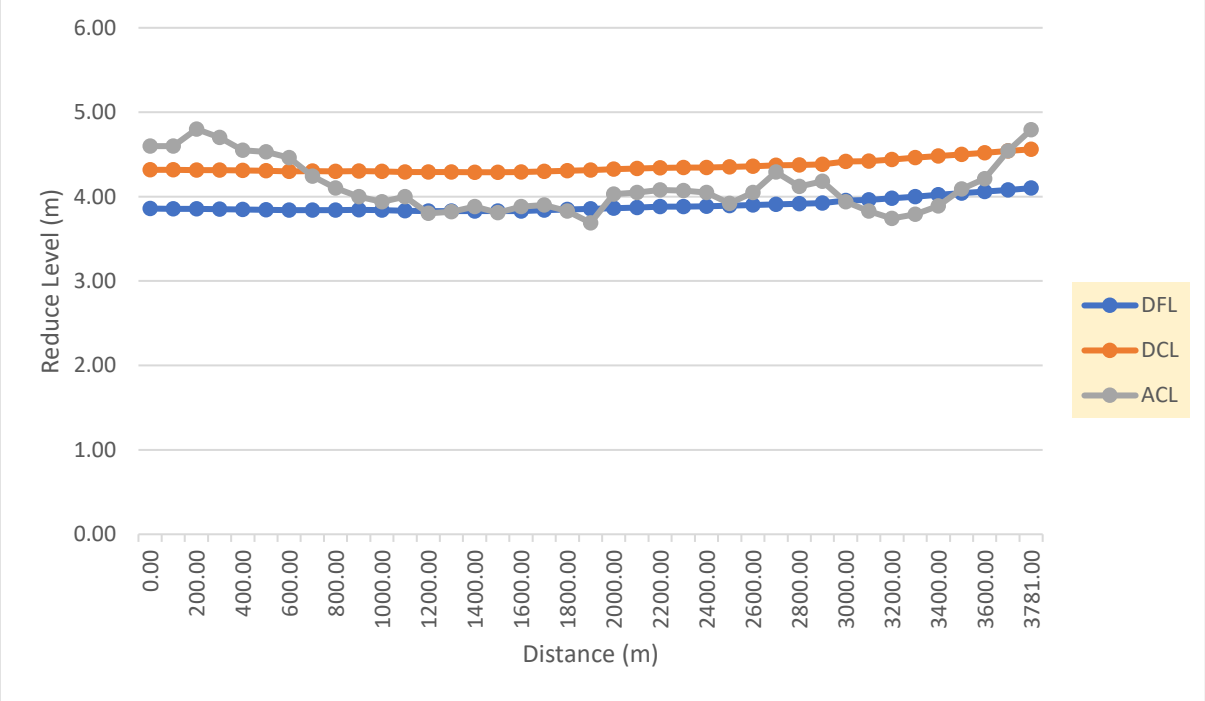


Figure 43: Orton Stopbank

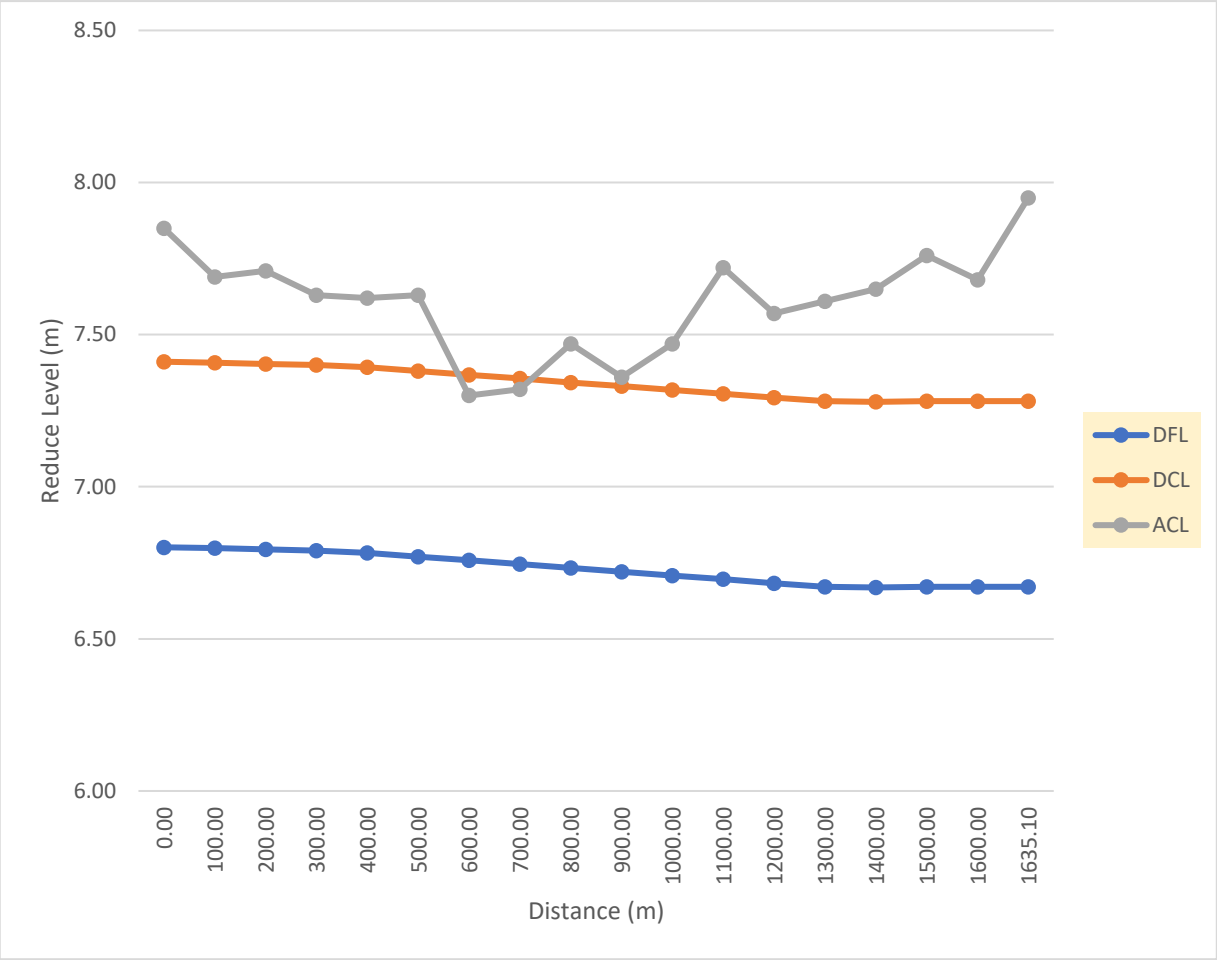


Figure 44: Parry Street Stopbank

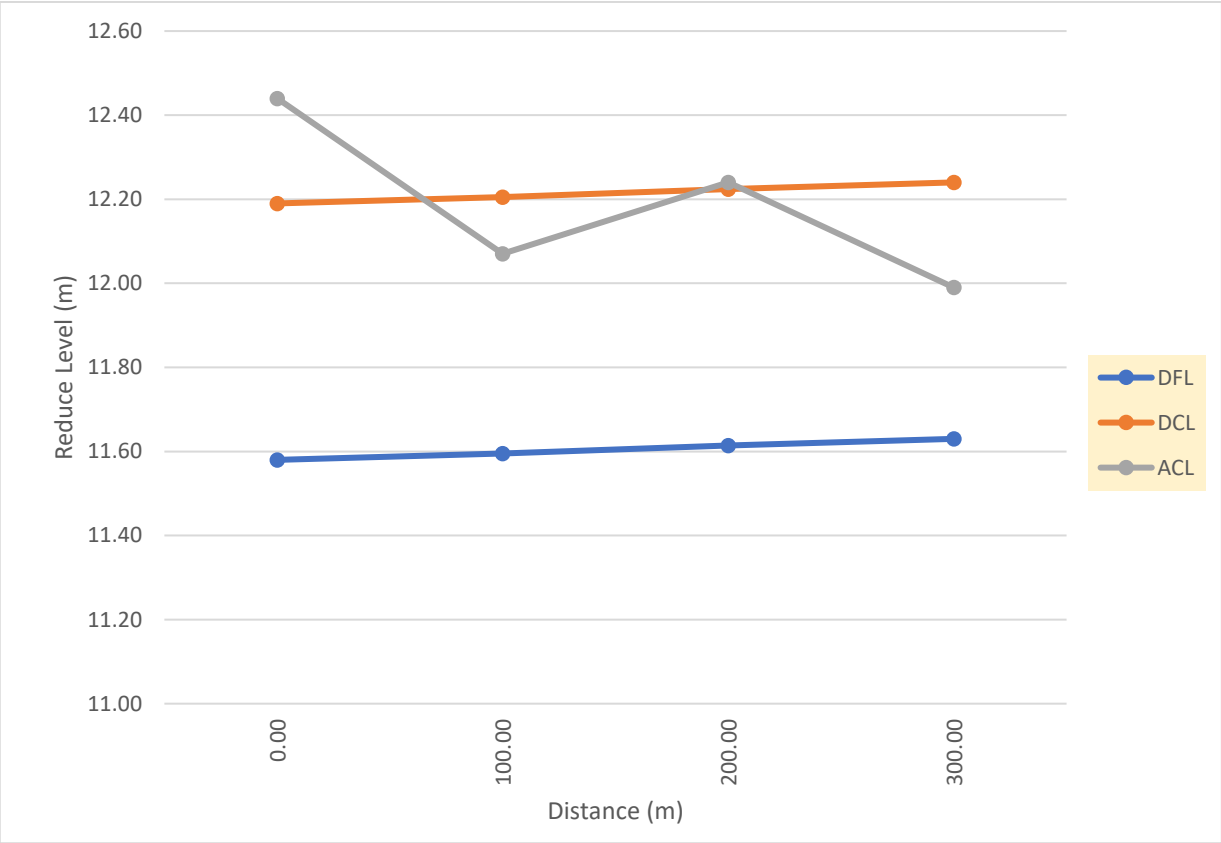


Figure 45: Rangiriri (Section 1) Stopbank

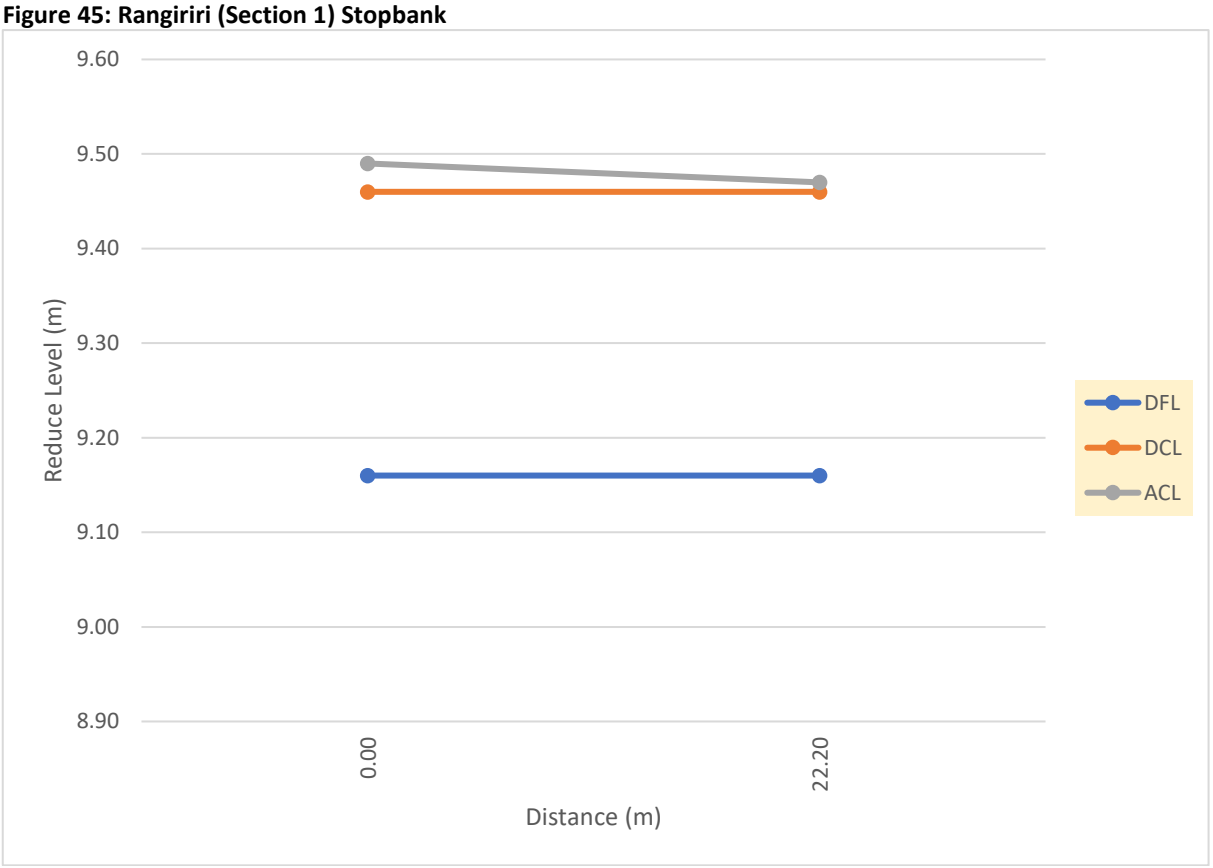


Figure 46: Rangiriri (Section 1) Spillway (DCL=DFL)

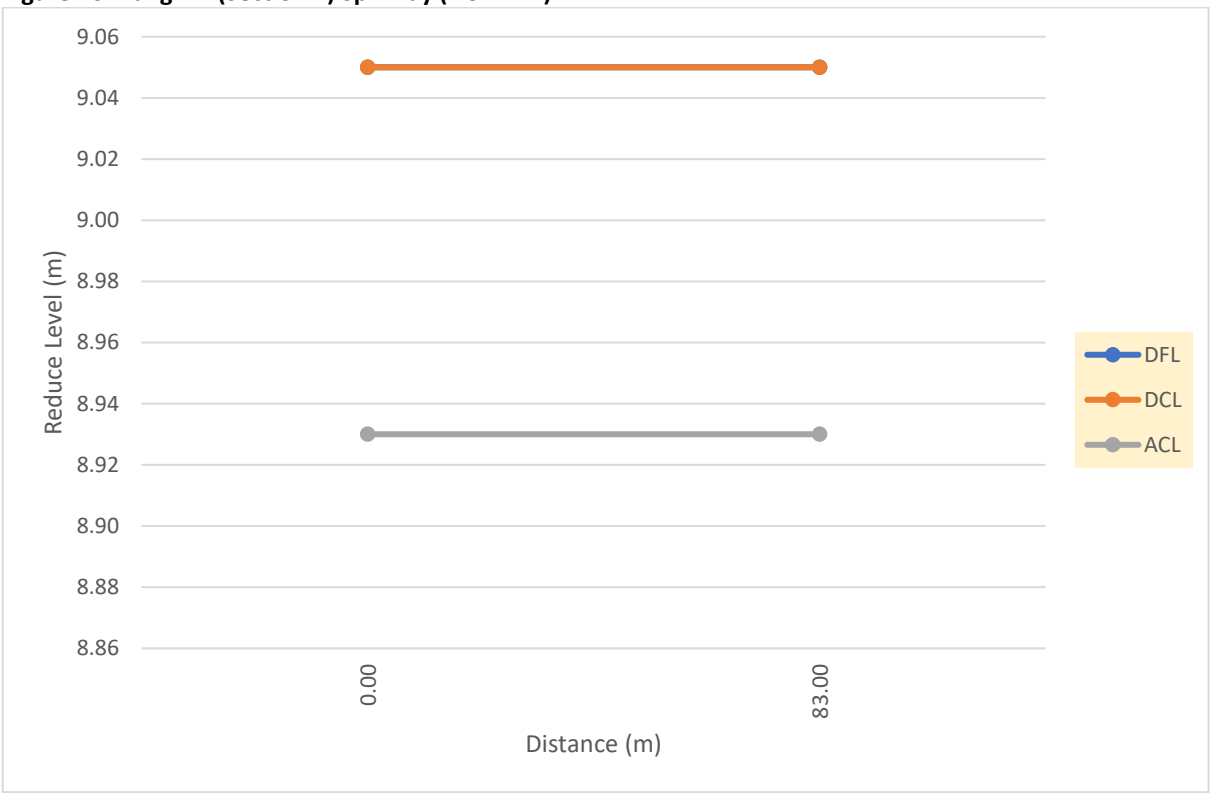


Figure 47: Rangiriri (Section 2) Stopbank

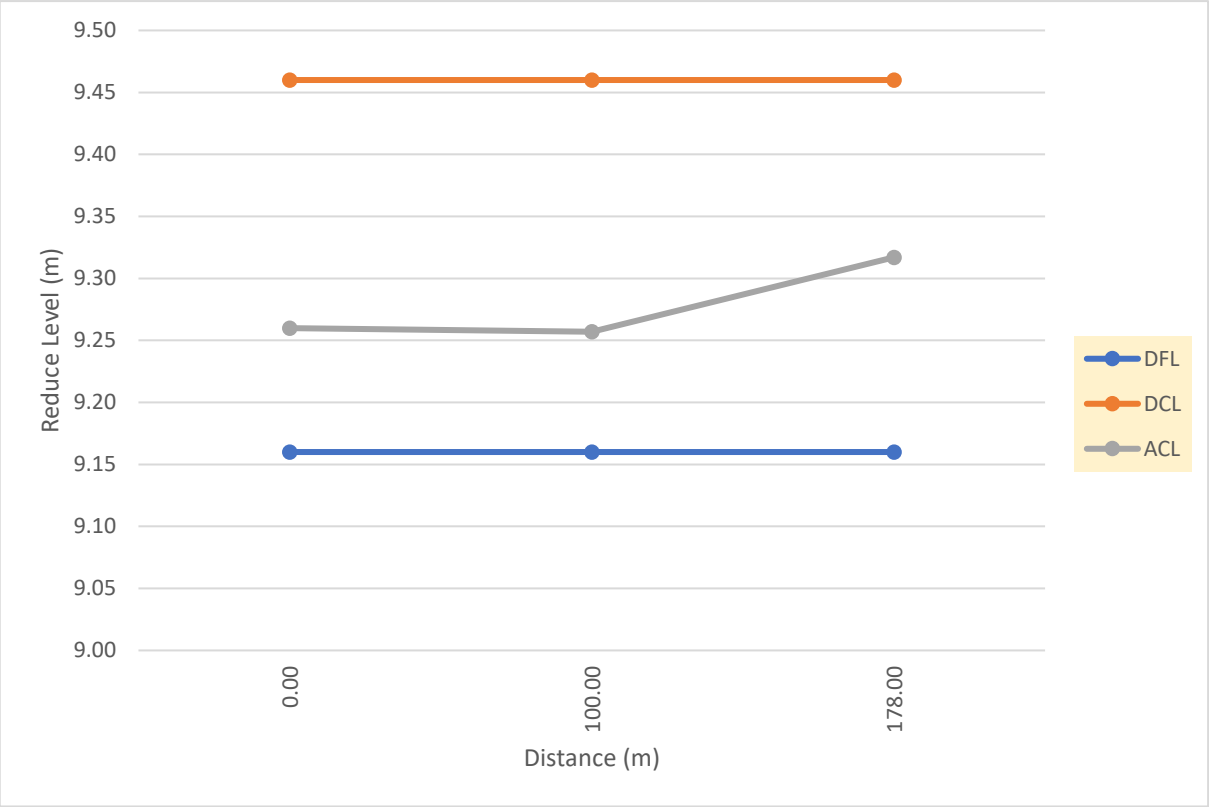


Figure 48: Rangiriri (Section 2) Spillway (DCL=DFL)

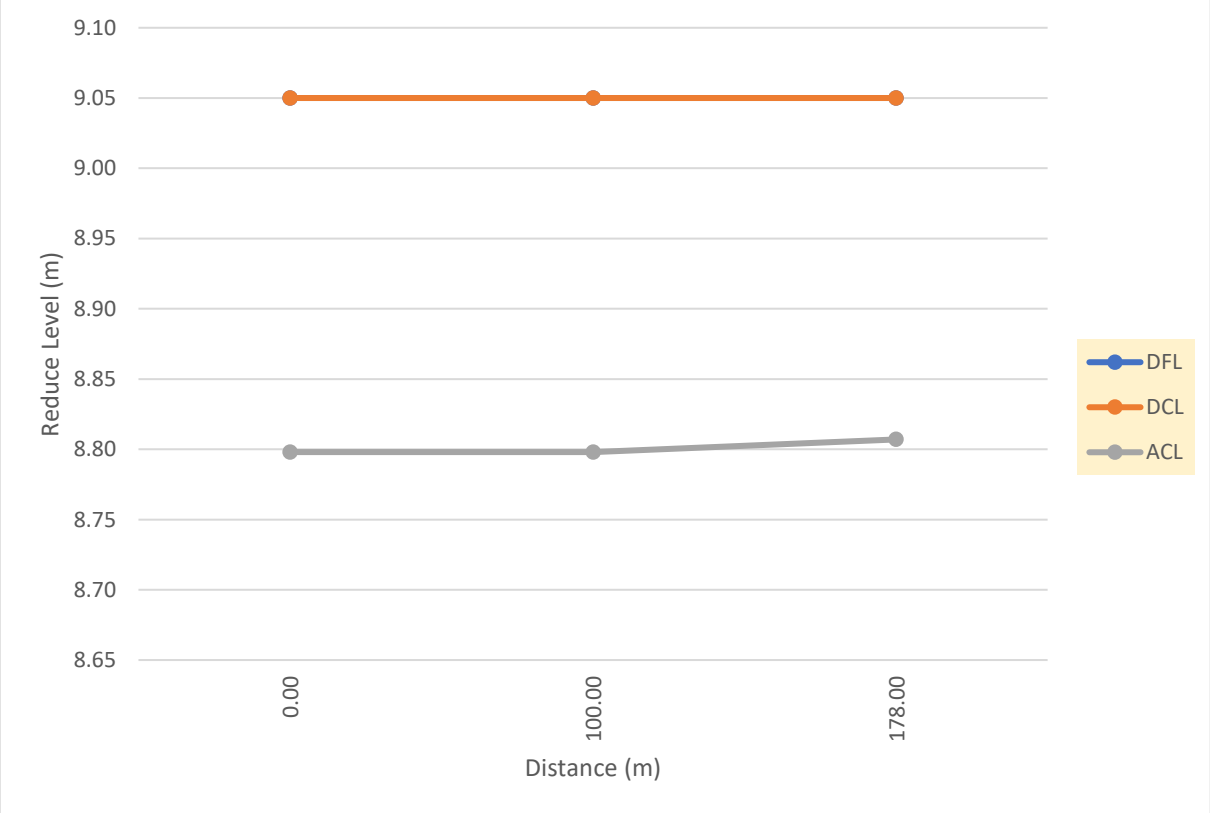


Figure 49: Rangiriri (Section 3) Stopbank

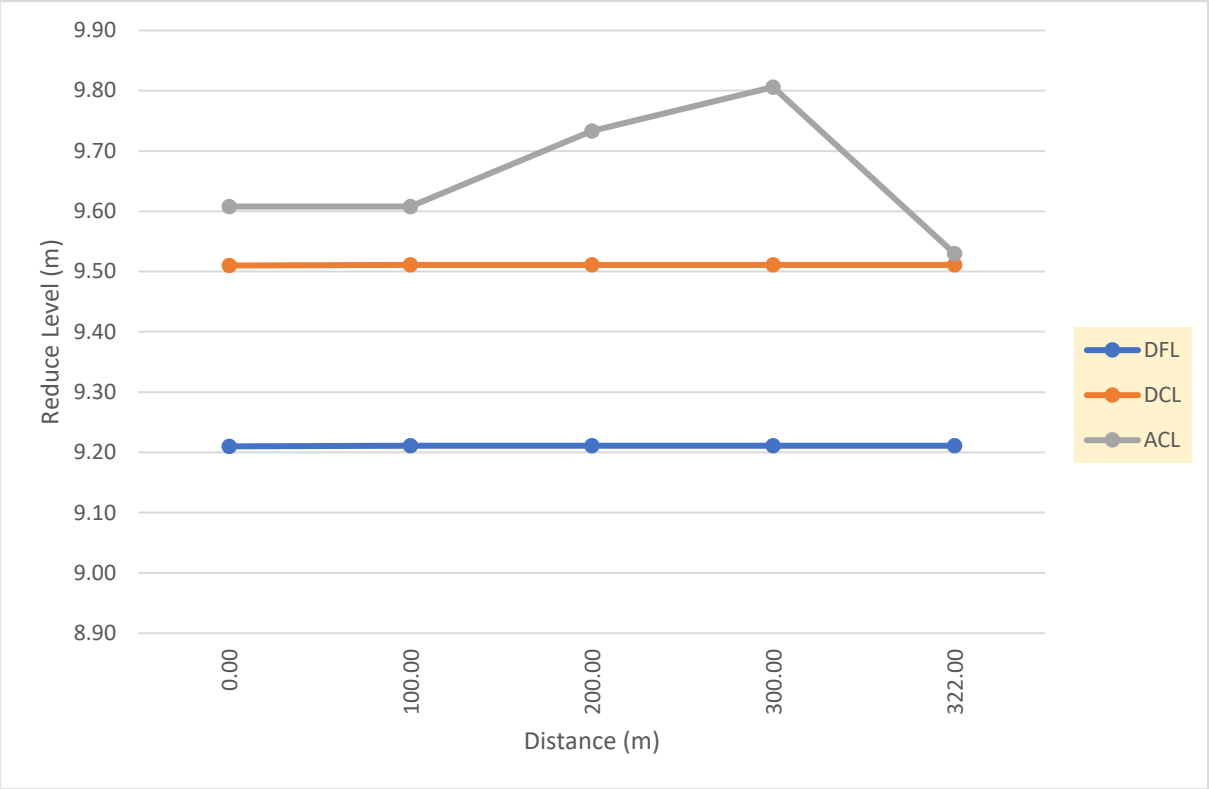


Figure 50: Rangiriri (Section 3) Spillway (DCL=DFL)

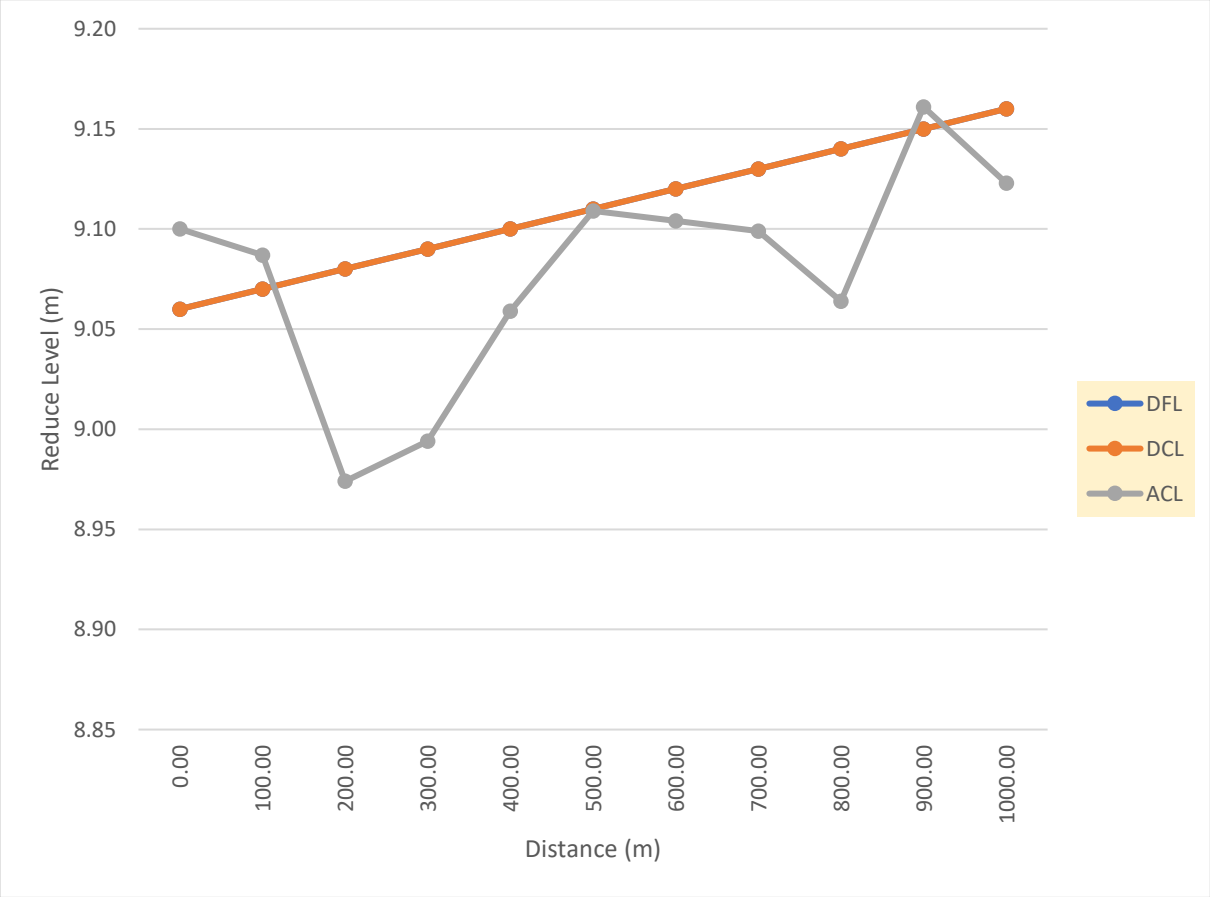


Figure 51: Rangiriri North Stopbank

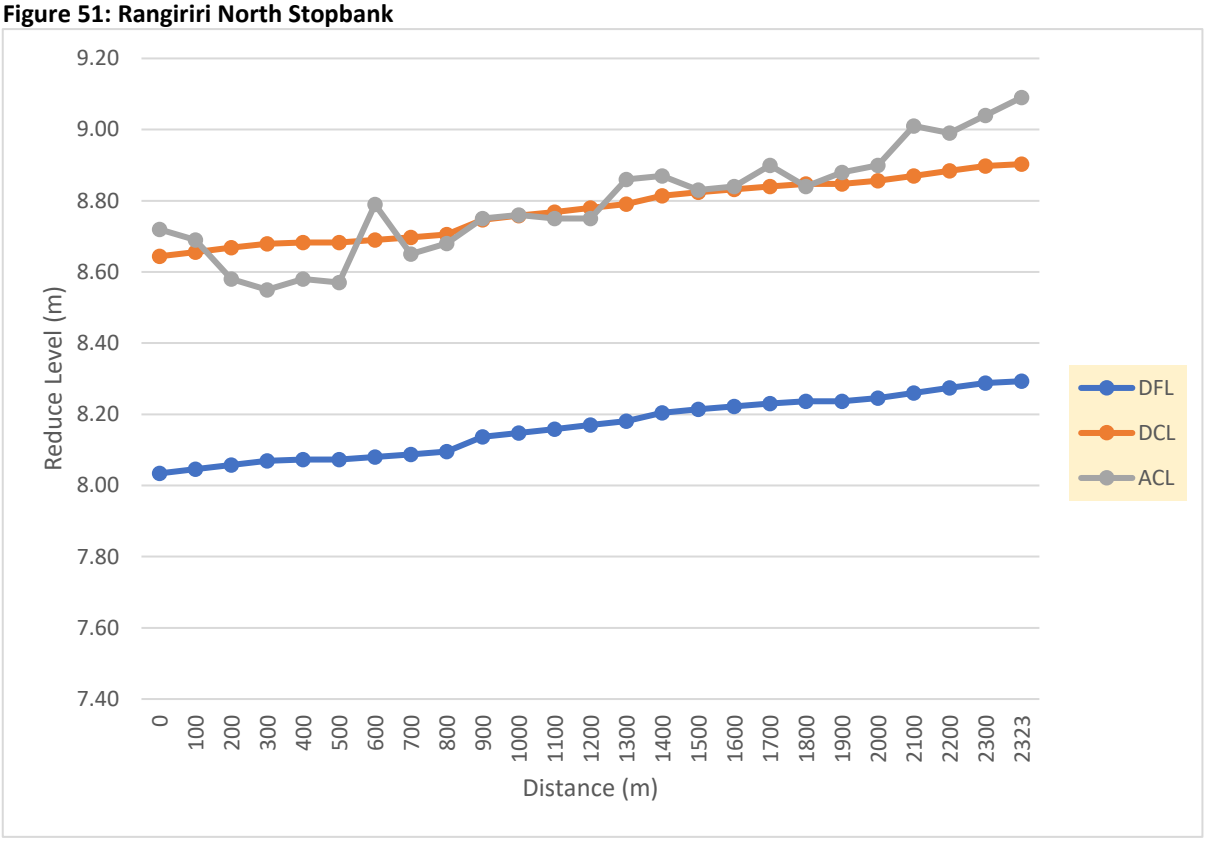


Figure 52: Rangiriri Spillway to Wool Scourers Stopbank

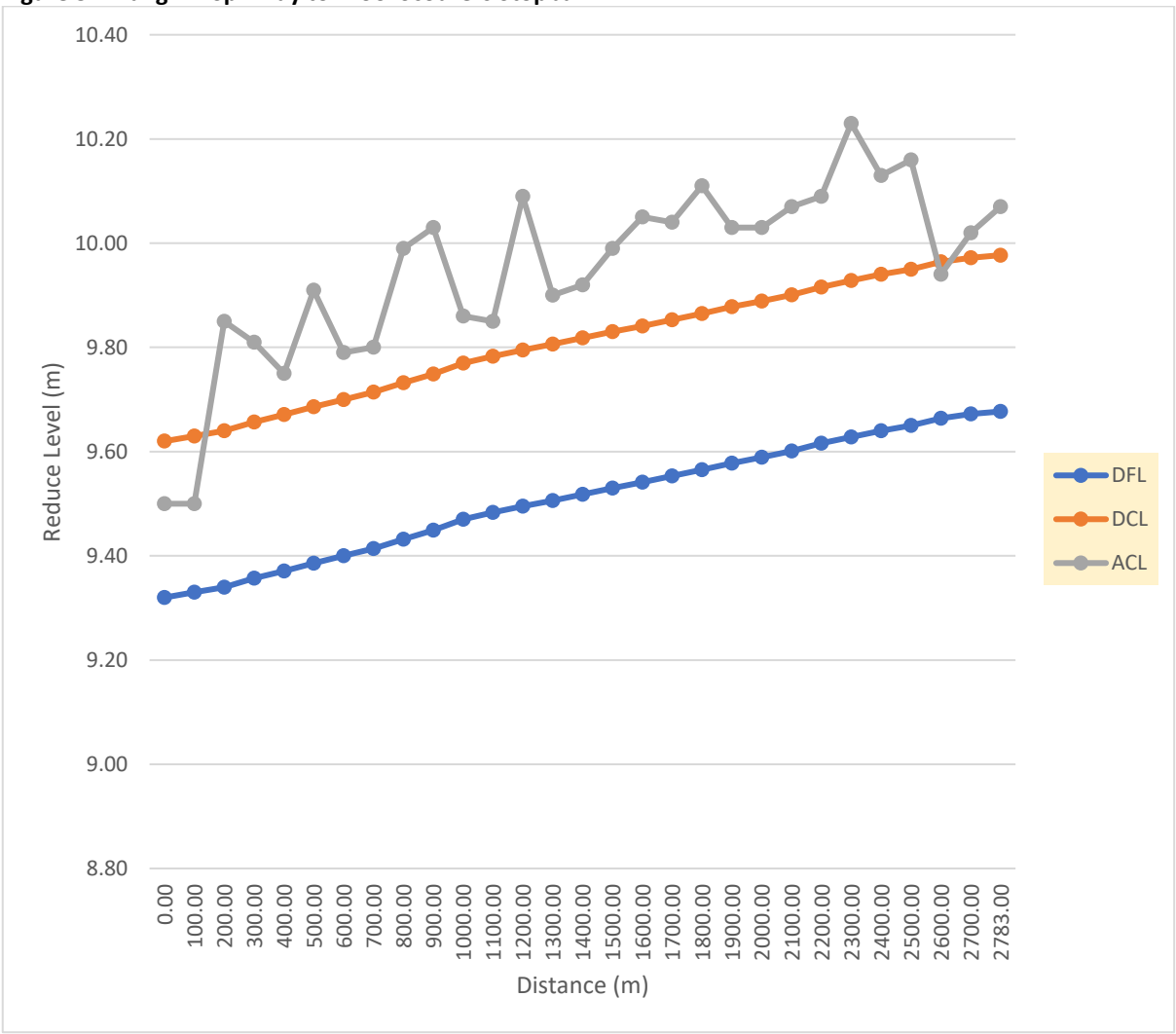


Figure 53: Rotongaro Canal LB Stopbank

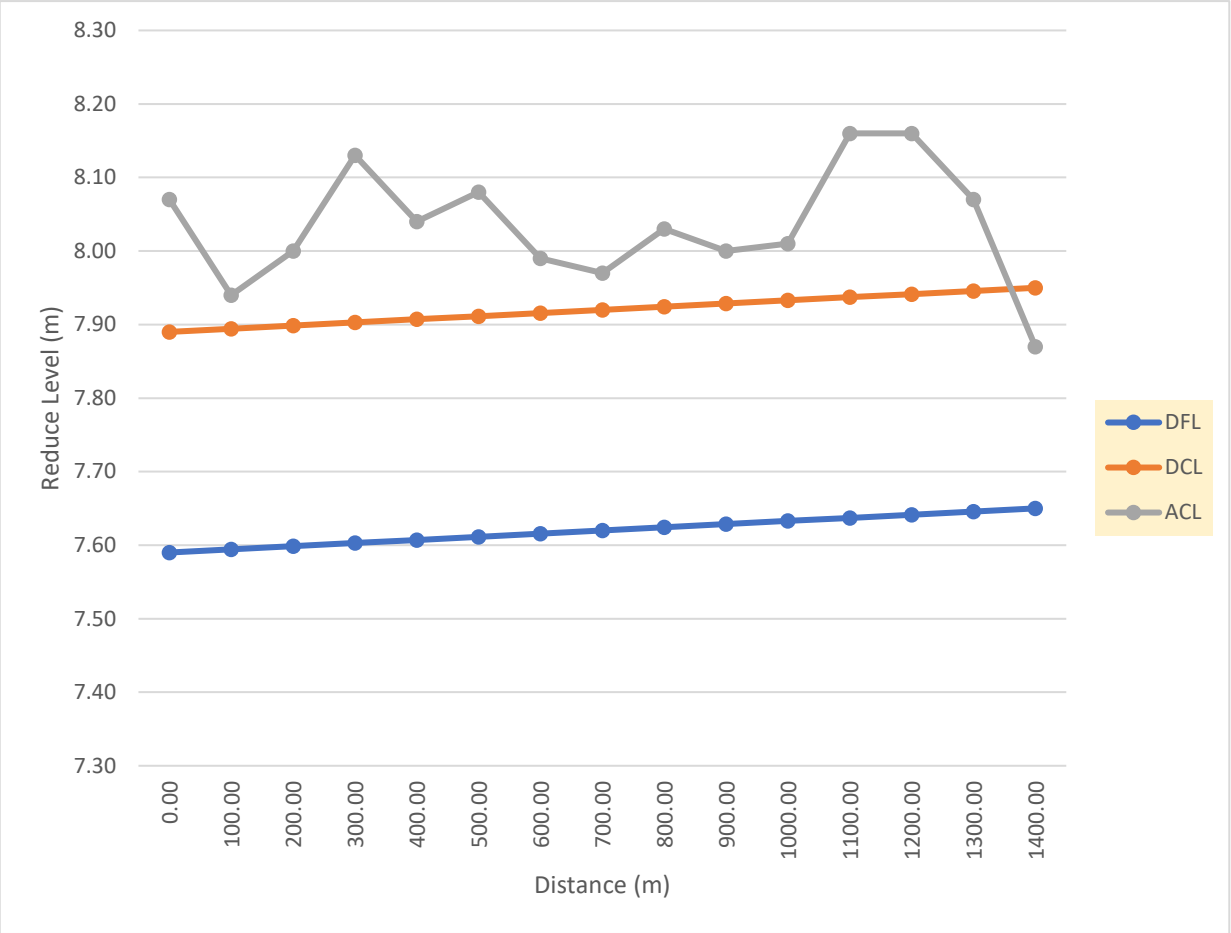


Figure 54: Rotongaro Canal RB Austins Section (D/S of Spillway) Stopbank

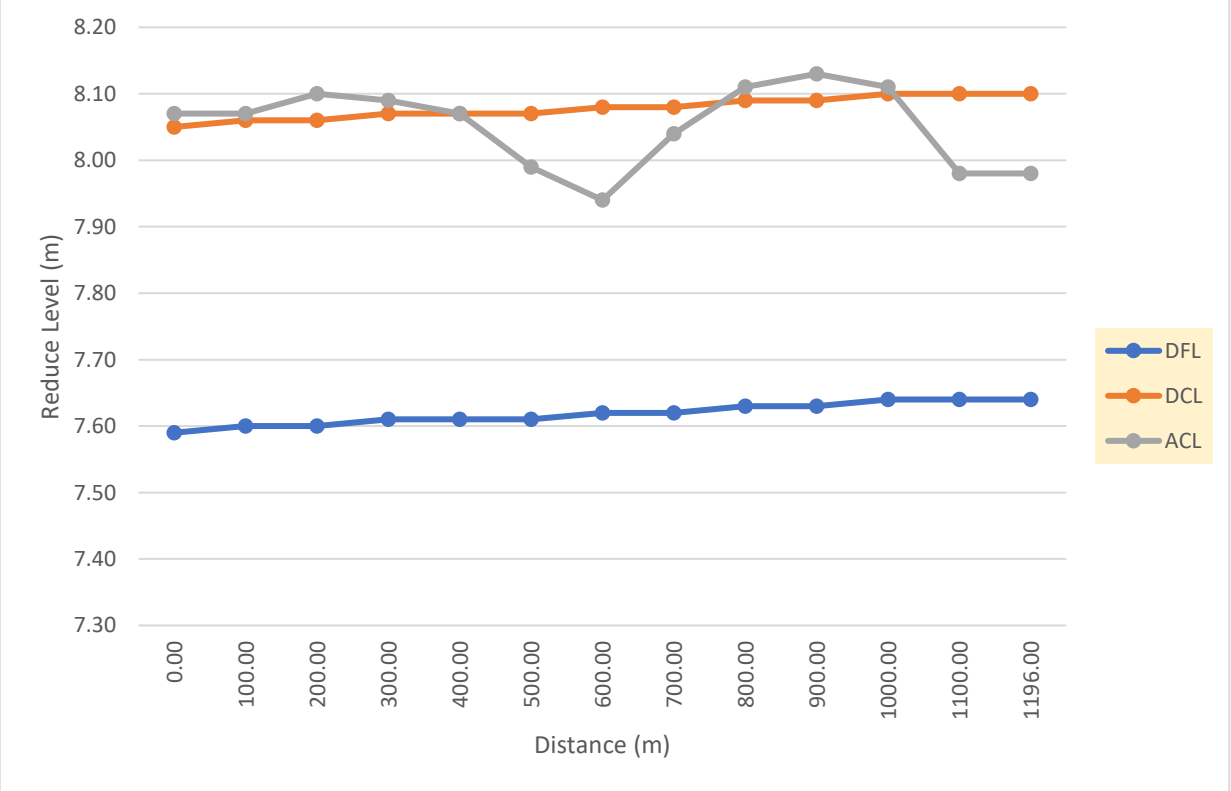


Figure 55: Rotongaro Canal RB Austins Section (U/S of Spillway) Stopbank (DCL=DFL)

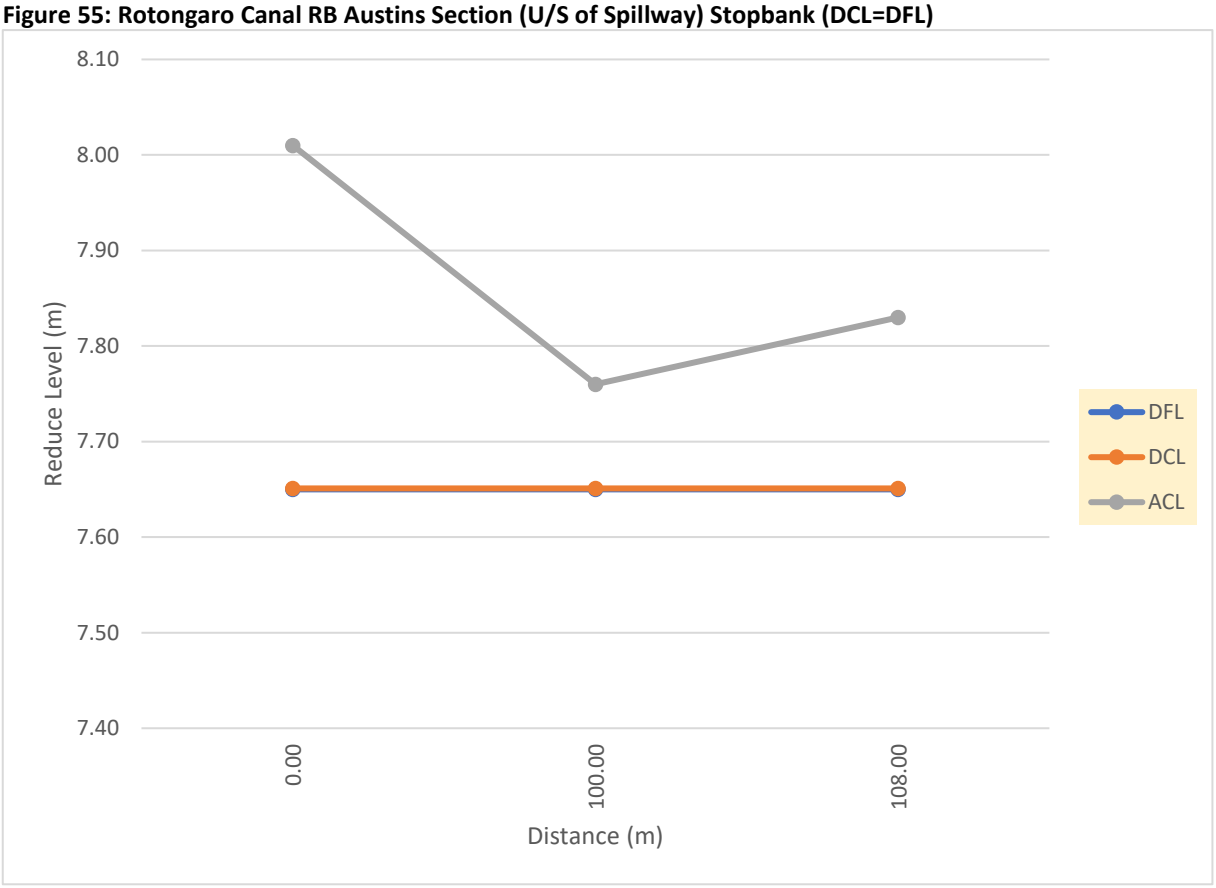


Figure 56: Rotongaro Canal RB Austins Section Spillway (DCL=DFL)

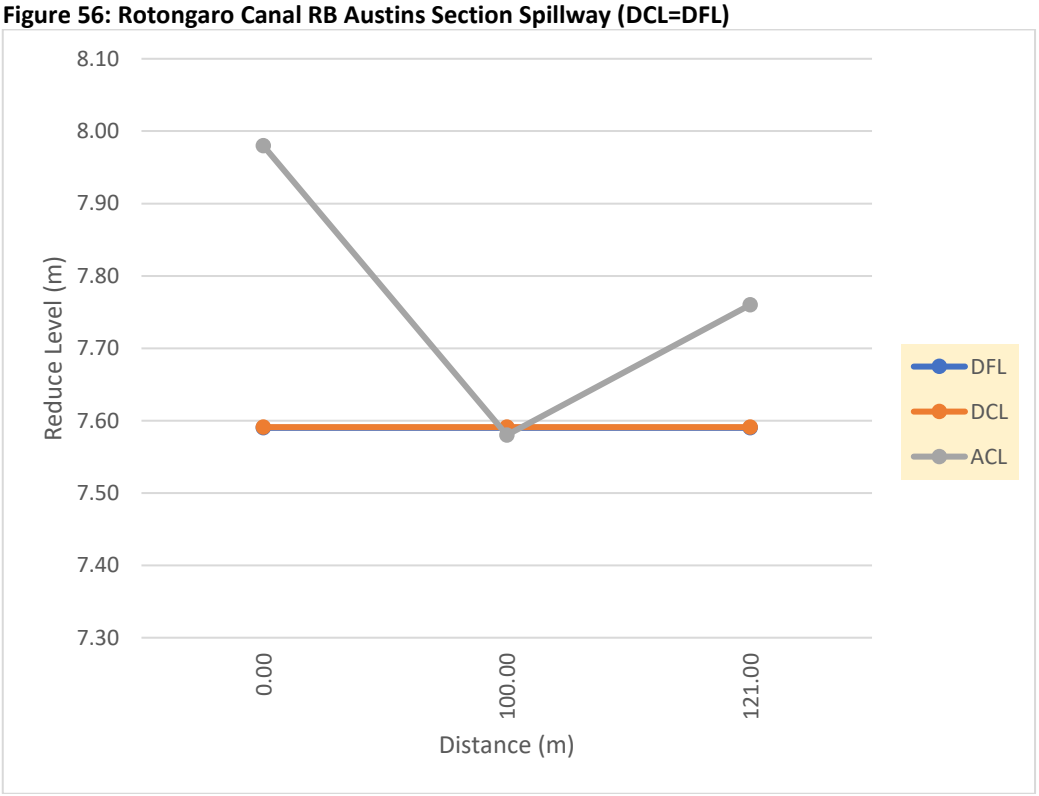


Figure 57: Rotongaro Canal RB Horo Horo Section Stopbank

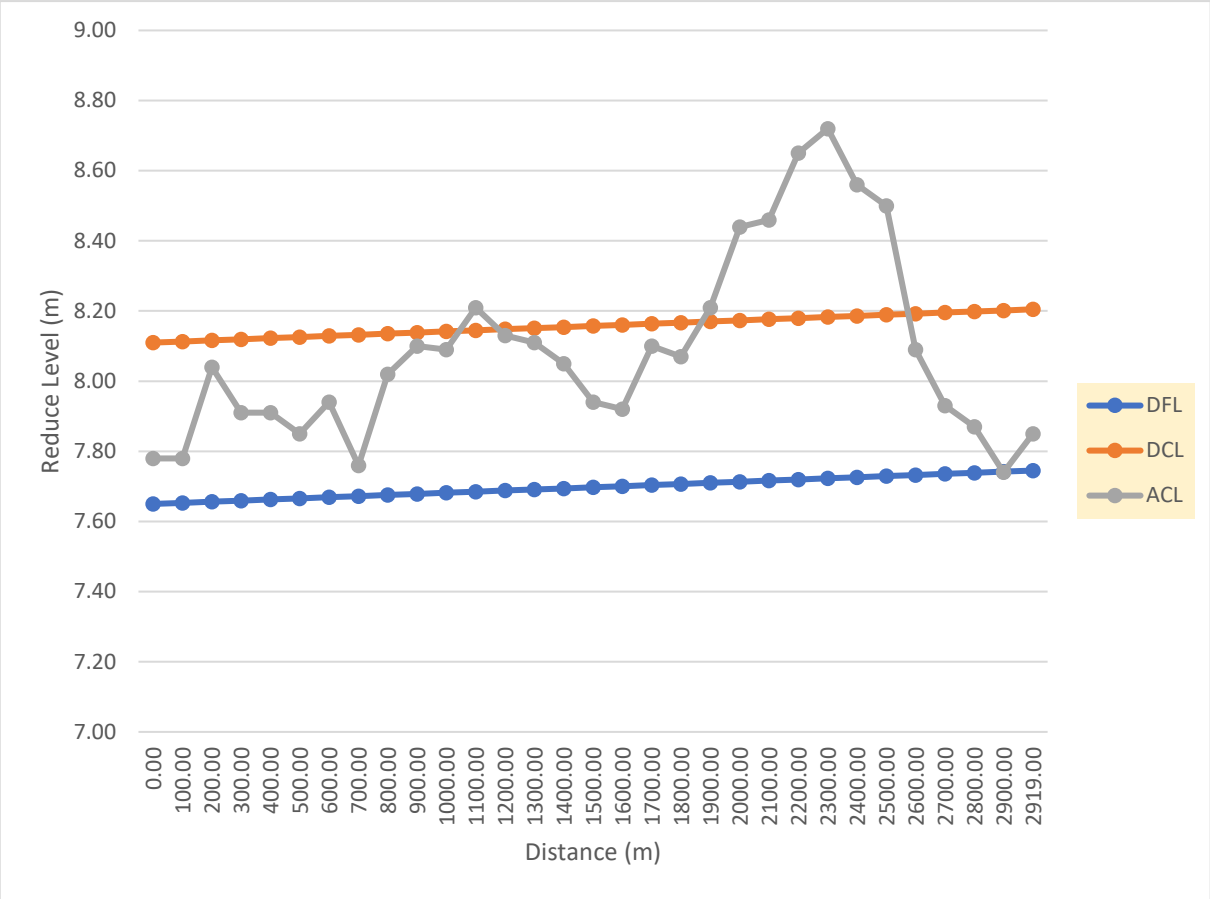


Figure 58: Southern Compartment Main Stopbank

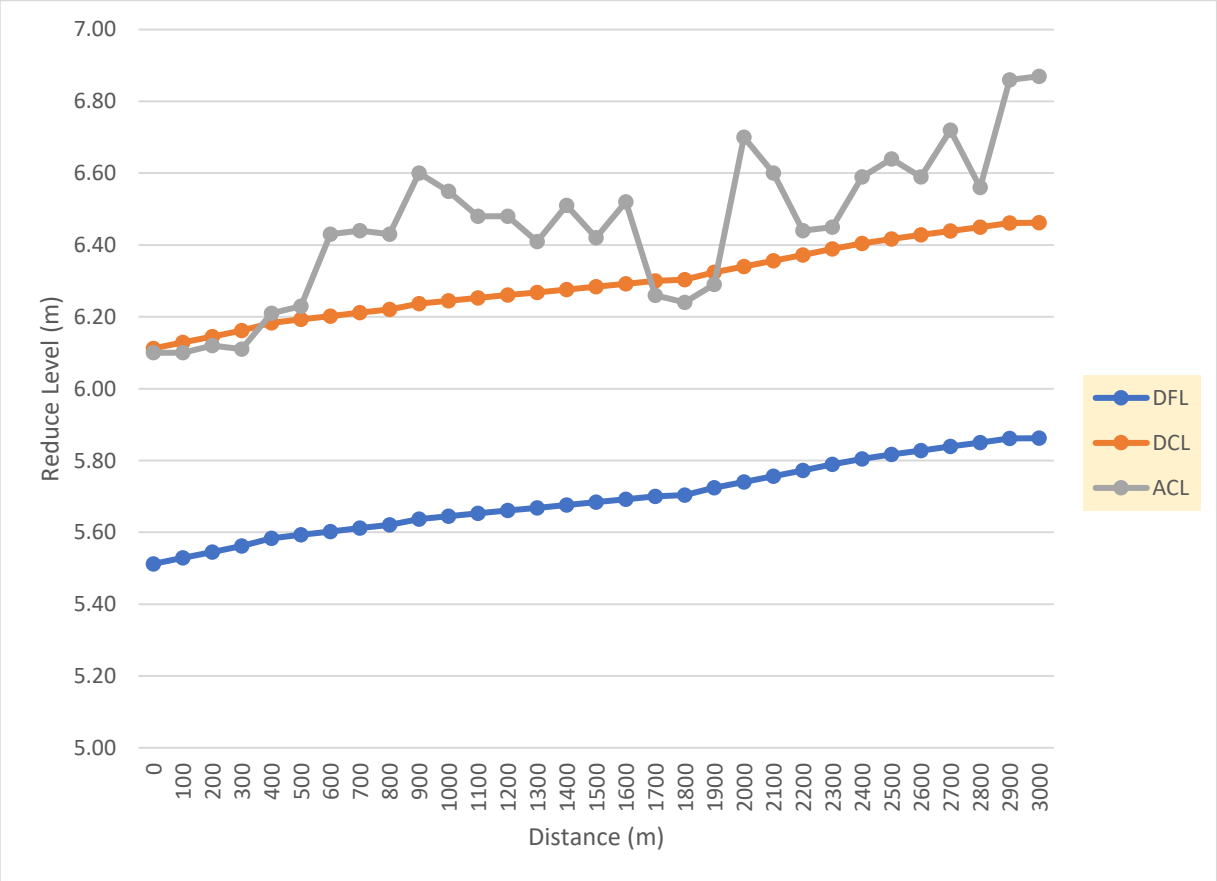


Figure 59: Te Kohanga Major-Eastern Section 1 Stopbank

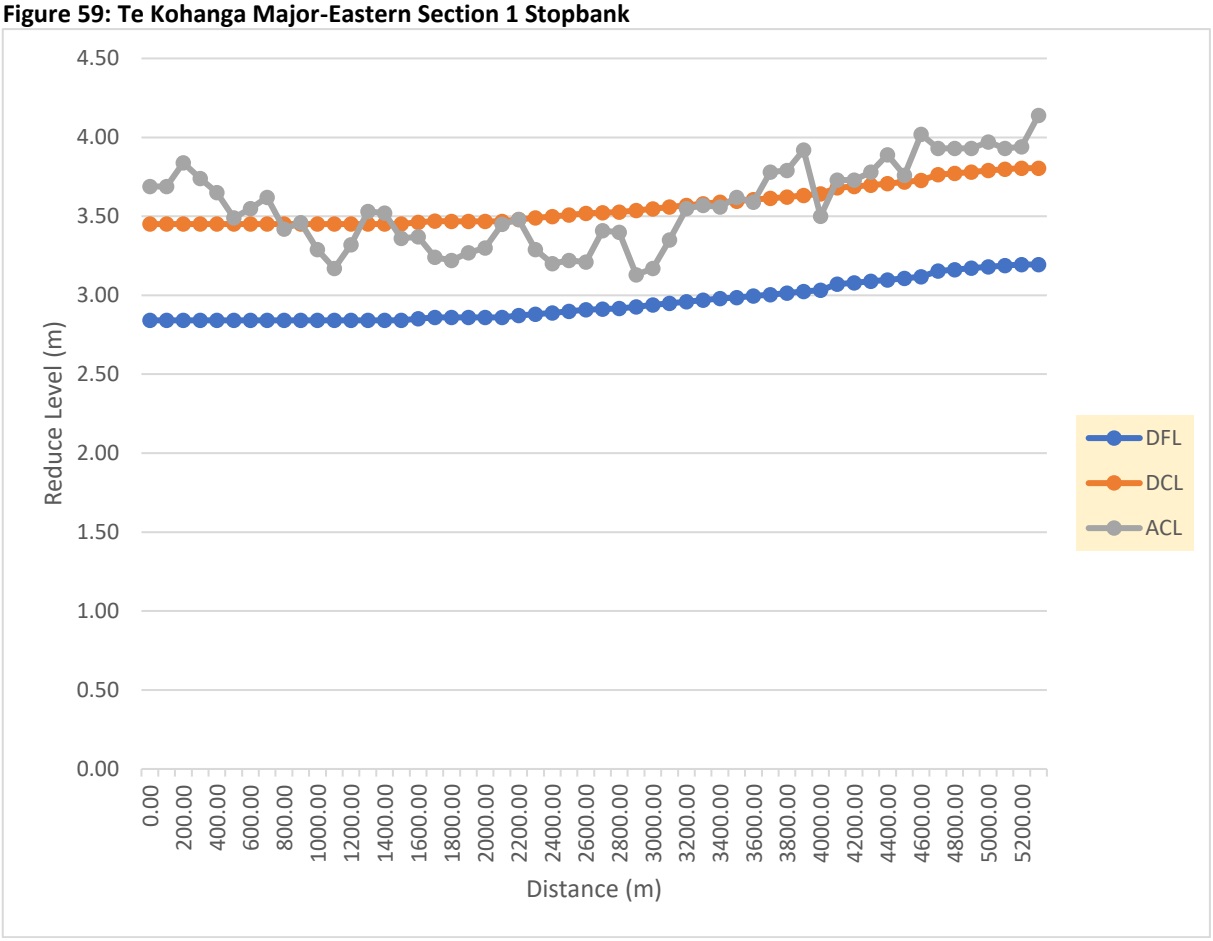


Figure 60: Te Kohanga Major-Eastern Section 2 Stopbank

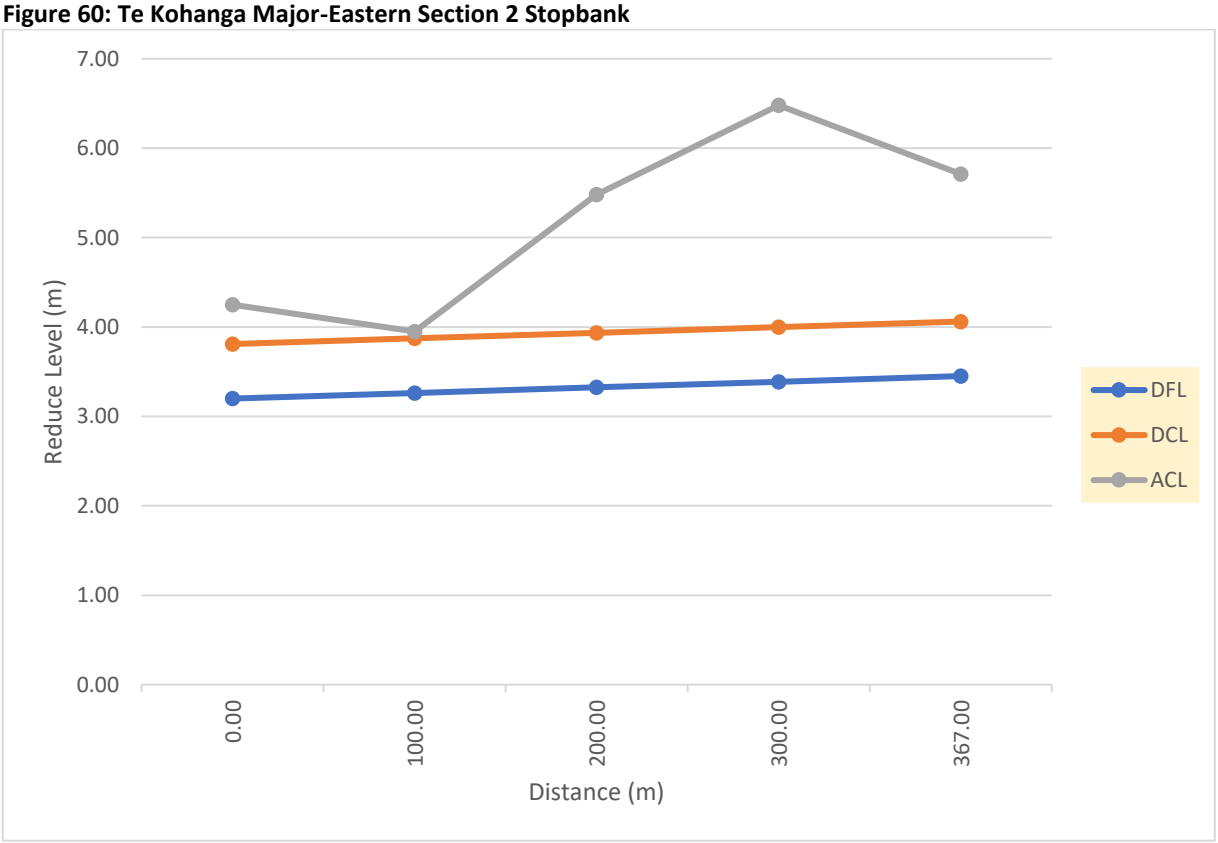


Figure 61: Te Kohanga Major-Eastern Section 3 Stopbank

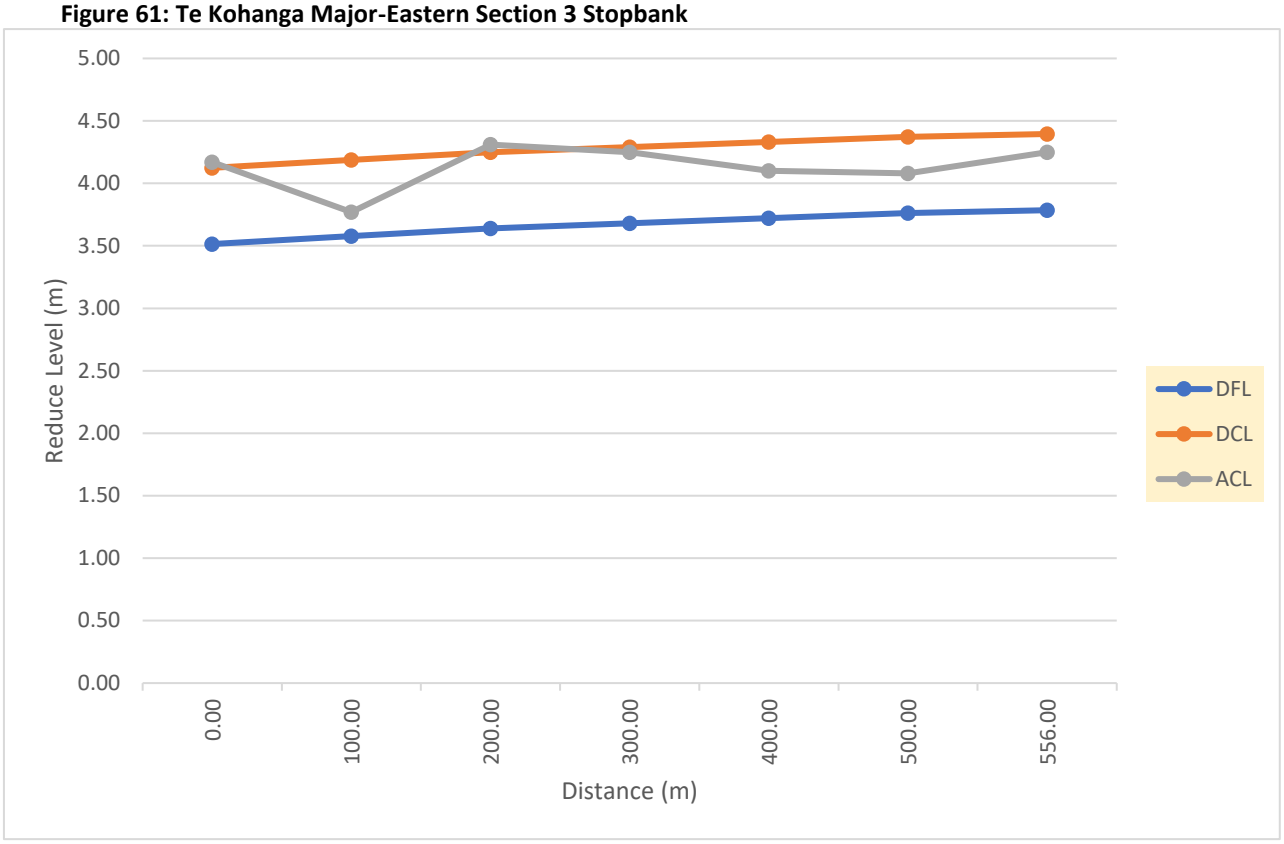


Figure 62: Te Kohanga Major-Western Stopbank

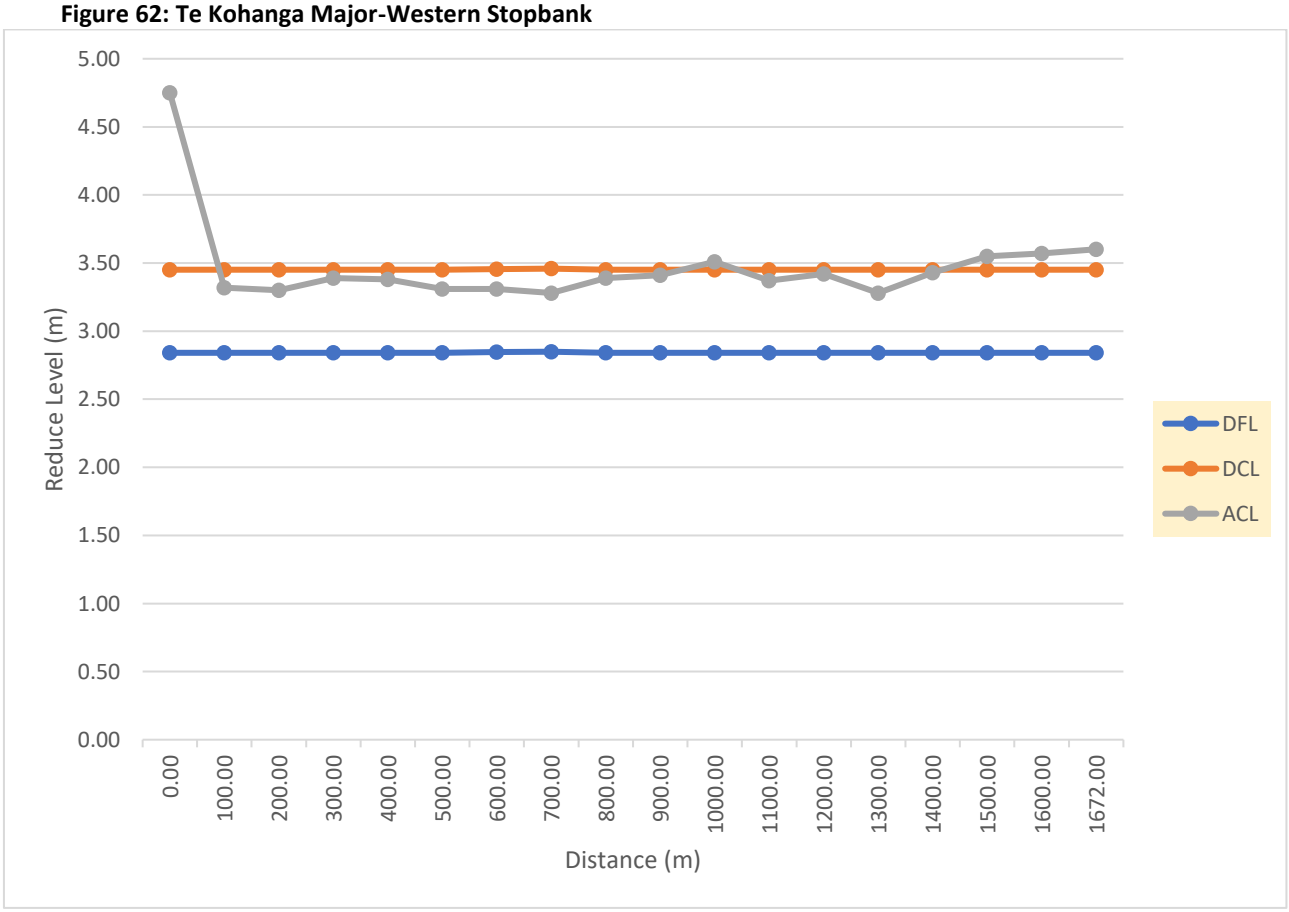


Figure 63: Te Kohanga Minor (Aireys) Stopbank

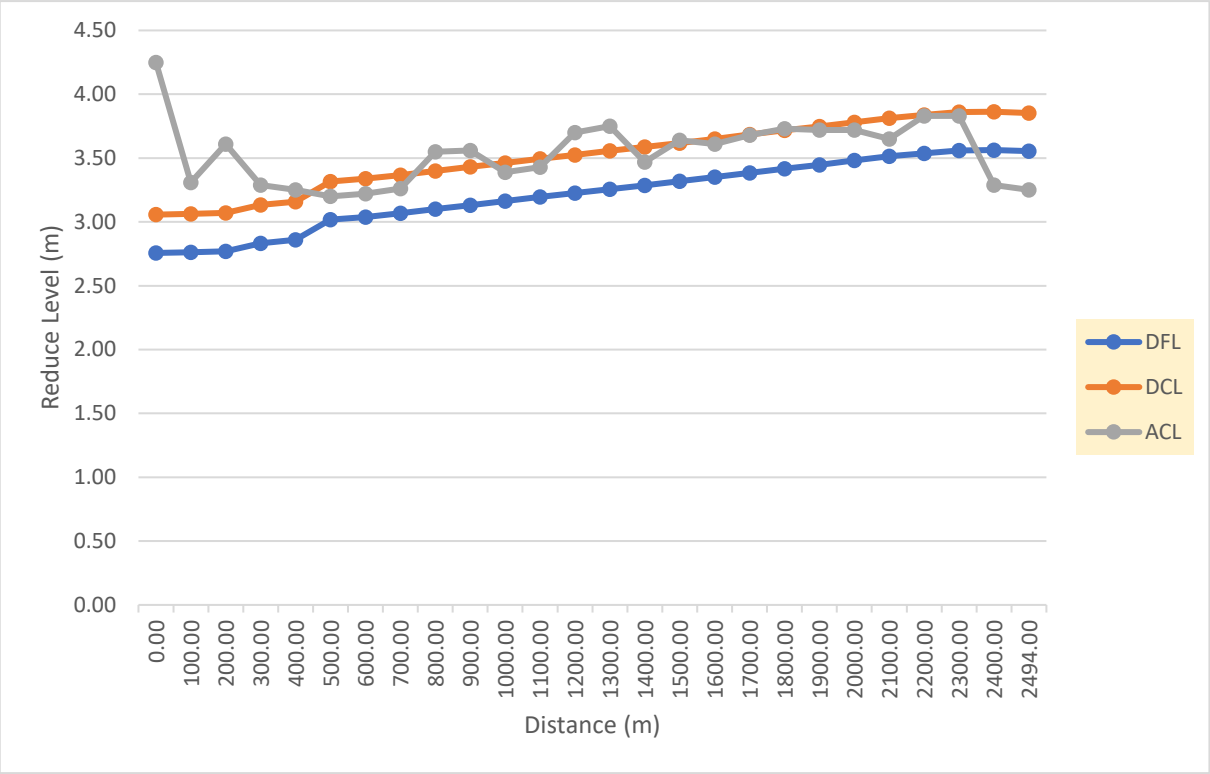


Figure 64: Tickles Stopbank

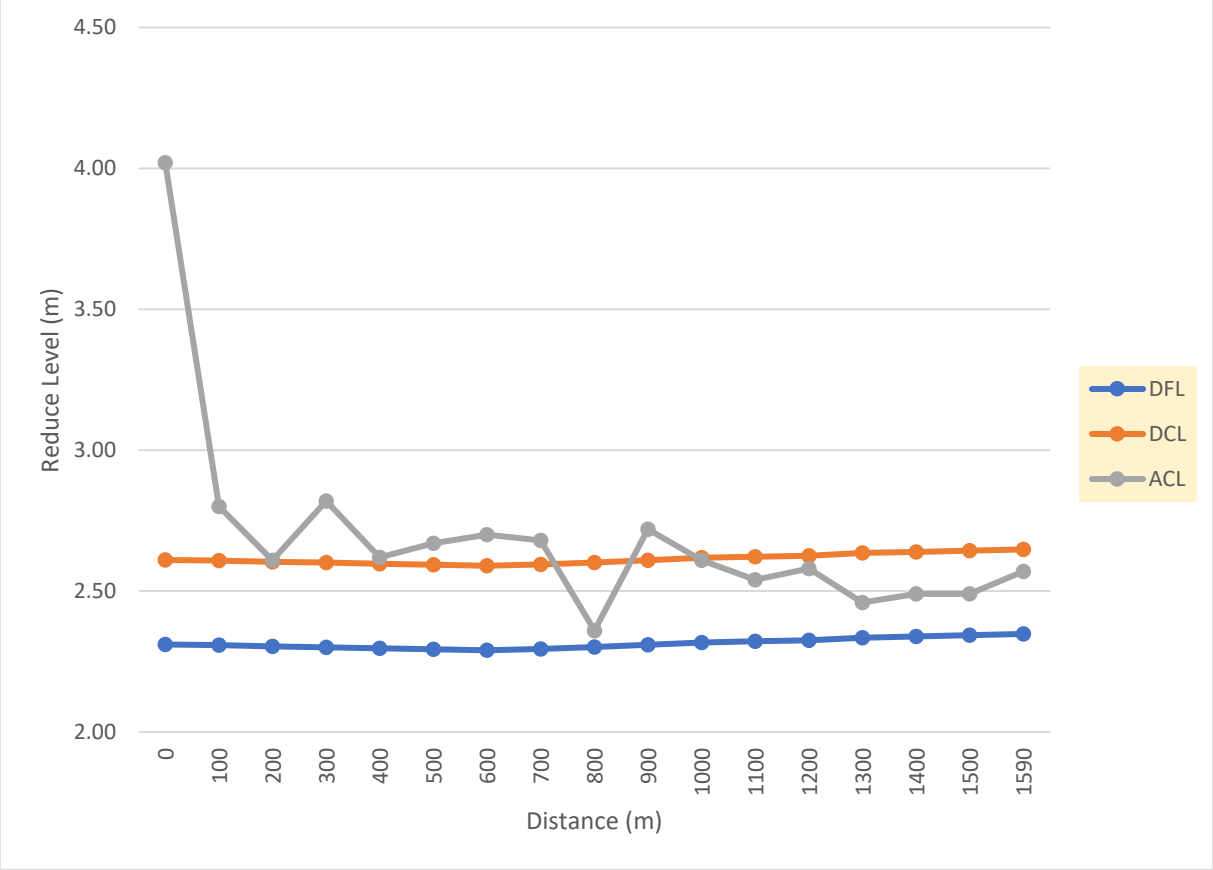


Figure 65: Tuakau: East Compartment Stopbank

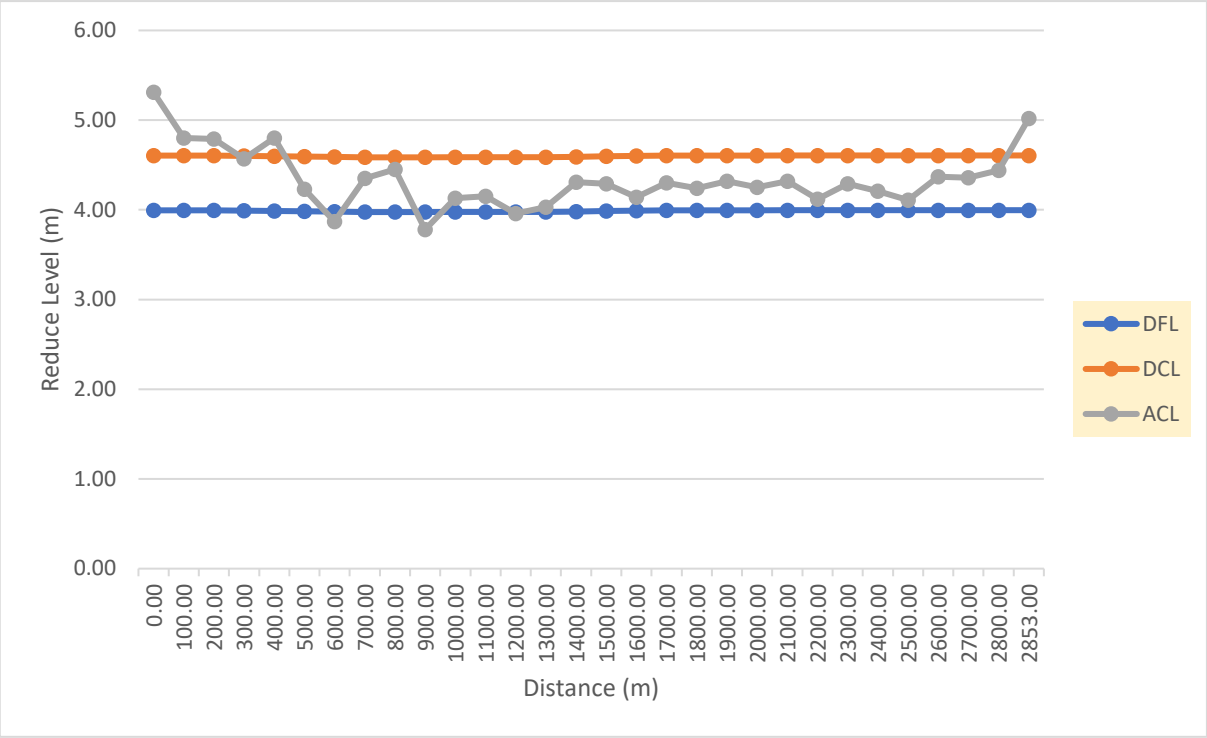


Figure 66: Tuakau: West Compartment Stopbank

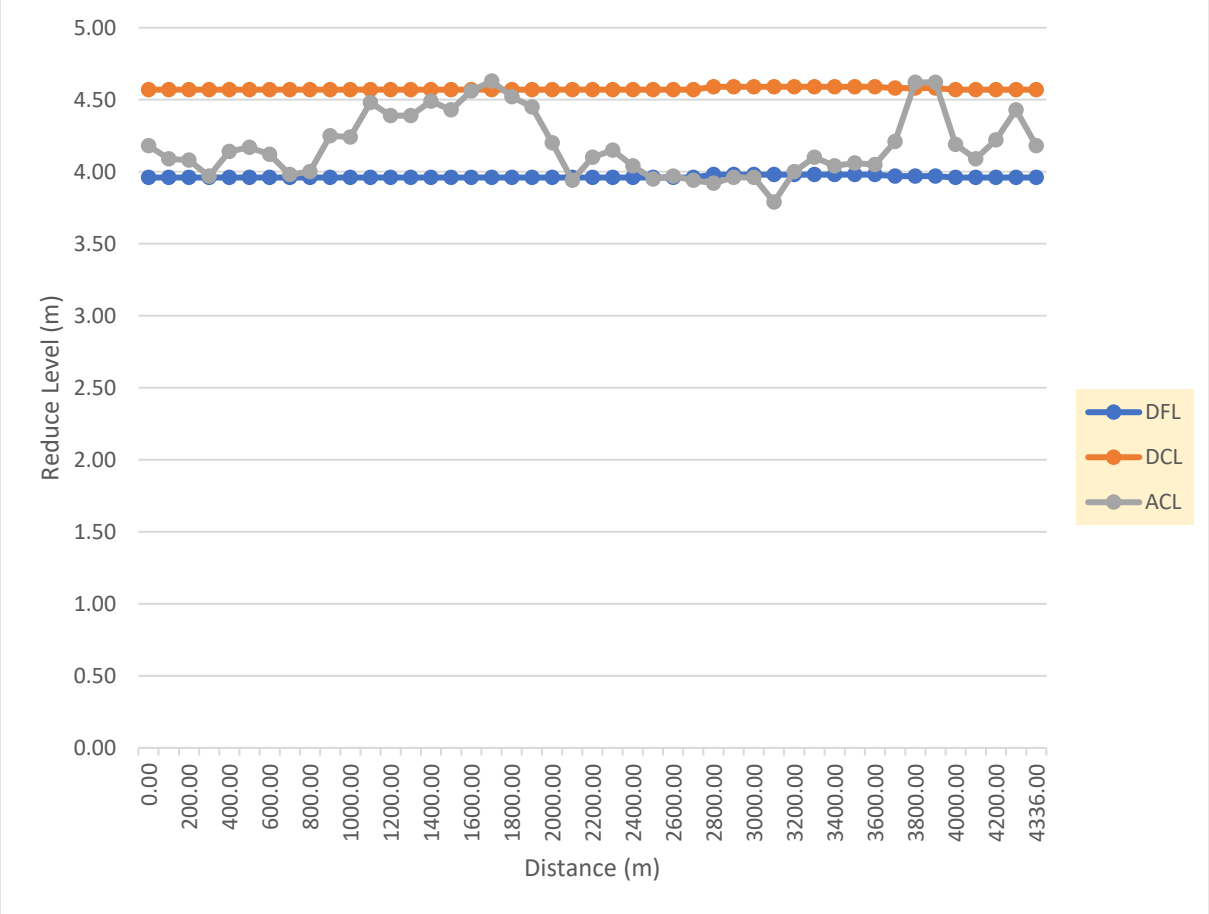


Figure 67: Whiskey Flats Eastern Comp Stopbank

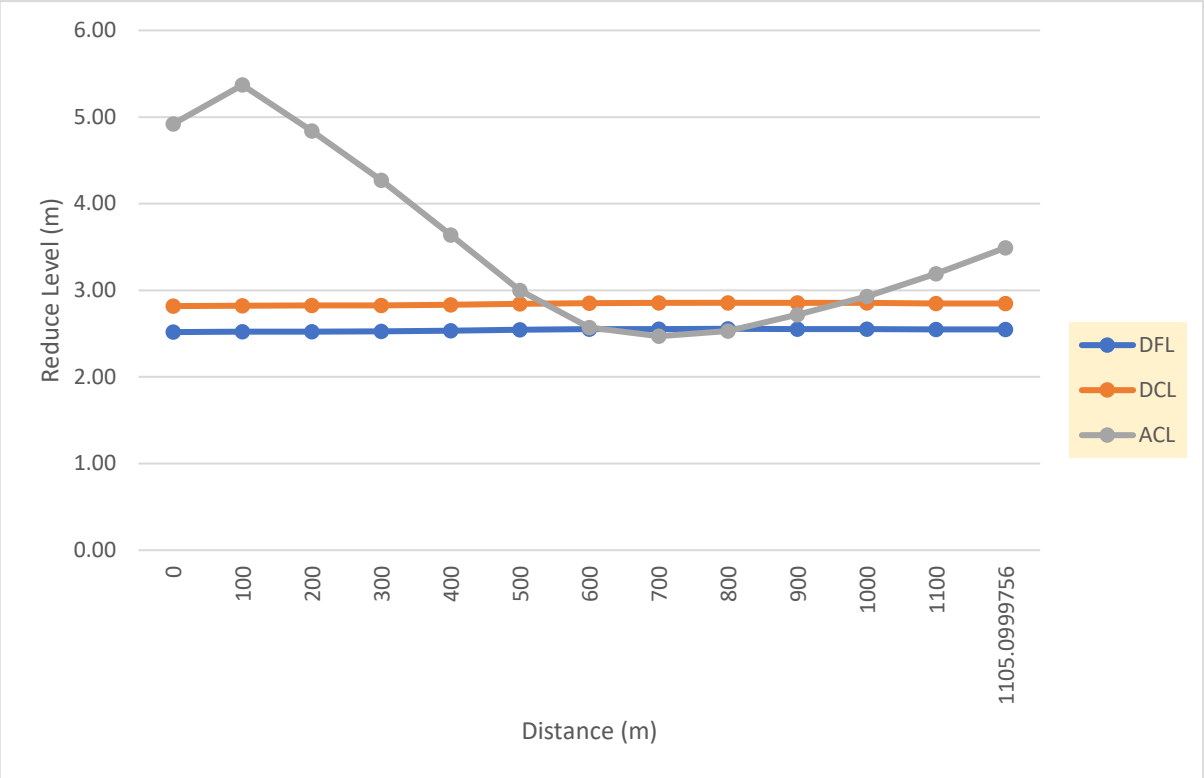


Figure 68: Whiskey Flats Western Comp Stopbank

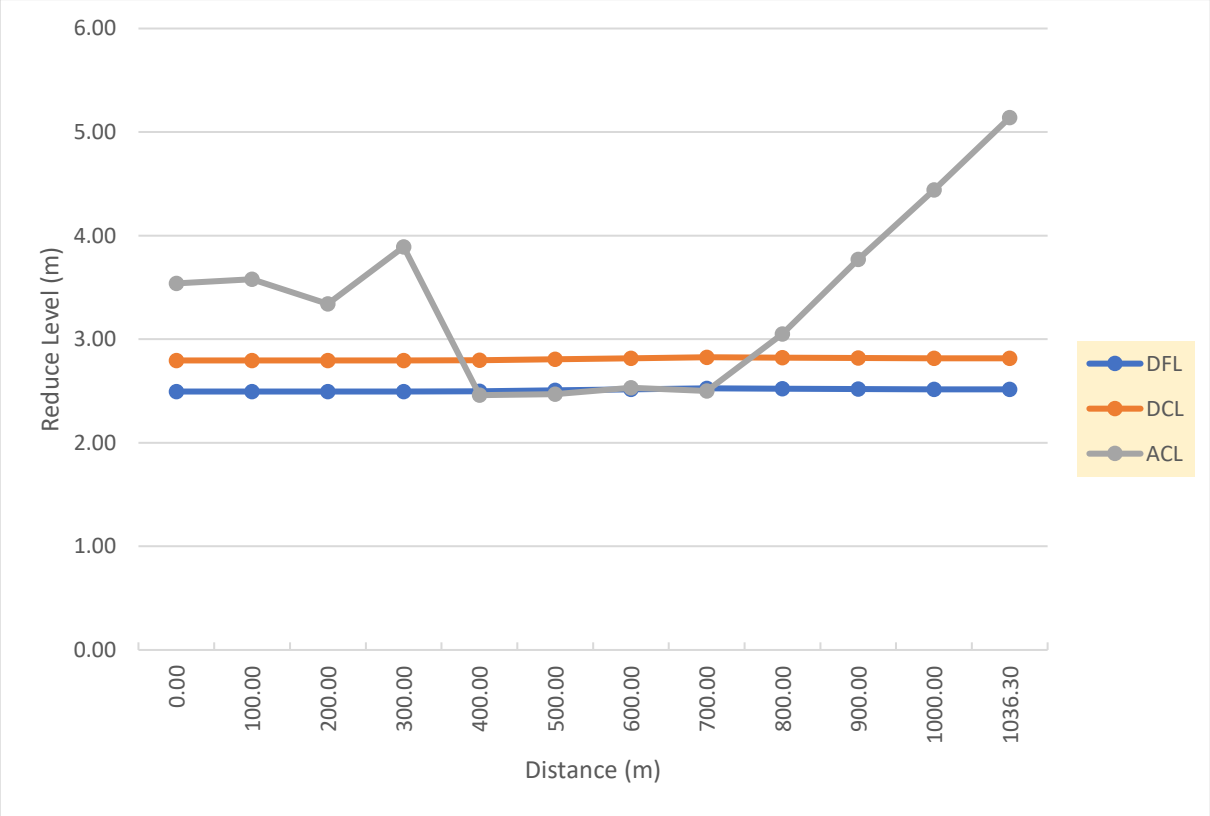


Figure 69: Wool Scourers to Fosters Landing Stopbank

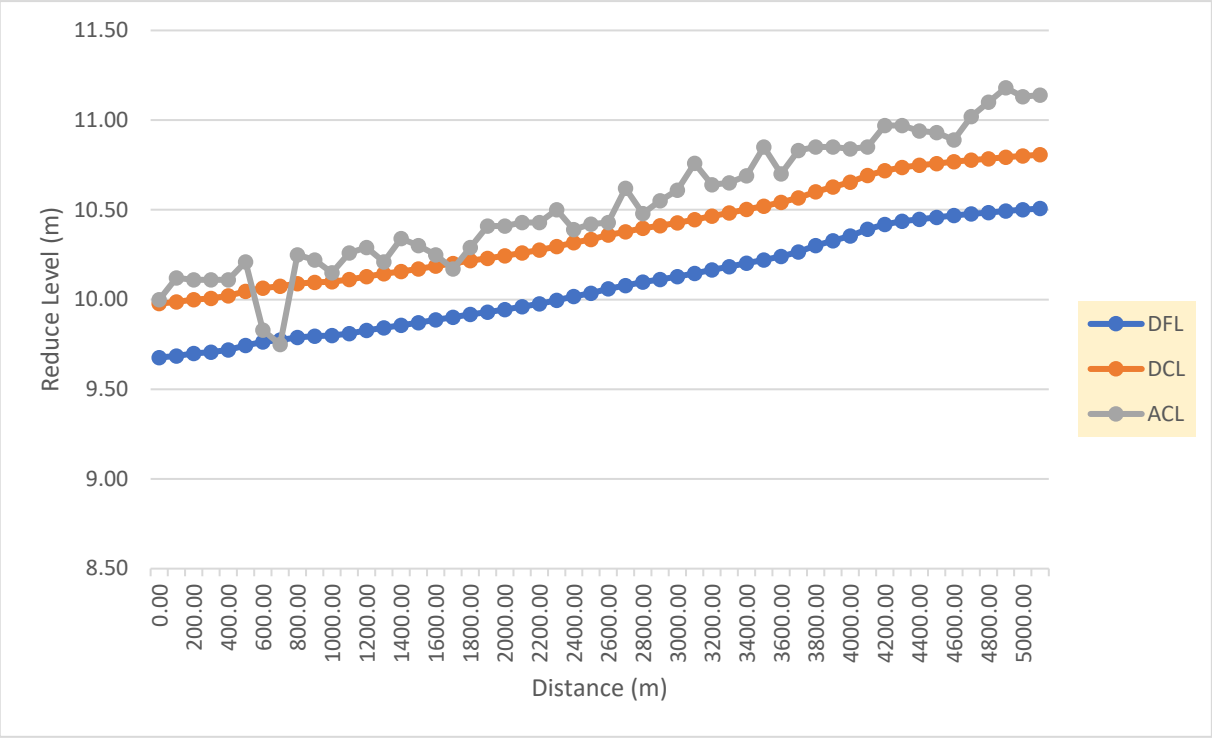


Figure 70: Mangatawhiri Compartment 5 (Miller Farlane)

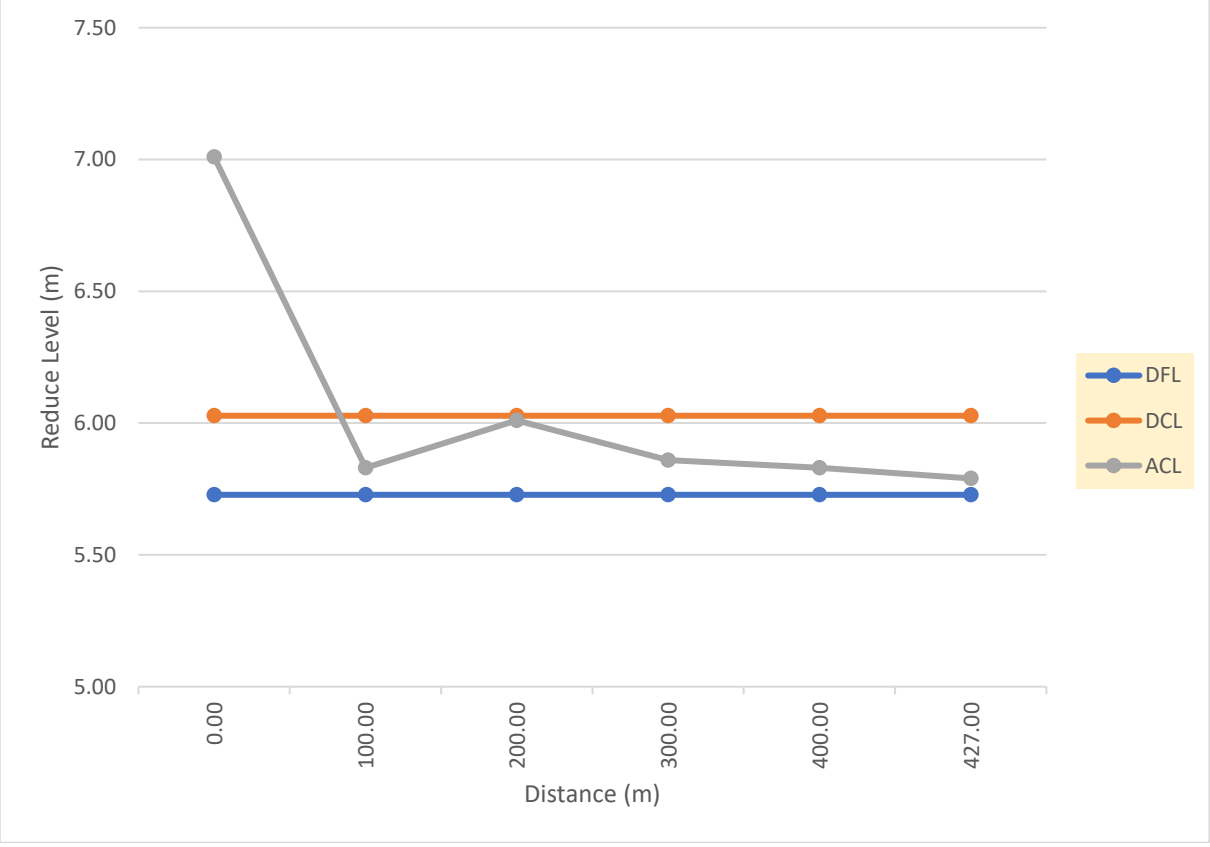


Figure 71: Deroles Main Stopbank

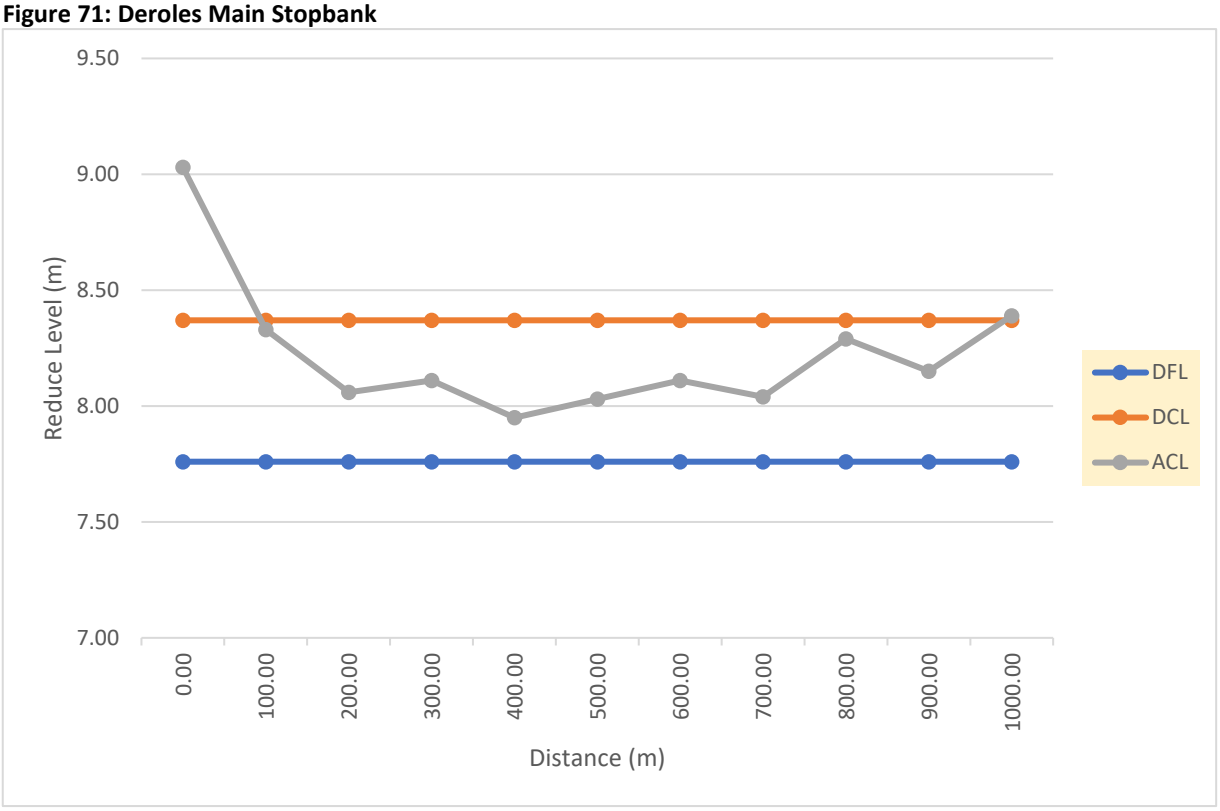


Figure 72: Deroles Return Stopbank

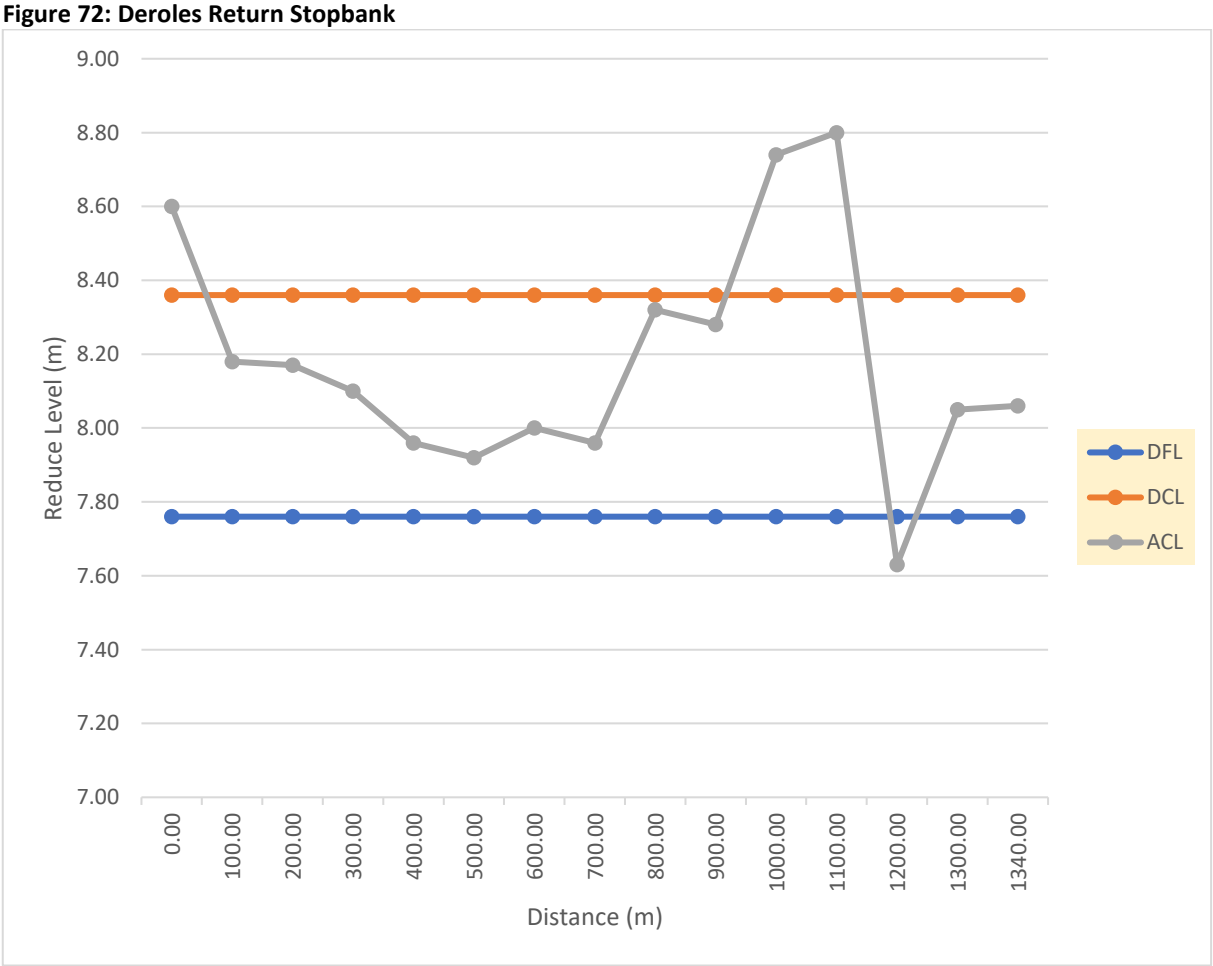


Figure 73: Furniss Downstream Stopbank

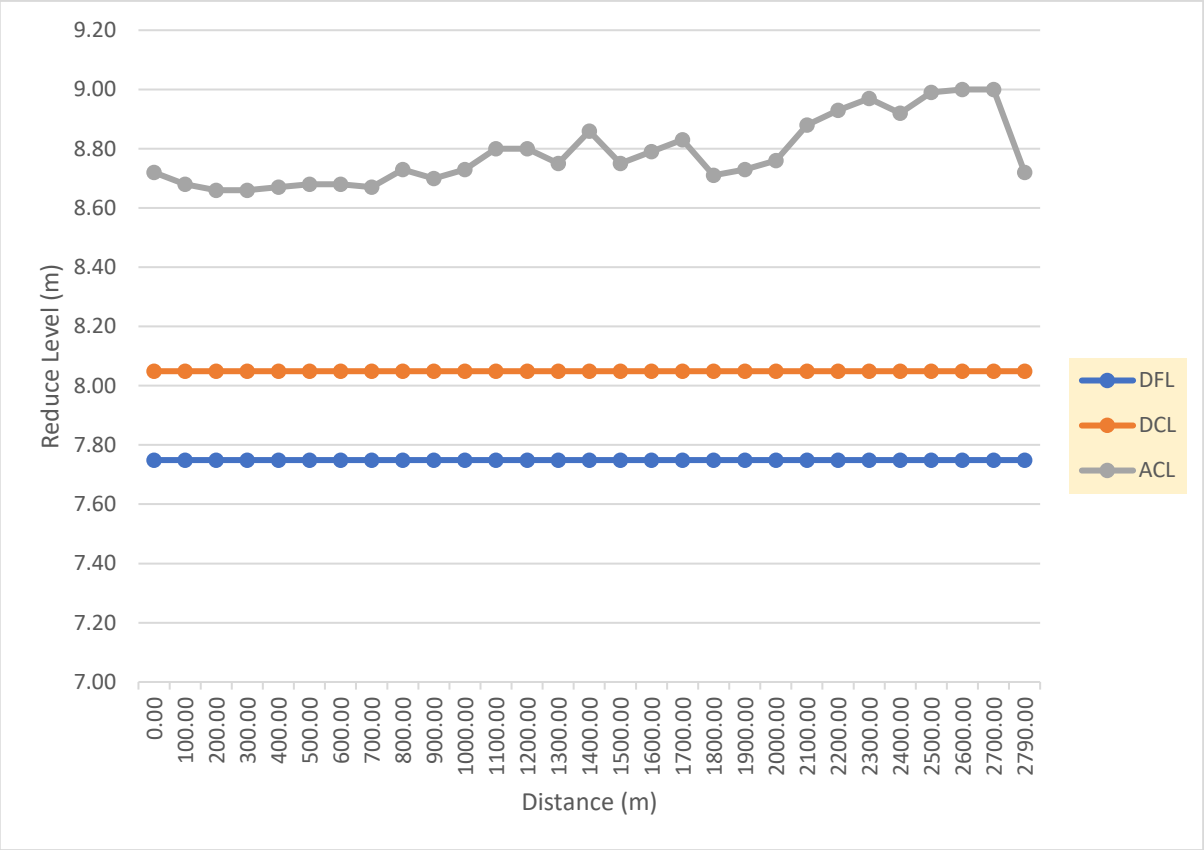


Figure 74: Furniss Upstream Stopbank

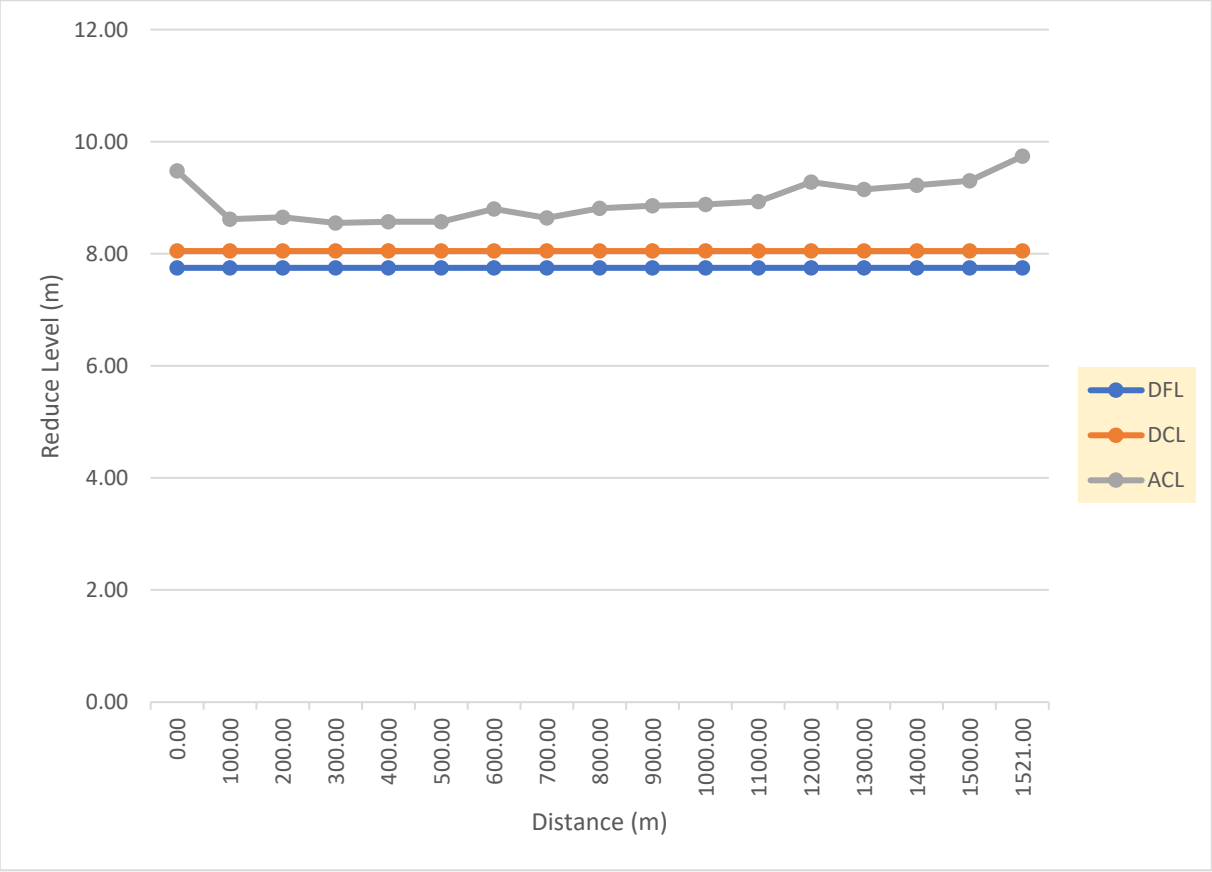
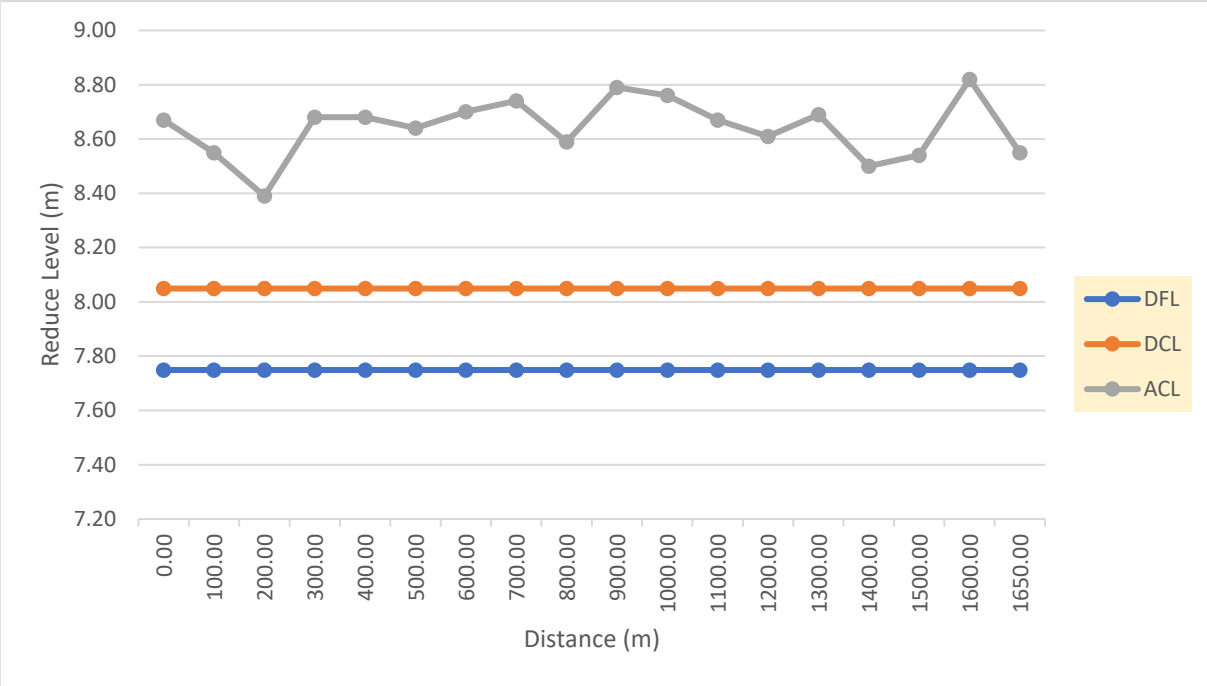


Figure 75: Harveys Stopbank



Appendix 6: Stopbank Performance Assessment

Table 8: Stopbank service level data (Current Climate)

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
24343	59682	Aka Aka Otaua (Mangawhero) SB 00	0	0.30	10	Tidal surge	2021	1182	2.94	3.24	4.39	1.45	1/12/2021	1
24343	2462	Aka Aka Otaua (Mangawhero) SB 01	100	0.30	10	Tidal surge	2021	1182	2.95	3.25	3.44	0.49	1/12/2021	1
24343	2463	Aka Aka Otaua (Mangawhero) SB 02	200	0.30	10	Tidal surge	2021	1182	2.96	3.26	3.31	0.35	1/12/2021	1
24343	2464	Aka Aka Otaua (Mangawhero) SB 03	263	0.30	10	Tidal surge	2021	1182	2.96	3.26	3.25	0.29	1/12/2021	2
22879	59589	Aka Aka Otaua Buffer SB 00	0	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.30	-0.05	23/01/2014	5
22879	2999	Aka Aka Otaua Buffer SB 01	100	0.20	2	Tidal surge	2021	1559	2.35	2.55	1.78	-0.57	23/01/2014	5
22879	3000	Aka Aka Otaua Buffer SB 02	200	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.10	-0.25	23/01/2014	5
22879	3001	Aka Aka Otaua Buffer SB 03	300	0.20	2	Tidal surge	2021	1559	2.35	2.55	1.95	-0.40	23/01/2014	5
22879	3002	Aka Aka Otaua Buffer SB 04	400	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.06	-0.29	23/01/2014	5
22879	3003	Aka Aka Otaua Buffer SB 05	500	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.36	0.01	23/01/2014	4
22879	3004	Aka Aka Otaua Buffer SB 06	600	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.03	-0.32	23/01/2014	5
22879	3005	Aka Aka Otaua Buffer SB 07	700	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.02	-0.33	23/01/2014	5
22879	3006	Aka Aka Otaua Buffer SB 08	800	0.20	2	Tidal surge	2021	1559	2.35	2.55	1.99	-0.36	23/01/2014	5
22879	3007	Aka Aka Otaua Buffer SB 09	900	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.22	-0.13	23/01/2014	5
22879	3008	Aka Aka Otaua Buffer SB 10	1000	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.30	-0.05	23/01/2014	5
22879	3009	Aka Aka Otaua Buffer SB 11	1100	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.35	0.00	23/01/2014	4
22879	3010	Aka Aka Otaua Buffer SB 12	1200	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.26	-0.09	23/01/2014	5
22879	3011	Aka Aka Otaua Buffer SB 13	1300	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.15	-0.20	23/01/2014	5
22879	3012	Aka Aka Otaua Buffer SB 14	1400	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.30	-0.05	23/01/2014	5
22879	3013	Aka Aka Otaua Buffer SB 15	1500	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.13	-0.22	23/01/2014	5
22879	3014	Aka Aka Otaua Buffer SB 16	1600	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.27	-0.08	23/01/2014	5

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
22879	3015	Aka Aka Otaua Buffer SB 17	1700	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.53	0.18	23/01/2014	2
22879	3016	Aka Aka Otaua Buffer SB 18	1800	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.34	-0.01	23/01/2014	5
22879	3017	Aka Aka Otaua Buffer SB 19	1900	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.58	0.23	23/01/2014	1
22879	3018	Aka Aka Otaua Buffer SB 20	2000	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.29	-0.06	23/01/2014	5
22879	3019	Aka Aka Otaua Buffer SB 21	2100	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.30	-0.05	23/01/2014	5
22879	3020	Aka Aka Otaua Buffer SB 22	2200	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.06	-0.29	23/01/2014	5
22879	3021	Aka Aka Otaua Buffer SB 23	2300	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.30	-0.05	23/01/2014	5
22879	3022	Aka Aka Otaua Buffer SB 24	2400	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.19	-0.16	23/01/2014	5
22879	3023	Aka Aka Otaua Buffer SB 25	2500	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.09	-0.26	23/01/2014	5
22879	3024	Aka Aka Otaua Buffer SB 26	2600	0.20	2	Tidal surge	2021	1557	2.35	2.55	1.93	-0.42	23/01/2014	5
22879	3010	Aka Aka Otaua Buffer SB 12	1200	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.26	-0.09	23/01/2014	5
22879	3011	Aka Aka Otaua Buffer SB 13	1300	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.15	-0.20	23/01/2014	5
22879	3012	Aka Aka Otaua Buffer SB 14	1400	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.30	-0.05	23/01/2014	5
22879	3013	Aka Aka Otaua Buffer SB 15	1500	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.13	-0.22	23/01/2014	5
22879	3014	Aka Aka Otaua Buffer SB 16	1600	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.27	-0.08	23/01/2014	5
22879	3015	Aka Aka Otaua Buffer SB 17	1700	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.53	0.18	23/01/2014	2
22879	3016	Aka Aka Otaua Buffer SB 18	1800	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.34	-0.01	23/01/2014	5
22879	3017	Aka Aka Otaua Buffer SB 19	1900	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.58	0.23	23/01/2014	1
22879	3018	Aka Aka Otaua Buffer SB 20	2000	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.29	-0.06	23/01/2014	5
22879	3019	Aka Aka Otaua Buffer SB 21	2100	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.30	-0.05	23/01/2014	5
22879	3020	Aka Aka Otaua Buffer SB 22	2200	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.06	-0.29	23/01/2014	5
22879	3021	Aka Aka Otaua Buffer SB 23	2300	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.30	-0.05	23/01/2014	5
22879	3022	Aka Aka Otaua Buffer SB 24	2400	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.19	-0.16	23/01/2014	5
22879	3023	Aka Aka Otaua Buffer SB 25	2500	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.09	-0.26	23/01/2014	5
22879	3024	Aka Aka Otaua Buffer SB 26	2600	0.20	2	Tidal surge	2021	1557	2.35	2.55	1.93	-0.42	23/01/2014	5

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
22879	3010	Aka Aka Otaua Buffer SB 12	1200	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.26	-0.09	23/01/2014	5
22879	3011	Aka Aka Otaua Buffer SB 13	1300	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.15	-0.20	23/01/2014	5
22879	3012	Aka Aka Otaua Buffer SB 14	1400	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.30	-0.05	23/01/2014	5
22879	3013	Aka Aka Otaua Buffer SB 15	1500	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.13	-0.22	23/01/2014	5
22879	3014	Aka Aka Otaua Buffer SB 16	1600	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.27	-0.08	23/01/2014	5
22879	3015	Aka Aka Otaua Buffer SB 17	1700	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.53	0.18	23/01/2014	2
22879	3016	Aka Aka Otaua Buffer SB 18	1800	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.34	-0.01	23/01/2014	5
22879	3017	Aka Aka Otaua Buffer SB 19	1900	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.58	0.23	23/01/2014	1
22879	3018	Aka Aka Otaua Buffer SB 20	2000	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.29	-0.06	23/01/2014	5
22879	3019	Aka Aka Otaua Buffer SB 21	2100	0.20	2	Tidal surge	2021	1559	2.35	2.55	2.30	-0.05	23/01/2014	5
22879	3020	Aka Aka Otaua Buffer SB 22	2200	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.06	-0.29	23/01/2014	5
22879	3021	Aka Aka Otaua Buffer SB 23	2300	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.30	-0.05	23/01/2014	5
22879	3022	Aka Aka Otaua Buffer SB 24	2400	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.19	-0.16	23/01/2014	5
22879	3023	Aka Aka Otaua Buffer SB 25	2500	0.20	2	Tidal surge	2021	1557	2.35	2.55	2.09	-0.26	23/01/2014	5
22879	3024	Aka Aka Otaua Buffer SB 26	2600	0.20	2	Tidal surge	2021	1557	2.35	2.55	1.93	-0.42	23/01/2014	5
25073	2374	Aka Aka Otaua SB 012	1200	0.30	100	Tidal surge	2021	1564	2.68	2.98	2.55	-0.13	1/12/2011	5
25073	2375	Aka Aka Otaua SB 013	1300	0.30	100	Tidal surge	2021	1564	2.68	2.98	2.82	0.14	1/12/2011	3
25073	2376	Aka Aka Otaua SB 014	1400	0.30	100	Tidal surge	2021	1564	2.68	2.98	2.95	0.27	1/12/2011	2
25073	2377	Aka Aka Otaua SB 015	1500	0.30	100	Tidal surge	2021	1563	2.68	2.98	2.92	0.24	1/12/2011	2
25073	2378	Aka Aka Otaua SB 016	1600	0.30	100	Tidal surge	2021	1563	2.68	2.98	2.96	0.28	1/12/2011	2
25073	2379	Aka Aka Otaua SB 017	1700	0.30	100	Tidal surge	2021	1563	2.68	2.98	2.95	0.27	1/12/2011	2
25073	2380	Aka Aka Otaua SB 018	1800	0.30	100	Tidal surge	2021	1563	2.68	2.98	2.88	0.20	1/12/2011	2
25073	2381	Aka Aka Otaua SB 019	1900	0.30	100	Tidal surge	2021	1563	2.68	2.98	2.92	0.24	18/06/2015	2
25073	2382	Aka Aka Otaua SB 020	2000	0.30	100	Tidal surge	2021	1563	2.68	2.98	2.74	0.06	18/06/2015	4
25073	2383	Aka Aka Otaua SB 021	2100	0.30	100	Tidal surge	2021	1563	2.68	2.98	2.95	0.27	18/06/2015	2

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
25073	2384	Aka Aka Otaua SB 022	2200	0.30	100	Tidal surge	2021	1563	2.68	2.98	3.04	0.36	18/06/2015	1
25073	2385	Aka Aka Otaua SB 023	2300	0.30	100	Tidal surge	2021	1563	2.68	2.98	2.99	0.31	18/06/2015	1
25073	2386	Aka Aka Otaua SB 024	2400	0.30	100	Tidal surge	2021	1563	2.68	2.98	2.98	0.30	18/06/2015	1
25073	2387	Aka Aka Otaua SB 025	2500	0.30	100	Tidal surge	2021	1563	2.68	2.98	2.83	0.15	18/06/2015	2
25073	2388	Aka Aka Otaua SB 026	2600	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.90	0.22	18/06/2015	2
25073	2389	Aka Aka Otaua SB 027	2700	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.14	-0.54	18/06/2015	5
25073	2390	Aka Aka Otaua SB 028	2800	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.72	0.04	18/06/2015	4
25073	2391	Aka Aka Otaua SB 029	2900	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.67	-0.01	18/06/2015	5
25073	2392	Aka Aka Otaua SB 030	3000	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.84	0.16	18/06/2015	2
25073	2393	Aka Aka Otaua SB 031	3100	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.80	0.12	18/06/2015	3
25073	2394	Aka Aka Otaua SB 032	3200	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.84	0.16	18/06/2015	2
25073	2395	Aka Aka Otaua SB 033	3300	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.89	0.21	18/06/2015	2
25073	2396	Aka Aka Otaua SB 034	3400	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.90	0.22	1/12/2019	2
25073	2397	Aka Aka Otaua SB 035	3500	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.81	0.13	1/12/2019	3
25073	2398	Aka Aka Otaua SB 036	3600	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.84	0.16	1/12/2019	2
25073	2399	Aka Aka Otaua SB 037	3700	0.30	100	Tidal surge	2021	1561	2.68	2.98	2.86	0.18	1/12/2019	2
25073	2400	Aka Aka Otaua SB 038	3800	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.89	0.21	1/12/2019	2
25073	2401	Aka Aka Otaua SB 039	3900	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.86	0.18	1/12/2019	2
25073	2402	Aka Aka Otaua SB 040	4000	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.91	0.23	1/12/2019	2
25073	2403	Aka Aka Otaua SB 041	4100	0.30	100	Tidal surge	2021	1560	2.68	2.98	3.01	0.33	1/12/2019	1
25073	2389	Aka Aka Otaua SB 027	2700	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.14	-0.54	18/06/2015	5
25073	2390	Aka Aka Otaua SB 028	2800	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.72	0.04	18/06/2015	4
25073	2391	Aka Aka Otaua SB 029	2900	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.67	-0.01	18/06/2015	5
25073	2392	Aka Aka Otaua SB 030	3000	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.84	0.16	18/06/2015	2
25073	2393	Aka Aka Otaua SB 031	3100	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.80	0.12	18/06/2015	3

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
25073	2394	Aka Aka Otaua SB 032	3200	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.84	0.16	18/06/2015	2
25073	2395	Aka Aka Otaua SB 033	3300	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.89	0.21	18/06/2015	2
25073	2396	Aka Aka Otaua SB 034	3400	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.90	0.22	1/12/2019	2
25073	2397	Aka Aka Otaua SB 035	3500	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.81	0.13	1/12/2019	3
25073	2398	Aka Aka Otaua SB 036	3600	0.30	100	Tidal surge	2021	1562	2.68	2.98	2.84	0.16	1/12/2019	2
25073	2399	Aka Aka Otaua SB 037	3700	0.30	100	Tidal surge	2021	1561	2.68	2.98	2.86	0.18	1/12/2019	2
25073	2400	Aka Aka Otaua SB 038	3800	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.89	0.21	1/12/2019	2
25073	2401	Aka Aka Otaua SB 039	3900	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.86	0.18	1/12/2019	2
25073	2402	Aka Aka Otaua SB 040	4000	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.91	0.23	1/12/2019	2
25073	2403	Aka Aka Otaua SB 041	4100	0.30	100	Tidal surge	2021	1560	2.68	2.98	3.01	0.33	1/12/2019	1
25073	2404	Aka Aka Otaua SB 042	4200	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.84	0.16	1/12/2011	2
25073	2406	Aka Aka Otaua SB 043	4300	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.84	0.16	1/12/2011	2
25073	2407	Aka Aka Otaua SB 044	4400	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.87	0.19	1/12/2011	2
25073	2408	Aka Aka Otaua SB 045	4500	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.88	0.20	1/12/2011	2
25073	2409	Aka Aka Otaua SB 046	4600	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.93	0.25	1/12/2011	2
25073	2410	Aka Aka Otaua SB 047	4700	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.88	0.20	1/12/2011	2
25073	2411	Aka Aka Otaua SB 048	4800	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.97	0.29	1/12/2011	2
25073	2412	Aka Aka Otaua SB 049	4900	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.97	0.29	1/12/2011	2
25073	2413	Aka Aka Otaua SB 050	5000	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.92	0.24	1/12/2011	2
25073	2414	Aka Aka Otaua SB 051	5100	0.30	100	Tidal surge	2021	1560	2.68	2.98	2.85	0.17	1/12/2011	2
25073	2415	Aka Aka Otaua SB 052	5200	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.95	0.27	1/12/2011	2
25073	2416	Aka Aka Otaua SB 053	5300	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.86	0.18	1/12/2011	2
25073	2417	Aka Aka Otaua SB 054	5400	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.95	0.27	1/12/2011	2
25073	2418	Aka Aka Otaua SB 055	5500	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.92	0.24	1/12/2011	2
25073	2419	Aka Aka Otaua SB 056	5600	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.87	0.19	1/12/2011	2

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
25073	2420	Aka Aka Otaua SB 057	5700	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.92	0.24	1/12/2011	2
25073	2421	Aka Aka Otaua SB 058	5800	0.30	100	Tidal surge	2021	1559	2.68	2.98	3.03	0.35	1/12/2011	1
25073	2422	Aka Aka Otaua SB 059	5900	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.96	0.28	1/12/2011	2
25073	2423	Aka Aka Otaua SB 060	6000	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.90	0.22	1/12/2011	2
25073	2424	Aka Aka Otaua SB 061	6100	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.76	0.08	1/12/2011	3
25073	2425	Aka Aka Otaua SB 062	6200	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.86	0.18	1/12/2011	2
25073	2426	Aka Aka Otaua SB 063	6300	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.95	0.27	1/12/2011	2
25073	2427	Aka Aka Otaua SB 064	6400	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.95	0.27	1/12/2011	2
25073	2428	Aka Aka Otaua SB 065	6500	0.30	100	Tidal surge	2021	1559	2.68	2.98	3.05	0.37	1/12/2011	1
25073	2429	Aka Aka Otaua SB 066	6600	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.95	0.27	1/12/2011	2
25073	2430	Aka Aka Otaua SB 067	6700	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.92	0.24	1/12/2011	2
25073	2431	Aka Aka Otaua SB 068	6800	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.92	0.24	1/12/2011	2
25073	2432	Aka Aka Otaua SB 069	6900	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.81	0.13	1/12/2011	3
25073	2433	Aka Aka Otaua SB 070	7000	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.86	0.18	1/12/2011	2
25073	2434	Aka Aka Otaua SB 071	7100	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.96	0.28	1/12/2011	2
25073	2435	Aka Aka Otaua SB 072	7200	0.30	100	Tidal surge	2021	1559	2.68	2.98	3.00	0.32	1/12/2011	1
25073	2436	Aka Aka Otaua SB 073	7300	0.30	100	Tidal surge	2021	1559	2.68	2.98	3.02	0.34	1/12/2011	1
25073	2437	Aka Aka Otaua SB 074	7400	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.53	-0.15	1/12/2011	5
25073	2438	Aka Aka Otaua SB 075	7500	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.83	0.15	1/12/2011	2
25073	2439	Aka Aka Otaua SB 076	7600	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.45	-0.23	1/12/2011	5
25073	2440	Aka Aka Otaua SB 077	7700	0.30	100	Tidal surge	2021	1559	2.68	2.98	3.04	0.36	15/06/2016	1
25073	2441	Aka Aka Otaua SB 078	7800	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.96	0.28	15/06/2016	2
25073	2442	Aka Aka Otaua SB 079	7900	0.30	100	Tidal surge	2021	1559	2.68	2.98	3.02	0.34	15/06/2016	1
25073	2443	Aka Aka Otaua SB 080	8000	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.98	0.30	15/06/2016	1
25073	2444	Aka Aka Otaua SB 081	8100	0.30	100	Tidal surge	2021	1559	2.68	2.98	2.95	0.27	15/06/2016	2

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25073	2445	Aka Aka Otaua SB 082	8200	0.30	100	Tidal surge	2021	1557	2.68	2.98	2.95	0.27	15/06/2016	2
25073	2446	Aka Aka Otaua SB 083	8300	0.30	100	Tidal surge	2021	1557	2.68	2.98	2.91	0.23	15/06/2016	2
25073	2447	Aka Aka Otaua SB 084	8400	0.30	100	Tidal surge	2021	1557	2.68	2.98	2.82	0.14	15/06/2016	3
25073	2448	Aka Aka Otaua SB 085	8500	0.30	100	Tidal surge	2021	1557	2.68	2.98	2.94	0.26	15/04/2016	2
25073	2449	Aka Aka Otaua SB 086	8600	0.30	100	Tidal surge	2021	1557	2.68	2.98	3.12	0.44	15/04/2016	1
25073	2450	Aka Aka Otaua SB 087	8700	0.30	100	Tidal surge	2021	1557	2.68	2.98	3.09	0.41	15/04/2016	1
25073	2451	Aka Aka Otaua SB 088	8800	0.30	100	Tidal surge	2021	1557	2.68	2.98	3.08	0.40	15/04/2016	1
25073	2452	Aka Aka Otaua SB 089	8900	0.30	100	Tidal surge	2021	1557	2.68	2.98	3.09	0.41	15/04/2016	1
25073	2453	Aka Aka Otaua SB 090	9000	0.30	100	Tidal surge	2021	1556	2.68	2.98	3.11	0.43	15/04/2016	1
25073	2454	Aka Aka Otaua SB 091	9100	0.30	100	Tidal surge	2021	1555	2.68	2.98	3.13	0.45	15/04/2016	1
25073	2455	Aka Aka Otaua SB 092	9200	0.30	100	Tidal surge	2021	1555	2.68	2.98	3.12	0.44	15/04/2016	1
25073	2456	Aka Aka Otaua SB 093	9300	0.30	100	Tidal surge	2021	1553	2.68	2.98	3.14	0.46	15/04/2016	1
25073	2457	Aka Aka Otaua SB 094	9400	0.30	100	Tidal surge	2021	1553	2.68	2.98	3.21	0.53	15/04/2016	1
25073	2458	Aka Aka Otaua SB 095	9500	0.30	100	Tidal surge	2021	1552	2.68	2.98	3.22	0.54	15/04/2016	1
25073	2459	Aka Aka Otaua SB 096	9600	0.30	100	Tidal surge	2021	1552	2.68	2.98	3.22	0.54	15/04/2016	1
25073	2460	Aka Aka Otaua SB 097	9700	0.30	100	Tidal surge	2021	1552	2.68	2.98	3.06	0.38	1/12/2019	1
25073	2461	Aka Aka Otaua SB 098	9800	0.30	100	Tidal surge	2021	1552	2.68	2.98	3.15	0.47	1/12/2019	1
25073	1678	Aka Aka Otaua SB 099	9900	0.30	100	Tidal surge	2021	1551	2.68	2.98	3.13	0.45	1/12/2019	1
25073	1679	Aka Aka Otaua SB 100	10000	0.30	100	Tidal surge	2021	1551	2.68	2.98	3.17	0.49	1/12/2019	1
25073	1680	Aka Aka Otaua SB 101	10100	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.10	0.42	1/12/2019	1
25073	1681	Aka Aka Otaua SB 102	10200	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.07	0.39	1/12/2019	1
25073	1682	Aka Aka Otaua SB 103	10300	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.22	0.54	1/12/2019	1
25073	1683	Aka Aka Otaua SB 104	10400	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.15	0.47	1/12/2011	1
25073	1684	Aka Aka Otaua SB 105	10500	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.14	0.46	1/12/2019	1
25073	1685	Aka Aka Otaua SB 106	10600	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.18	0.50	1/12/2019	1

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25073	1686	Aka Aka Otaua SB 107	10700	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.14	0.46	1/12/2019	1
25073	1687	Aka Aka Otaua SB 108	10800	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.12	0.44	1/12/2019	1
25073	1688	Aka Aka Otaua SB 109	10900	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.08	0.40	1/12/2019	1
25073	1689	Aka Aka Otaua SB 110	11000	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.11	0.43	1/12/2019	1
25073	1690	Aka Aka Otaua SB 111	11100	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.07	0.39	1/12/2019	1
25073	1691	Aka Aka Otaua SB 112	11200	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.10	0.42	1/12/2011	1
25073	1692	Aka Aka Otaua SB 113	11300	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.21	0.53	1/12/2011	1
25073	1693	Aka Aka Otaua SB 114	11400	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.18	0.50	1/12/2011	1
25073	1694	Aka Aka Otaua SB 115	11500	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.22	0.54	1/12/2011	1
25073	1695	Aka Aka Otaua SB 116	11600	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.22	0.54	1/12/2011	1
25073	1696	Aka Aka Otaua SB 117	11700	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.25	0.57	1/12/2011	1
25073	1697	Aka Aka Otaua SB 118	11800	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.20	0.52	1/12/2011	1
25073	1698	Aka Aka Otaua SB 119	11900	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.24	0.56	1/12/2011	1
25073	1699	Aka Aka Otaua SB 120	12000	0.30	100	Tidal surge	2021	1550	2.68	2.98	3.26	0.58	1/12/2011	1
25073	1700	Aka Aka Otaua SB 121	12100	0.30	100	Tidal surge	2021	1549	2.71	3.01	3.28	0.57	1/12/2011	1
25073	1701	Aka Aka Otaua SB 122	12200	0.30	100	Tidal surge	2021	1549	2.71	3.01	3.14	0.43	1/12/2011	1
25073	1702	Aka Aka Otaua SB 123	12300	0.30	100	Tidal surge	2021	1549	2.76	3.06	3.21	0.45	1/12/2011	1
25073	1703	Aka Aka Otaua SB 124	12400	0.30	100	Tidal surge	2021	1549	2.76	3.06	3.22	0.46	1/12/2011	1
25073	1704	Aka Aka Otaua SB 125	12500	0.30	100	Tidal surge	2021	1549	2.77	3.07	3.39	0.62	29/04/2019	1
25073	1705	Aka Aka Otaua SB 126	12600	0.30	100	Tidal surge	2021	1549	2.77	3.07	3.23	0.47	29/04/2019	1
25073	1706	Aka Aka Otaua SB 127	12700	0.30	100	Tidal surge	2021	1549	2.77	3.07	3.28	0.51	29/04/2019	1
25073	1707	Aka Aka Otaua SB 128	12800	0.30	100	Tidal surge	2021	1549	2.78	3.08	3.45	0.67	29/04/2019	1
25073	1708	Aka Aka Otaua SB 129	12900	0.30	100	Tidal surge	2021	1549	2.78	3.08	3.51	0.73	29/04/2019	1
25073	1709	Aka Aka Otaua SB 130	13000	0.30	100	Tidal surge	2021	1549	2.78	3.08	3.51	0.73	29/04/2019	1
25073	1710	Aka Aka Otaua SB 131	13100	0.30	100	Tidal surge	2021	1549	2.78	3.08	3.32	0.54	29/04/2019	1

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25073	1711	Aka Aka Otaua SB 132	13200	0.30	100	Tidal surge	2021	1549	2.86	3.16	3.45	0.59	29/04/2019	1
25073	1712	Aka Aka Otaua SB 133	13300	0.30	100	Tidal surge	2021	1549	2.86	3.16	3.61	0.75	29/04/2019	1
25073	1713	Aka Aka Otaua SB 134	13400	0.30	100	Tidal surge	2021	1549	2.86	3.16	3.63	0.77	29/04/2019	1
25073	1714	Aka Aka Otaua SB 135	13500	0.30	100	Tidal surge	2021	1549	2.86	3.16	3.52	0.66	1/12/2011	1
25073	1715	Aka Aka Otaua SB 136	13600	0.30	100	Tidal surge	2021	1549	2.87	3.17	3.56	0.69	1/12/2011	1
25073	1716	Aka Aka Otaua SB 137	13700	0.30	100	Tidal surge	2021	1549	2.88	3.18	3.28	0.40	1/12/2011	1
25073	1717	Aka Aka Otaua SB 138	13800	0.30	100	Tidal surge	2021	1549	2.89	3.19	3.65	0.76	1/12/2011	1
25073	1718	Aka Aka Otaua SB 139	13865	0.30	100	Tidal surge	2021	1549	2.89	3.19	3.58	0.69	1/12/2011	1
27812	59707	Austins/Waikato Sect SB 00	0	0.30	100	River flow	2021	60	8.56	8.86	9.10	0.54	30/03/2013	1
27812	2699	Austins/Waikato Sect SB 01	100	0.30	100	River flow	2021	60	8.58	8.88	9.10	0.52	30/03/2013	1
27812	2700	Austins/Waikato Sect SB 02	200	0.30	100	River flow	2021	60	8.60	8.90	9.09	0.49	30/03/2013	1
27812	2701	Austins/Waikato Sect SB 03	300	0.30	100	River flow	2021	1461	8.62	8.92	9.14	0.52	30/03/2013	1
27812	2702	Austins/Waikato Sect SB 04	400	0.30	100	River flow	2021	1461	8.63	8.93	9.15	0.52	30/03/2013	1
27812	2703	Austins/Waikato Sect SB 05	500	0.30	100	River flow	2021	1461	8.64	8.94	9.17	0.53	30/03/2013	1
27812	2704	Austins/Waikato Sect SB 06	600	0.30	100	River flow	2021	1461	8.64	8.94	9.17	0.53	30/03/2013	1
27812	2705	Austins/Waikato Sect SB 07	700	0.30	100	River flow	2021	1461	8.65	8.95	9.16	0.51	30/03/2013	1
27812	2706	Austins/Waikato Sect SB 08	800	0.30	100	River flow	2021	1461	8.66	8.96	9.17	0.51	30/03/2013	1
27812	2707	Austins/Waikato Sect SB 09	900	0.30	100	River flow	2021	1461	8.68	8.98	9.15	0.48	30/03/2013	1
27812	2708	Austins/Waikato Sect SB 10	1000	0.30	100	River flow	2021	1461	8.69	8.99	9.12	0.43	30/03/2013	1
27812	2709	Austins/Waikato Sect SB 11	1100	0.30	100	River flow	2021	1461	8.70	9.00	9.14	0.44	30/03/2013	1
27812	2710	Austins/Waikato Sect SB 12	1200	0.30	100	River flow	2021	1461	8.71	9.01	9.20	0.49	30/03/2013	1
27812	2711	Austins/Waikato Sect SB 13	1300	0.30	100	River flow	2021	1461	8.73	9.03	9.19	0.46	30/03/2013	1
27812	2712	Austins/Waikato Sect SB 14	1400	0.30	100	River flow	2021	1461	8.74	9.04	9.23	0.49	30/03/2013	1
27812	2713	Austins/Waikato Sect SB 15	1500	0.30	100	River flow	2021	1461	8.75	9.05	9.19	0.44	30/03/2013	1
27812	2714	Austins/Waikato Sect SB 16	1600	0.30	100	River flow	2021	1461	8.76	9.06	9.15	0.39	30/03/2013	1

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27812	2715	Austins/Waikato Sect SB 17	1700	0.30	100	River flow	2021	1461	8.78	9.08	9.12	0.34	30/03/2013	1
27812	2716	Austins/Waikato Sect SB 18	1800	0.30	100	River flow	2021	1461	8.79	9.09	9.13	0.34	30/03/2013	1
27812	2717	Austins/Waikato Sect SB 19	1900	0.30	100	River flow	2021	1461	8.81	9.11	9.19	0.38	30/03/2013	1
27812	2718	Austins/Waikato Sect SB 20	2000	0.30	100	River flow	2021	1461	8.82	9.12	9.26	0.44	30/03/2013	1
27812	2719	Austins/Waikato Sect SB 21	2100	0.30	100	River flow	2021	1461	8.87	9.17	9.33	0.46	30/03/2013	1
27812	2720	Austins/Waikato Sect SB 22	2200	0.30	100	River flow	2021	1461	8.88	9.18	9.31	0.43	30/03/2013	1
27812	2721	Austins/Waikato Sect SB 23	2300	0.30	100	River flow	2021	1461	8.88	9.18	9.40	0.52	30/03/2013	1
27812	2722	Austins/Waikato Sect SB 24	2400	0.30	100	River flow	2021	1461	8.88	9.18	9.31	0.43	30/03/2013	1
27812	2723	Austins/Waikato Sect SB 25	2500	0.30	100	River flow	2021	1461	8.89	9.19	9.48	0.59	30/03/2013	1
27812	2724	Austins/Waikato Sect SB 26	2600	0.30	100	River flow	2021	1461	8.90	9.20	9.37	0.47	30/03/2013	1
27812	2725	Austins/Waikato Sect SB 27	2700	0.30	100	River flow	2021	1461	8.91	9.21	9.26	0.35	30/03/2013	1
27812	2726	Austins/Waikato Sect SB 28	2800	0.30	100	River flow	2021	1461	8.92	9.22	9.13	0.21	30/03/2013	2
27812	2727	Austins/Waikato Sect SB 29	2826	0.30	100	River flow	2021	1461	8.93	9.23	9.19	0.26	30/03/2013	2
26581	59678	Austins/Whangape Sect SB 00	0	0.30	100	River flow	2021	60	8.56	8.86	9.52	0.96	30/03/2013	1
26581	2684	Austins/Whangape Sect SB 01	100	0.30	100	River flow	2021	60	8.56	8.86	9.34	0.78	30/03/2013	1
26581	2685	Austins/Whangape Sect SB 02	200	0.30	100	River flow	2021	60	8.56	8.86	9.33	0.77	30/03/2013	1
26581	2686	Austins/Whangape Sect SB 03	300	0.30	100	River flow	2021	60	8.56	8.86	9.21	0.65	30/03/2013	1
26581	2687	Austins/Whangape Sect SB 04	400	0.30	100	River flow	2021	60	8.56	8.86	9.08	0.52	30/03/2013	1
26581	2688	Austins/Whangape Sect SB 05	500	0.30	100	River flow	2021	60	8.56	8.86	9.28	0.72	30/03/2013	1
26581	2689	Austins/Whangape Sect SB 06	600	0.30	100	River flow	2021	60	8.56	8.86	9.07	0.51	30/03/2013	1
27812	2720	Austins/Waikato Sect SB 22	2200	0.30	100	River flow	2021	1461	8.88	9.18	9.31	0.43	30/03/2013	1
27812	2721	Austins/Waikato Sect SB 23	2300	0.30	100	River flow	2021	1461	8.88	9.18	9.40	0.52	30/03/2013	1
27812	2722	Austins/Waikato Sect SB 24	2400	0.30	100	River flow	2021	1461	8.88	9.18	9.31	0.43	30/03/2013	1
27812	2723	Austins/Waikato Sect SB 25	2500	0.30	100	River flow	2021	1461	8.89	9.19	9.48	0.59	30/03/2013	1
27812	2724	Austins/Waikato Sect SB 26	2600	0.30	100	River flow	2021	1461	8.90	9.20	9.37	0.47	30/03/2013	1

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
27812	2725	Austins/Waikato Sect SB 27	2700	0.30	100	River flow	2021	1461	8.91	9.21	9.26	0.35	30/03/2013	1
27812	2726	Austins/Waikato Sect SB 28	2800	0.30	100	River flow	2021	1461	8.92	9.22	9.13	0.21	30/03/2013	2
27812	2727	Austins/Waikato Sect SB 29	2826	0.30	100	River flow	2021	1461	8.93	9.23	9.19	0.26	30/03/2013	2
26581	59678	Austins/Whangape Sect SB 00	0	0.30	100	River flow	2021	60	8.56	8.86	9.52	0.96	30/03/2013	1
26581	2684	Austins/Whangape Sect SB 01	100	0.30	100	River flow	2021	60	8.56	8.86	9.34	0.78	30/03/2013	1
26581	2685	Austins/Whangape Sect SB 02	200	0.30	100	River flow	2021	60	8.56	8.86	9.33	0.77	30/03/2013	1
26581	2686	Austins/Whangape Sect SB 03	300	0.30	100	River flow	2021	60	8.56	8.86	9.21	0.65	30/03/2013	1
26581	2687	Austins/Whangape Sect SB 04	400	0.30	100	River flow	2021	60	8.56	8.86	9.08	0.52	30/03/2013	1
26581	2688	Austins/Whangape Sect SB 05	500	0.30	100	River flow	2021	60	8.56	8.86	9.28	0.72	30/03/2013	1
26581	2689	Austins/Whangape Sect SB 06	600	0.30	100	River flow	2021	60	8.56	8.86	9.07	0.51	30/03/2013	1
24358	2681	Blairs Sect SB 06	600	0.30	100	River flow	2021	55	8.56	8.86	9.37	0.81	1/03/2009	1
24358	2682	Blairs Sect SB 07	700	0.30	100	River flow	2021	55	8.56	8.86	9.45	0.89	1/03/2009	1
24358	2683	Blairs Sect SB 08	769	0.30	100	River flow	2021	55	8.56	8.86	9.42	0.86	1/03/2009	1
27311	59726	Churchill East SB 00	0	0.61	10	River flow	2021	1172	7.05	7.66	8.33	1.28	1/04/2010	1
27311	2514	Churchill East SB 01	100	0.61	10	River flow	2021	1172	7.06	7.67	8.13	1.07	1/04/2010	1
27311	2515	Churchill East SB 02	200	0.61	10	River flow	2021	1172	7.08	7.69	7.84	0.76	1/04/2010	1
27311	2516	Churchill East SB 03	300	0.61	10	River flow	2021	1172	7.09	7.70	7.81	0.72	1/04/2010	1
27311	2517	Churchill East SB 04	400	0.61	10	River flow	2021	1172	7.11	7.72	7.81	0.70	1/04/2010	1
27311	2518	Churchill East SB 05	500	0.61	10	River flow	2021	1172	7.12	7.73	7.84	0.72	1/04/2010	1
27311	2519	Churchill East SB 06	600	0.61	10	River flow	2021	1172	7.13	7.74	7.82	0.69	1/04/2010	1
27311	2520	Churchill East SB 07	700	0.61	10	River flow	2021	1172	7.14	7.75	7.86	0.72	1/04/2010	1
27311	2521	Churchill East SB 08	800	0.61	10	River flow	2021	1172	7.15	7.76	7.96	0.81	1/04/2010	1
27311	2522	Churchill East SB 09	900	0.61	10	River flow	2021	1172	7.16	7.77	8.02	0.86	1/04/2010	1
27311	2523	Churchill East SB 10	1000	0.61	10	River flow	2021	1171	7.18	7.79	8.08	0.90	1/04/2010	1
27311	2524	Churchill East SB 11	1100	0.61	10	River flow	2021	1169	7.20	7.81	8.10	0.90	1/04/2010	1

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27311	2525	Churchill East SB 12	1200	0.61	10	River flow	2021	1167	7.22	7.83	8.08	0.86	1/04/2010	1
27311	2526	Churchill East SB 13	1300	0.61	10	River flow	2021	1165	7.24	7.85	8.05	0.81	1/04/2010	1
27311	2527	Churchill East SB 14	1400	0.61	10	River flow	2021	1157	7.32	7.93	8.05	0.74	1/04/2010	1
27311	2528	Churchill East SB 15	1500	0.61	10	River flow	2021	1156	7.32	7.93	7.98	0.66	1/04/2010	1
27311	2529	Churchill East SB 16	1600	0.61	10	River flow	2021	1155	7.33	7.94	8.10	0.77	1/04/2010	1
27311	2530	Churchill East SB 17	1700	0.61	10	River flow	2021	1154	7.34	7.95	8.02	0.68	1/04/2010	1
27311	2531	Churchill East SB 18	1800	0.61	10	River flow	2021	1152	7.36	7.97	7.94	0.58	1/04/2010	2
27311	2532	Churchill East SB 19	1900	0.61	10	River flow	2021	1151	7.37	7.98	8.01	0.64	1/04/2010	1
27311	2533	Churchill East SB 20	2000	0.61	10	River flow	2021	1149	7.38	7.99	8.17	0.79	1/04/2010	1
27311	2534	Churchill East SB 21	2100	0.61	10	River flow	2021	1149	7.39	8.00	8.19	0.80	1/04/2010	1
27311	2535	Churchill East SB 22	2200	0.61	10	River flow	2021	1149	7.41	8.02	8.28	0.87	1/04/2010	1
27311	2536	Churchill East SB 23	2300	0.61	10	River flow	2021	1149	7.43	8.04	8.15	0.72	1/04/2010	1
27311	2537	Churchill East SB 24	2400	0.61	10	River flow	2021	1149	7.45	8.06	8.14	0.69	1/04/2010	1
27311	2538	Churchill East SB 25	2500	0.61	10	River flow	2021	1149	7.47	8.08	8.35	0.88	1/04/2010	1
27311	2539	Churchill East SB 26	2600	0.61	10	River flow	2021	1149	7.48	8.09	8.36	0.88	1/04/2010	1
27311	2540	Churchill East SB 27	2700	0.61	10	River flow	2021	1149	7.49	8.10	8.35	0.86	1/04/2010	1
27311	2541	Churchill East SB 28	2800	0.61	10	River flow	2021	1149	7.51	8.12	8.29	0.78	1/04/2010	1
27311	2542	Churchill East SB 29	2900	0.61	10	River flow	2021	1149	7.52	8.13	8.37	0.85	1/04/2010	1
27311	2543	Churchill East SB 30	3000	0.61	10	River flow	2021	1149	7.54	8.15	8.23	0.70	1/04/2010	1
27311	2544	Churchill East SB 31	3100	0.61	10	River flow	2021	1149	7.55	8.16	8.27	0.72	1/04/2010	1
27311	2545	Churchill East SB 32	3200	0.61	10	River flow	2021	1149	7.56	8.17	8.25	0.69	1/04/2010	1
27311	2546	Churchill East SB 33	3300	0.61	10	River flow	2021	1149	7.57	8.18	8.19	0.62	1/04/2010	1
27311	2547	Churchill East SB 34	3400	0.61	10	River flow	2021	1149	7.59	8.20	8.16	0.57	1/04/2010	2
27311	2548	Churchill East SB 35	3500	0.61	10	River flow	2021	1149	7.61	8.22	8.41	0.80	1/04/2010	1
27311	2549	Churchill East SB 36	3600	0.61	10	River flow	2021	1149	7.64	8.25	8.45	0.81	1/04/2010	1

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27311	2550	Churchill East SB 37	3700	0.61	10	River flow	2021	1137	7.70	8.31	8.33	0.64	1/04/2010	1
27311	2551	Churchill East SB 38	3800	0.61	10	River flow	2021	1137	7.71	8.32	8.31	0.60	1/04/2010	2
27311	2552	Churchill East SB 39	3900	0.61	10	River flow	2021	1137	7.73	8.34	8.35	0.62	1/04/2010	1
27311	2553	Churchill East SB 40	4000	0.61	10	River flow	2021	1137	7.74	8.35	8.32	0.58	1/04/2010	2
27311	2554	Churchill East SB 41	4100	0.61	10	River flow	2021	1137	7.75	8.36	8.45	0.70	1/04/2010	1
27311	2555	Churchill East SB 42	4200	0.61	10	River flow	2021	1137	7.76	8.37	8.46	0.70	1/04/2010	1
27311	2556	Churchill East SB 43	4300	0.61	10	River flow	2021	1138	7.78	8.39	8.48	0.70	1/04/2010	1
27311	2557	Churchill East SB 44	4400	0.61	10	River flow	2021	1138	7.79	8.40	8.37	0.58	1/04/2010	2
27311	2558	Churchill East SB 45	4500	0.61	10	River flow	2021	1138	7.81	8.42	8.53	0.72	1/04/2010	1
27311	2559	Churchill East SB 46	4600	0.61	10	River flow	2021	1138	7.83	8.44	8.50	0.68	1/04/2010	1
27311	2560	Churchill East SB 47	4700	0.61	10	River flow	2021	1138	7.84	8.45	8.66	0.82	1/04/2010	1
27311	2561	Churchill East SB 48	4800	0.61	10	River flow	2021	1138	7.86	8.47	8.58	0.72	1/04/2010	1
27311	2562	Churchill East SB 49	4840	0.61	10	River flow	2021	1138	7.86	8.47	8.51	0.65	1/04/2010	1
27870	59699	Deroles Main SB 00	0	0.61	10	River flow	2021		7.76	8.37	9.03	1.27	15/07/2020	1
27870	22282	Deroles Main SB 01	100	0.61	10	River flow	2021		7.76	8.37	8.33	0.57	15/07/2020	2
27870	22283	Deroles Main SB 02	200	0.61	10	River flow	2021		7.76	8.37	8.06	0.30	15/07/2020	3
27870	22284	Deroles Main SB 03	300	0.61	10	River flow	2021		7.76	8.37	8.11	0.35	15/07/2020	2
27870	22285	Deroles Main SB 04	400	0.61	10	River flow	2021		7.76	8.37	7.95	0.19	15/07/2020	3
27870	22286	Deroles Main SB 05	500	0.61	10	River flow	2021		7.76	8.37	8.03	0.27	15/07/2020	3
27870	22287	Deroles Main SB 06	600	0.61	10	River flow	2021		7.76	8.37	8.11	0.35	15/07/2020	2
27870	22288	Deroles Main SB 07	700	0.61	10	River flow	2021		7.76	8.37	8.04	0.28	15/07/2020	3
27870	22289	Deroles Main SB 08	800	0.61	10	River flow	2021		7.76	8.37	8.29	0.53	15/07/2020	2
27870	22290	Deroles Main SB 09	900	0.61	10	River flow	2021		7.76	8.37	8.15	0.39	15/07/2020	2
27870	22291	Deroles Main SB 10	1000	0.61	10	River flow	2021		7.76	8.37	8.39	0.63	15/07/2020	1
27870	59700	Deroles Return SB 00	0	0.60	10	River flow	2021		7.76	8.36	8.60	0.84	15/07/2020	1

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27871	22300	Deroles Return SB 01	100	0.60	10	River flow	2021		7.76	8.36	8.18	0.42	15/07/2020	2
27871	22301	Deroles Return SB 02	200	0.60	10	River flow	2021		7.76	8.36	8.17	0.41	15/07/2020	2
27871	22302	Deroles Return SB 03	300	0.60	10	River flow	2021		7.76	8.36	8.10	0.34	15/07/2020	2
27871	22303	Deroles Return SB 04	400	0.60	10	River flow	2021		7.76	8.36	7.96	0.20	15/07/2020	3
27871	22304	Deroles Return SB 05	500	0.60	10	River flow	2021		7.76	8.36	7.92	0.16	15/07/2020	3
27871	22305	Deroles Return SB 06	600	0.60	10	River flow	2021		7.76	8.36	8.00	0.24	15/07/2020	3
27871	22306	Deroles Return SB 07	700	0.60	10	River flow	2021		7.76	8.36	7.96	0.20	15/07/2020	3
27871	22307	Deroles Return SB 08	800	0.60	10	River flow	2021		7.76	8.36	8.32	0.56	15/07/2020	2
27871	22308	Deroles Return SB 09	900	0.60	10	River flow	2021		7.76	8.36	8.28	0.52	15/07/2020	2
27871	22309	Deroles Return SB 10	1000	0.60	10	River flow	2021		7.76	8.36	8.74	0.98	15/07/2020	1
27871	22310	Deroles Return SB 11	1100	0.60	10	River flow	2021		7.76	8.36	8.80	1.04	15/07/2020	1
27871	33947	Deroles Return SB 12	1200	0.60	10	River flow	2021		7.76	8.36	7.63	-0.13	15/07/2020	5
27871	33948	Deroles Return SB 13	1300	0.60	10	River flow	2021		7.76	8.36	8.05	0.29	15/07/2020	3
27871	33949	Deroles Return SB 14	1340	0.60	10	River flow	2021		7.76	8.36	8.06	0.30	15/07/2020	2
24361	59774	Furniss Downstream SB 00	0	0.30	10	River flow	2021	43	7.75	8.05	8.72	0.97	28/02/2021	1
24361	3080	Furniss Downstream SB 01	100	0.30	10	River flow	2021	43	7.75	8.05	8.68	0.93	28/02/2021	1
24361	3081	Furniss Downstream SB 02	200	0.30	10	River flow	2021	43	7.75	8.05	8.66	0.91	28/02/2021	1
24361	3082	Furniss Downstream SB 03	300	0.30	10	River flow	2021	43	7.75	8.05	8.66	0.91	28/02/2021	1
24361	3083	Furniss Downstream SB 04	400	0.30	10	River flow	2021	43	7.75	8.05	8.67	0.92	28/02/2021	1
24361	2622	Furniss Downstream SB 05	500	0.30	10	River flow	2021	43	7.75	8.05	8.68	0.93	28/02/2021	1
24361	2623	Furniss Downstream SB 06	600	0.30	10	River flow	2021	43	7.75	8.05	8.68	0.93	28/02/2021	1
24361	2624	Furniss Downstream SB 07	700	0.30	10	River flow	2021	43	7.75	8.05	8.67	0.92	28/02/2021	1
24361	2625	Furniss Downstream SB 08	800	0.30	10	River flow	2021	43	7.75	8.05	8.73	0.98	28/02/2021	1
24361	2626	Furniss Downstream SB 09	900	0.30	10	River flow	2021	43	7.75	8.05	8.70	0.95	28/02/2021	1
24361	2627	Furniss Downstream SB 10	1000	0.30	10	River flow	2021	43	7.75	8.05	8.73	0.98	28/02/2021	1

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24361	2628	Furniss Downstream SB 11	1100	0.30	10	River flow	2021	43	7.75	8.05	8.80	1.05	28/02/2021	1
24361	2629	Furniss Downstream SB 12	1200	0.30	10	River flow	2021	43	7.75	8.05	8.80	1.05	28/02/2021	1
24361	2630	Furniss Downstream SB 13	1300	0.30	10	River flow	2021	43	7.75	8.05	8.75	1.00	28/02/2021	1
24361	2631	Furniss Downstream SB 14	1400	0.30	10	River flow	2021	43	7.75	8.05	8.86	1.11	28/02/2021	1
24361	2632	Furniss Downstream SB 15	1500	0.30	10	River flow	2021	43	7.75	8.05	8.75	1.00	28/02/2021	1
24361	2633	Furniss Downstream SB 16	1600	0.30	10	River flow	2021	43	7.75	8.05	8.79	1.04	28/02/2021	1
24361	2634	Furniss Downstream SB 17	1700	0.30	10	River flow	2021	43	7.75	8.05	8.83	1.08	28/02/2021	1
24361	2635	Furniss Downstream SB 18	1800	0.30	10	River flow	2021	43	7.75	8.05	8.71	0.96	28/02/2021	1
24361	2636	Furniss Downstream SB 19	1900	0.30	10	River flow	2021	43	7.75	8.05	8.73	0.98	28/02/2021	1
24361	2637	Furniss Downstream SB 20	2000	0.30	10	River flow	2021	43	7.75	8.05	8.76	1.01	15/03/2019	1
24361	2638	Furniss Downstream SB 21	2100	0.30	10	River flow	2021	43	7.75	8.05	8.88	1.13	15/03/2019	1
24361	2639	Furniss Downstream SB 22	2200	0.30	10	River flow	2021	43	7.75	8.05	8.93	1.18	15/03/2019	1
24361	2640	Furniss Downstream SB 23	2300	0.30	10	River flow	2021	43	7.75	8.05	8.97	1.22	15/03/2019	1
24361	2641	Furniss Downstream SB 24	2400	0.30	10	River flow	2021	43	7.75	8.05	8.92	1.17	15/03/2019	1
24361	2642	Furniss Downstream SB 25	2500	0.30	10	River flow	2021	43	7.75	8.05	8.99	1.24	15/03/2019	1
24361	2643	Furniss Downstream SB 26	2600	0.30	10	River flow	2021	43	7.75	8.05	9.00	1.25	15/03/2019	1
24361	2644	Furniss Downstream SB 27	2700	0.30	10	River flow	2021	43	7.75	8.05	9.00	1.25	15/03/2019	1
24361	2645	Furniss Downstream SB 28	2790	0.30	10	River flow	2021	43	7.75	8.05	8.72	0.97	15/03/2019	1
22900	59600	Furniss Upstream SB 00	0	0.30	10	River flow	2021	43	7.75	8.05	9.48	1.73	15/07/2020	1
22900	3195	Furniss Upstream SB 01	100	0.30	10	River flow	2021	43	7.75	8.05	8.62	0.87	15/07/2020	1
22900	3196	Furniss Upstream SB 02	200	0.30	10	River flow	2021	43	7.75	8.05	8.65	0.90	15/07/2020	1
22900	3197	Furniss Upstream SB 03	300	0.30	10	River flow	2021	43	7.75	8.05	8.55	0.80	15/07/2020	1
22900	3198	Furniss Upstream SB 04	400	0.30	10	River flow	2021	43	7.75	8.05	8.57	0.82	15/07/2020	1
22900	3199	Furniss Upstream SB 05	500	0.30	10	River flow	2021	43	7.75	8.05	8.57	0.82	15/07/2020	1
22900	3200	Furniss Upstream SB 06	600	0.30	10	River flow	2021	43	7.75	8.05	8.80	1.05	15/07/2020	1

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22900	3201	Furniss Upstream SB 07	700	0.30	10	River flow	2021	43	7.75	8.05	8.64	0.89	15/07/2020	1
22900	3202	Furniss Upstream SB 08	800	0.30	10	River flow	2021	43	7.75	8.05	8.81	1.06	15/07/2020	1
22900	3203	Furniss Upstream SB 09	900	0.30	10	River flow	2021	43	7.75	8.05	8.86	1.11	15/07/2020	1
22900	3204	Furniss Upstream SB 10	1000	0.30	10	River flow	2021	43	7.75	8.05	8.88	1.13	15/07/2020	1
22900	3205	Furniss Upstream SB 11	1100	0.30	10	River flow	2021	43	7.75	8.05	8.93	1.18	15/07/2020	1
22900	3206	Furniss Upstream SB 12	1200	0.30	10	River flow	2021	43	7.75	8.05	9.28	1.53	15/07/2020	1
22900	3207	Furniss Upstream SB 13	1300	0.30	10	River flow	2021	43	7.75	8.05	9.15	1.40	15/07/2020	1
22900	3208	Furniss Upstream SB 14	1400	0.30	10	River flow	2021	43	7.75	8.05	9.22	1.47	15/07/2020	1
22900	3209	Furniss Upstream SB 15	1500	0.30	10	River flow	2021	43	7.75	8.05	9.30	1.55	15/07/2020	1
22900	3210	Furniss Upstream SB 16	1521	0.30	10	River flow	2021	43	7.75	8.05	9.74	1.99	15/07/2020	1
23655	59636	Guests Sect SB 00	0	0.30	100	River flow	2021	55	8.56	8.86	9.55	0.99	1/03/2009	1
23655	2659	Guests Sect SB 01	100	0.30	100	River flow	2021	55	8.56	8.86	9.40	0.84	1/03/2009	1
23655	2660	Guests Sect SB 02	200	0.30	100	River flow	2021	55	8.56	8.86	9.30	0.74	1/03/2009	1
23655	2661	Guests Sect SB 03	300	0.30	100	River flow	2021	55	8.56	8.86	9.29	0.73	1/03/2009	1
23655	2662	Guests Sect SB 04	400	0.30	100	River flow	2021	55	8.56	8.86	9.31	0.75	1/03/2009	1
23655	2663	Guests Sect SB 05	500	0.30	100	River flow	2021	55	8.56	8.86	9.35	0.79	1/03/2009	1
23655	2664	Guests Sect SB 06	600	0.30	100	River flow	2021	55	8.56	8.86	9.36	0.80	1/03/2009	1
23655	2665	Guests Sect SB 07	700	0.30	100	River flow	2021	55	8.56	8.86	9.25	0.69	1/03/2009	1
23655	2666	Guests Sect SB 08	800	0.30	100	River flow	2021	55	8.56	8.86	9.31	0.75	1/03/2009	1
23655	2667	Guests Sect SB 09	900	0.30	100	River flow	2021	55	8.56	8.86	9.22	0.66	1/03/2009	1
23655	2668	Guests Sect SB 10	1000	0.30	100	River flow	2021	55	8.56	8.86	9.21	0.65	1/03/2009	1
23655	2669	Guests Sect SB 11	1100	0.30	100	River flow	2021	55	8.56	8.86	9.20	0.64	1/03/2009	1
23655	2670	Guests Sect SB 12	1200	0.30	100	River flow	2021	55	8.56	8.86	9.25	0.69	1/03/2009	1
23655	2671	Guests Sect SB 13	1300	0.30	100	River flow	2021	55	8.56	8.86	9.24	0.68	1/03/2009	1
23655	2672	Guests Sect SB 14	1400	0.30	100	River flow	2021	55	8.56	8.86	9.22	0.66	1/03/2009	1

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23655	2673	Guests Sect SB 15	1500	0.30	100	River flow	2021	55	8.56	8.86	9.25	0.69	1/03/2009	1
23655	2674	Guests Sect SB 16	1600	0.30	100	River flow	2021	55	8.56	8.86	9.19	0.63	1/03/2009	1
23655	2675	Guests Sect SB 17	1691	0.30	100	River flow	2021	55	8.56	8.86	9.34	0.78	1/03/2009	1
23456	59607	Harris Street SB 00	0	0.61	100	River flow	2021	1730	11.56	12.17	12.57	1.01	15/07/2020	1
23456	18898	Harris Street SB 01	100	0.61	100	River flow	2021	1730	11.57	12.18	12.18	0.61	15/07/2020	1
23456	75737	Harris Street SB 02	111	0.61	100	River flow	2021	1730	11.57	12.18	12.11	0.54	15/07/2020	2
22901	59586	Harveys SB 00	0	0.30	10	River flow	2021	43	7.75	8.05	8.67	0.92	15/07/2020	1
22901	3084	Harveys SB 01	100	0.30	10	River flow	2021	43	7.75	8.05	8.55	0.80	15/07/2020	1
22901	3085	Harveys SB 02	200	0.30	10	River flow	2021	43	7.75	8.05	8.39	0.64	15/07/2020	1
22901	3086	Harveys SB 03	300	0.30	10	River flow	2021	43	7.75	8.05	8.68	0.93	15/07/2020	1
22901	3087	Harveys SB 04	400	0.30	10	River flow	2021	43	7.75	8.05	8.68	0.93	15/07/2020	1
22901	2646	Harveys SB 05	500	0.30	10	River flow	2021	43	7.75	8.05	8.64	0.89	15/07/2020	1
22901	2647	Harveys SB 06	600	0.30	10	River flow	2021	43	7.75	8.05	8.70	0.95	15/07/2020	1
22901	2648	Harveys SB 07	700	0.30	10	River flow	2021	43	7.75	8.05	8.74	0.99	15/07/2020	1
22901	2649	Harveys SB 08	800	0.30	10	River flow	2021	43	7.75	8.05	8.59	0.84	15/07/2020	1
22901	2650	Harveys SB 09	900	0.30	10	River flow	2021	43	7.75	8.05	8.79	1.04	15/07/2020	1
22901	2651	Harveys SB 10	1000	0.30	10	River flow	2021	43	7.75	8.05	8.76	1.01	15/07/2020	1
22901	2652	Harveys SB 11	1100	0.30	10	River flow	2021	43	7.75	8.05	8.67	0.92	15/07/2020	1
22901	2653	Harveys SB 12	1200	0.30	10	River flow	2021	43	7.75	8.05	8.61	0.86	15/07/2020	1
22901	2654	Harveys SB 13	1300	0.30	10	River flow	2021	43	7.75	8.05	8.69	0.94	15/07/2020	1
22901	2655	Harveys SB 14	1400	0.30	10	River flow	2021	43	7.75	8.05	8.50	0.75	15/07/2020	1
22901	2656	Harveys SB 15	1500	0.30	10	River flow	2021	43	7.75	8.05	8.54	0.79	15/07/2020	1
22901	2657	Harveys SB 16	1600	0.30	10	River flow	2021	43	7.75	8.05	8.82	1.07	15/07/2020	1
22901	2658	Harveys SB 17	1650	0.30	10	River flow	2021	43	7.75	8.05	8.55	0.80	15/07/2020	1
28029	59703	Hills Sect SB 00	0	0.30	100	River flow	2021	1730	9.86	10.16	10.34	0.48	30/03/2013	1

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28029	2792	Hills Sect SB 01	100	0.30	100	River flow	2021	1730	9.87	10.17	10.28	0.41	30/03/2013	1
28029	2793	Hills Sect SB 02	200	0.30	100	River flow	2021	1730	9.88	10.18	10.33	0.45	30/03/2013	1
28029	2794	Hills Sect SB 03	300	0.30	100	River flow	2021	1730	9.90	10.20	10.38	0.48	30/03/2013	1
28029	2795	Hills Sect SB 04	400	0.30	100	River flow	2021	1730	9.91	10.21	10.44	0.53	30/03/2013	1
28029	2796	Hills Sect SB 05	500	0.30	100	River flow	2021	1730	9.92	10.22	10.49	0.57	30/03/2013	1
28029	2797	Hills Sect SB 06	600	0.30	100	River flow	2021	1730	9.93	10.23	10.51	0.58	30/03/2013	1
28029	2798	Hills Sect SB 07	700	0.30	100	River flow	2021	1730	9.95	10.25	10.52	0.57	30/03/2013	1
28029	2799	Hills Sect SB 08	800	0.30	100	River flow	2021	1730	9.96	10.26	10.52	0.56	30/03/2013	1
28029	2800	Hills Sect SB 09	900	0.30	100	River flow	2021	1730	9.97	10.27	10.54	0.57	30/03/2013	1
28029	2801	Hills Sect SB 10	1000	0.30	100	River flow	2021	1730	9.99	10.29	10.55	0.56	30/03/2013	1
28029	2802	Hills Sect SB 11	1100	0.30	100	River flow	2021	1730	10.00	10.30	10.55	0.55	30/03/2013	1
28029	2803	Hills Sect SB 12	1200	0.30	100	River flow	2021	1730	10.02	10.32	10.56	0.54	30/03/2013	1
28029	2804	Hills Sect SB 13	1300	0.30	100	River flow	2021	1730	10.04	10.34	10.58	0.54	30/03/2013	1
28029	2805	Hills Sect SB 14	1321	0.30	100	River flow	2021	1730	10.04	10.34	10.55	0.51	30/03/2013	1
28014	59783	Hly Sth Main Road: Between Tainui BR & Rail BR SB 00	0	0.61	100	River flow	2021	1731	11.70	12.31	12.84	1.15	15/07/2020	1
28014	2358	Hly Sth Main Road: Between Tainui BR & Rail BR SB 01	100	0.61	100	River flow	2021	1731	11.71	12.32	12.39	0.68	15/07/2020	1
28014	2359	Hly Sth Main Road: Between Tainui BR & Rail BR SB 02	200	0.61	100	River flow	2021	1731	11.73	12.34	12.24	0.51	15/07/2020	2
28014	2360	Hly Sth Main Road: Between Tainui BR & Rail BR SB 03	300	0.61	100	River flow	2021	1731	11.75	12.36	12.64	0.89	15/07/2020	1
28014	2361	Hly Sth Main Road: Between Tainui BR & Rail BR SB 04	400	0.61	100	River flow	2021	1731	11.77	12.38	12.31	0.54	15/07/2020	2
28014	2362	Hly Sth Main Road: Between Tainui BR & Rail BR SB 05	472	0.61	100	River flow	2021	1731	11.82	12.43	12.50	0.68	15/07/2020	1

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27306	59724	Hly Sth Tainui Bridge Up Stm SB 00	0	0.61	100	River flow	2021	1731	11.83	12.44	13.40	1.57	15/07/2020	1
27306	2333	Hly Sth Tainui Bridge Up Stm SB 01	100	0.61	100	River flow	2021	1731	11.90	12.51	12.75	0.85	15/07/2020	1
27306	2334	Hly Sth Tainui Bridge Up Stm SB 02	200	0.61	100	River flow	2021	1731	11.93	12.54	12.89	0.96	15/07/2020	1
27306	2335	Hly Sth Tainui Bridge Up Stm SB 03	300	0.61	100	River flow	2021	1731	11.95	12.56	12.47	0.52	15/07/2020	2
27306	2336	Hly Sth Tainui Bridge Up Stm SB 04	400	0.61	100	River flow	2021	1731	11.97	12.58	12.74	0.77	15/07/2020	1
27306	2337	Hly Sth Tainui Bridge Up Stm SB 05	500	0.61	100	River flow	2021	1731	11.98	12.59	12.88	0.90	15/07/2020	1
27306	2338	Hly Sth Tainui Bridge Up Stm SB 06	600	0.61	100	River flow	2021	1731	12.00	12.61	12.92	0.92	15/07/2020	1
27306	2339	Hly Sth Tainui Bridge Up Stm SB 07	700	0.61	100	River flow	2021	1731	12.02	12.63	13.00	0.98	15/07/2020	1
27306	2340	Hly Sth Tainui Bridge Up Stm SB 08	800	0.61	100	River flow	2021	1731	12.03	12.64	13.06	1.03	15/07/2020	1
27306	2341	Hly Sth Tainui Bridge Up Stm SB 09	900	0.61	100	River flow	2021	1731	12.05	12.66	13.18	1.14	15/07/2020	1
27306	2342	Hly Sth Tainui Bridge Up Stm SB 10	1000	0.61	100	River flow	2021	1731	12.06	12.67	13.14	1.08	15/07/2020	1
27306	2343	Hly Sth Tainui Bridge Up Stm SB 11	1100	0.61	100	River flow	2021	1731	12.07	12.68	13.20	1.13	15/07/2020	1
27306	2344	Hly Sth Tainui Bridge Up Stm SB 12	1200	0.61	100	River flow	2021	1731	12.08	12.69	13.16	1.08	15/07/2020	1
27306	2345	Hly Sth Tainui Bridge Up Stm SB 13	1300	0.61	100	River flow	2021	1731	12.10	12.71	13.18	1.08	15/07/2020	1
27306	2346	Hly Sth Tainui Bridge Up Stm SB 14	1400	0.61	100	River flow	2021	1731	12.11	12.72	13.24	1.13	15/07/2020	1
27306	2347	Hly Sth Tainui Bridge Up Stm SB 15	1500	0.61	100	River flow	2021	1731	12.12	12.73	13.21	1.09	15/07/2020	1
27306	2348	Hly Sth Tainui Bridge Up Stm SB 16	1600	0.61	100	River flow	2021	1731	12.13	12.74	13.27	1.14	15/07/2020	1
27306	2349	Hly Sth Tainui Bridge Up Stm SB 17	1700	0.61	100	River flow	2021	1731	12.15	12.76	13.04	0.89	15/07/2020	1
27306	2350	Hly Sth Tainui Bridge Up Stm SB 18	1800	0.61	100	River flow	2021	1731	12.16	12.77	13.08	0.92	15/07/2020	1
27306	2351	Hly Sth Tainui Bridge Up Stm SB 19	1900	0.61	100	River flow	2021	1731	12.17	12.78	13.39	1.22	15/07/2020	1
27306	2352	Hly Sth Tainui Bridge Up Stm SB 20	2000	0.61	100	River flow	2021	1731	12.19	12.80	13.36	1.17	15/07/2020	1
27306	2353	Hly Sth Tainui Bridge Up Stm SB 21	2100	0.61	100	River flow	2021	1731	12.20	12.81	13.26	1.06	15/07/2020	1
27306	2354	Hly Sth Tainui Bridge Up Stm SB 22	2200	0.61	100	River flow	2021	1731	12.21	12.82	13.32	1.11	15/07/2020	1
27306	2355	Hly Sth Tainui Bridge Up Stm SB 23	2300	0.61	100	River flow	2021	1731	12.22	12.83	13.29	1.07	15/07/2020	1
27306	2356	Hly Sth Tainui Bridge Up Stm SB 24	2400	0.61	100	River flow	2021	1731	12.23	12.84	13.27	1.04	15/07/2020	1

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27306	2357	Hly Sth Tainui Bridge Up Stm SB 25	2435	0.61	100	River flow	2021	1731	12.23	12.84	13.28	1.05	15/07/2020	1
25082	59651	Hora Hora Sect SB 00	0	0.30	100	River flow	2021	1461	8.93	9.23	9.34	0.41	30/03/2013	1
25082	2728	Hora Hora Sect SB 01	100	0.30	100	River flow	2021	1461	8.94	9.24	9.32	0.38	30/03/2013	1
25082	2729	Hora Hora Sect SB 02	200	0.30	100	River flow	2021	1461	8.95	9.25	9.30	0.35	30/03/2013	1
25082	2730	Hora Hora Sect SB 03	300	0.30	100	River flow	2021	1461	8.95	9.25	9.32	0.37	30/03/2013	1
25082	2731	Hora Hora Sect SB 04	400	0.30	100	River flow	2021	1461	8.96	9.26	9.29	0.33	30/03/2013	1
25082	2732	Hora Hora Sect SB 05	500	0.30	100	River flow	2021	1461	8.97	9.27	9.31	0.34	30/03/2013	1
25082	2733	Hora Hora Sect SB 06	600	0.30	100	River flow	2021	1461	8.98	9.28	9.44	0.46	30/03/2013	1
25082	2734	Hora Hora Sect SB 07	700	0.30	100	River flow	2021	1461	9.02	9.32	9.52	0.50	30/03/2013	1
25082	2735	Hora Hora Sect SB 08	800	0.30	100	River flow	2021	1461	9.04	9.34	9.50	0.46	30/03/2013	1
25082	2736	Hora Hora Sect SB 09	900	0.30	100	River flow	2021	1461	9.05	9.35	9.45	0.40	30/03/2013	1
25082	2737	Hora Hora Sect SB 10	1000	0.30	100	River flow	2021	1461	9.06	9.36	9.42	0.36	30/03/2013	1
25082	2738	Hora Hora Sect SB 11	1100	0.30	100	River flow	2021	1461	9.07	9.37	9.46	0.39	30/03/2013	1
25082	2739	Hora Hora Sect SB 12	1200	0.30	100	River flow	2021	1461	9.09	9.39	9.47	0.39	30/03/2013	1
25082	2740	Hora Hora Sect SB 13	1300	0.30	100	River flow	2021	1461	9.10	9.40	9.40	0.30	30/03/2013	2
25082	2741	Hora Hora Sect SB 14	1400	0.30	100	River flow	2021	1461	9.12	9.42	9.59	0.47	30/03/2013	1
25082	2742	Hora Hora Sect SB 15	1500	0.30	100	River flow	2021	1461	9.14	9.44	9.67	0.53	30/03/2013	1
25082	2743	Hora Hora Sect SB 16	1600	0.30	100	River flow	2021	1461	9.16	9.46	9.65	0.49	30/03/2013	1
25082	2744	Hora Hora Sect SB 17	1700	0.30	100	River flow	2021	1481	9.17	9.47	9.66	0.49	30/03/2013	1
25082	2745	Hora Hora Sect SB 18	1800	0.30	100	River flow	2021	1515	9.19	9.49	9.58	0.39	30/03/2013	1
25082	2746	Hora Hora Sect SB 19	1900	0.30	100	River flow	2021	1536	9.20	9.50	9.61	0.41	30/03/2013	1
25082	2747	Hora Hora Sect SB 20	2000	0.30	100	River flow	2021	1645	9.22	9.52	9.67	0.45	30/03/2013	1
25082	2748	Hora Hora Sect SB 21	2100	0.30	100	River flow	2021	1653	9.23	9.53	9.71	0.48	30/03/2013	1
25082	2749	Hora Hora Sect SB 22	2200	0.30	100	River flow	2021	1661	9.24	9.54	9.72	0.48	30/03/2013	1
25082	2750	Hora Hora Sect SB 23	2300	0.30	100	River flow	2021	1669	9.25	9.55	9.71	0.46	30/03/2013	1

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25082	2751	Hora Hora Sect SB 24	2400	0.30	100	River flow	2021	1647	9.27	9.57	9.63	0.36	30/03/2013	1
25082	2752	Hora Hora Sect SB 25	2500	0.30	100	River flow	2021	1665	9.28	9.58	9.62	0.34	30/03/2013	1
25082	2753	Hora Hora Sect SB 26	2600	0.30	100	River flow	2021	1685	9.29	9.59	9.69	0.40	30/03/2013	1
25082	2754	Hora Hora Sect SB 27	2700	0.30	100	River flow	2021	1702	9.31	9.61	9.70	0.40	30/03/2013	1
25082	2755	Hora Hora Sect SB 28	2800	0.30	100	River flow	2021	1696	9.34	9.64	9.70	0.36	30/03/2013	1
25082	2756	Hora Hora Sect SB 29	2900	0.30	100	River flow	2021	1724	9.35	9.65	9.73	0.38	30/03/2013	1
25082	2757	Hora Hora Sect SB 30	3000	0.30	100	River flow	2021	1730	9.36	9.66	9.85	0.49	30/03/2013	1
25082	2758	Hora Hora Sect SB 31	3100	0.30	100	River flow	2021	1730	9.37	9.67	9.86	0.49	30/03/2013	1
25082	2759	Hora Hora Sect SB 32	3200	0.30	100	River flow	2021	1730	9.39	9.69	9.85	0.46	30/03/2013	1
25082	2760	Hora Hora Sect SB 33	3300	0.30	100	River flow	2021	1730	9.40	9.70	9.89	0.49	30/03/2013	1
25082	2761	Hora Hora Sect SB 34	3400	0.30	100	River flow	2021	1730	9.42	9.72	9.92	0.50	30/03/2013	1
25082	2762	Hora Hora Sect SB 35	3500	0.30	100	River flow	2021	1730	9.44	9.74	9.95	0.51	30/03/2013	1
25082	2763	Hora Hora Sect SB 36	3600	0.30	100	River flow	2021	1730	9.45	9.75	9.96	0.51	30/03/2013	1
25082	2764	Hora Hora Sect SB 37	3700	0.30	100	River flow	2021	1730	9.46	9.76	9.96	0.51	30/03/2013	1
25082	2765	Hora Hora Sect SB 38	3800	0.30	100	River flow	2021	1730	9.47	9.77	9.88	0.41	30/03/2013	1
25082	2766	Hora Hora Sect SB 39	3900	0.30	100	River flow	2021	1730	9.48	9.78	9.84	0.36	30/03/2013	1
25082	2767	Hora Hora Sect SB 40	4000	0.30	100	River flow	2021	1730	9.49	9.79	9.83	0.34	30/03/2013	1
25082	2768	Hora Hora Sect SB 41	4100	0.30	100	River flow	2021	1730	9.51	9.81	9.90	0.40	30/03/2013	1
25082	2769	Hora Hora Sect SB 42	4200	0.30	100	River flow	2021	1730	9.52	9.82	9.94	0.42	30/03/2013	1
25082	2770	Hora Hora Sect SB 43	4300	0.30	100	River flow	2021	1730	9.53	9.83	9.98	0.45	30/03/2013	1
25082	2771	Hora Hora Sect SB 44	4400	0.30	100	River flow	2021	1730	9.55	9.85	9.99	0.44	30/03/2013	1
25082	2772	Hora Hora Sect SB 45	4500	0.30	100	River flow	2021	1730	9.56	9.86	10.02	0.46	30/03/2013	1
25082	2773	Hora Hora Sect SB 46	4600	0.30	100	River flow	2021	1730	9.57	9.87	10.02	0.45	30/03/2013	1
25082	2774	Hora Hora Sect SB 47	4700	0.30	100	River flow	2021	1730	9.59	9.89	10.05	0.46	30/03/2013	1
25082	2775	Hora Hora Sect SB 48	4800	0.30	100	River flow	2021	1730	9.60	9.90	10.08	0.48	30/03/2013	1

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
25082	2776	Hora Hora Sect SB 49	4900	0.30	100	River flow	2021	1730	9.62	9.92	10.11	0.49	30/03/2013	1
25082	2777	Hora Hora Sect SB 50	5000	0.30	100	River flow	2021	1730	9.63	9.93	10.14	0.51	30/03/2013	1
25082	2778	Hora Hora Sect SB 51	5100	0.30	100	River flow	2021	1730	9.70	10.00	10.05	0.35	30/03/2013	1
25082	2779	Hora Hora Sect SB 52	5200	0.30	100	River flow	2021	1730	9.72	10.02	10.08	0.37	30/03/2013	1
25082	2780	Hora Hora Sect SB 53	5300	0.30	100	River flow	2021	1730	9.72	10.02	10.15	0.43	30/03/2013	1
25082	2781	Hora Hora Sect SB 54	5400	0.30	100	River flow	2021	1730	9.73	10.03	10.14	0.41	30/03/2013	1
25082	2782	Hora Hora Sect SB 55	5500	0.30	100	River flow	2021	1730	9.74	10.04	10.18	0.44	30/03/2013	1
25082	2783	Hora Hora Sect SB 56	5600	0.30	100	River flow	2021	1730	9.75	10.05	10.20	0.45	30/03/2013	1
25082	2784	Hora Hora Sect SB 57	5700	0.30	100	River flow	2021	1730	9.76	10.06	10.16	0.40	30/03/2013	1
25082	2785	Hora Hora Sect SB 58	5800	0.30	100	River flow	2021	1730	9.78	10.08	10.20	0.42	30/03/2013	1
25082	2786	Hora Hora Sect SB 59	5900	0.30	100	River flow	2021	1730	9.79	10.09	10.14	0.35	30/03/2013	1
25082	2787	Hora Hora Sect SB 60	6000	0.30	100	River flow	2021	1730	9.81	10.11	10.41	0.60	30/03/2013	1
25082	2788	Hora Hora Sect SB 61	6100	0.30	100	River flow	2021	1730	9.82	10.12	10.45	0.63	30/03/2013	1
25082	2789	Hora Hora Sect SB 62	6200	0.30	100	River flow	2021	1730	9.83	10.13	10.31	0.48	30/03/2013	1
25082	2790	Hora Hora Sect SB 63	6300	0.30	100	River flow	2021	1730	9.85	10.15	10.33	0.48	30/03/2013	1
25082	2791	Hora Hora Sect SB 64	6398	0.30	100	River flow	2021	1730	9.86	10.16	10.28	0.42	30/03/2013	1
23643	59630	Horseshoe SB 00	0	0.30	100	Tidal surge	2021	1549	2.72	3.02	4.49	1.77	1/01/2001	1
23643	1762	Horseshoe SB 01	100	0.30	100	Tidal surge	2021	1549	2.73	3.03	2.87	0.14	1/01/2001	3
23643	1763	Horseshoe SB 02	200	0.30	100	Tidal surge	2021	1549	2.74	3.04	3.08	0.34	1/01/2001	1
23643	1764	Horseshoe SB 03	300	0.30	100	Tidal surge	2021	1549	2.75	3.05	3.08	0.33	1/01/2001	1
23643	1765	Horseshoe SB 04	400	0.30	100	Tidal surge	2021	1549	2.75	3.05	2.99	0.24	1/01/2001	2
23643	1766	Horseshoe SB 05	500	0.30	100	Tidal surge	2021	1549	2.76	3.06	3.07	0.32	1/01/2001	1
23643	1767	Horseshoe SB 06	600	0.30	100	Tidal surge	2021	1549	2.76	3.06	3.00	0.24	1/01/2001	2
23643	1768	Horseshoe SB 07	700	0.30	100	Tidal surge	2021	1549	2.76	3.06	2.72	-0.04	1/01/2001	5
23643	1769	Horseshoe SB 08	767	0.30	100	Tidal surge	2021	1549	2.77	3.07	2.99	0.22	1/01/2001	2

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22880	59590	Huntly North Freeboard SB 00	0	0.61	100	River flow	2021	1730	11.11	11.72	12.29	1.19	1/04/2010	1
22880	2328	Huntly North Freeboard SB 01	100	0.61	100	River flow	2021	1730	11.13	11.74	12.21	1.09	27/02/2013	1
22880	2329	Huntly North Freeboard SB 02	200	0.61	100	River flow	2021	1730	11.15	11.76	12.07	0.92	27/02/2013	1
22880	2330	Huntly North Freeboard SB 03	300	0.61	100	River flow	2021	1730	11.17	11.78	12.23	1.06	27/02/2013	1
22880	2331	Huntly North Freeboard SB 04	400	0.61	100	River flow	2021	1730	11.18	11.79	12.25	1.07	27/02/2013	1
22880	2332	Huntly North Freeboard SB 05	453	0.61	100	River flow	2021	1730	11.19	11.80	12.27	1.08	27/02/2013	1
23636	59627	Huntly North SB 00	0	0.61	100	River flow	2021	1730	10.99	11.60	11.70	0.71	18/01/2017	1
23636	2321	Huntly North SB 01	100	0.61	100	River flow	2021	1730	11.00	11.61	11.93	0.93	18/01/2017	1
23636	2322	Huntly North SB 02	200	0.61	100	River flow	2021	1730	11.02	11.63	11.96	0.94	18/01/2017	1
23636	2323	Huntly North SB 03	300	0.61	100	River flow	2021	1730	11.03	11.64	11.91	0.88	18/01/2017	1
23636	2324	Huntly North SB 04	400	0.61	100	River flow	2021	1730	11.05	11.66	11.95	0.90	18/01/2017	1
23636	2325	Huntly North SB 05	500	0.61	100	River flow	2021	1730	11.06	11.67	11.99	0.93	18/01/2017	1
23636	2326	Huntly North SB 06	600	0.61	100	River flow	2021	1730	11.08	11.69	11.99	0.91	18/01/2017	1
23636	2327	Huntly North SB 07	670	0.61	100	River flow	2021	1730	11.08	11.69	11.91	0.83	18/01/2017	1
23636	18294	Huntly North SB 08	713	0.61	100	River flow	2021	1730	11.09	11.70	12.10	1.01	NULL	1
23656	59637	Huntly West Sect SB 00	0	0.30	100	River flow	2021	1730	10.04	10.34	10.56	0.52	30/03/2013	1
23656	2806	Huntly West Sect SB 01	100	0.30	100	River flow	2021	1730	10.05	10.35	10.56	0.51	30/03/2013	1
23656	2807	Huntly West Sect SB 02	200	0.30	100	River flow	2021	1730	10.07	10.37	10.60	0.53	30/03/2013	1
23656	2808	Huntly West Sect SB 03	300	0.30	100	River flow	2021	1730	10.09	10.39	10.58	0.49	30/03/2013	1
23656	2809	Huntly West Sect SB 04	400	0.30	100	River flow	2021	1730	10.11	10.41	10.63	0.52	30/03/2013	1
23656	2810	Huntly West Sect SB 05	500	0.30	100	River flow	2021	1730	10.14	10.44	10.73	0.59	30/03/2013	1
23656	2811	Huntly West Sect SB 06	600	0.30	100	River flow	2021	1730	10.16	10.46	10.75	0.60	30/03/2013	1
23656	2812	Huntly West Sect SB 07	700	0.30	100	River flow	2021	1730	10.17	10.47	10.77	0.60	30/03/2013	1
23656	2813	Huntly West Sect SB 08	800	0.30	100	River flow	2021	1730	10.19	10.49	10.73	0.54	30/03/2013	1
23656	2814	Huntly West Sect SB 09	900	0.30	100	River flow	2021	1730	10.21	10.51	10.70	0.49	30/03/2013	1

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23656	2815	Huntly West Sect SB 10	1000	0.30	100	River flow	2021	1730	10.23	10.53	10.71	0.48	30/03/2013	1
23656	2816	Huntly West Sect SB 11	1100	0.30	100	River flow	2021	1730	10.25	10.55	10.78	0.53	30/03/2013	1
23656	2817	Huntly West Sect SB 12	1200	0.30	100	River flow	2021	1730	10.28	10.58	10.72	0.44	30/03/2013	1
23656	2818	Huntly West Sect SB 13	1300	0.30	100	River flow	2021	1730	10.30	10.60	10.74	0.44	30/03/2013	1
23656	2819	Huntly West Sect SB 14	1400	0.30	100	River flow	2021	1730	10.32	10.62	10.71	0.39	30/03/2013	1
23656	2820	Huntly West Sect SB 15	1500	0.30	100	River flow	2021	1730	10.35	10.65	10.79	0.44	30/03/2013	1
23656	2821	Huntly West Sect SB 16	1600	0.30	100	River flow	2021	1730	10.37	10.67	10.84	0.47	30/03/2013	1
23656	2822	Huntly West Sect SB 17	1700	0.30	100	River flow	2021	1730	10.39	10.69	11.04	0.65	30/03/2013	1
23656	2823	Huntly West Sect SB 18	1800	0.30	100	River flow	2021	1730	10.41	10.71	11.03	0.62	30/03/2013	1
23656	2824	Huntly West Sect SB 19	1900	0.30	100	River flow	2021	1730	10.43	10.73	10.98	0.55	30/03/2013	1
23656	2825	Huntly West Sect SB 20	2000	0.30	100	River flow	2021	1730	10.44	10.74	10.98	0.54	30/03/2013	1
23656	2826	Huntly West Sect SB 21	2100	0.30	100	River flow	2021	1730	10.44	10.74	11.01	0.57	30/03/2013	1
23656	2827	Huntly West Sect SB 22	2200	0.30	100	River flow	2021	295	10.48	10.78	11.03	0.55	30/03/2013	1
23656	2828	Huntly West Sect SB 23	2300	0.30	100	River flow	2021	295	10.48	10.78	10.96	0.48	30/03/2013	1
23656	2829	Huntly West Sect SB 24	2400	0.30	100	River flow	2021	295	10.48	10.78	11.01	0.53	30/03/2013	1
23656	2830	Huntly West Sect SB 25	2500	0.30	100	River flow	2021	295	10.48	10.78	11.14	0.66	30/03/2013	1
23656	2831	Huntly West Sect SB 26	2600	0.30	100	River flow	2021	295	10.50	10.80	11.23	0.73	30/03/2013	1
23656	2832	Huntly West Sect SB 27	2700	0.30	100	River flow	2021	295	10.51	10.81	11.21	0.70	30/03/2013	1
23656	2833	Huntly West Sect SB 28	2800	0.30	100	River flow	2021	295	10.53	10.83	11.23	0.70	30/03/2013	1
23656	2834	Huntly West Sect SB 29	2900	0.30	100	River flow	2021	295	10.60	10.90	11.23	0.63	30/03/2013	1
23656	2835	Huntly West Sect SB 30	3000	0.30	100	River flow	2021	295	10.63	10.93	11.24	0.61	30/03/2013	1
23656	2836	Huntly West Sect SB 31	3100	0.30	100	River flow	2021	295	10.66	10.96	11.26	0.60	30/03/2013	1
23656	2837	Huntly West Sect SB 32	3200	0.30	100	River flow	2021	295	10.69	10.99	11.29	0.60	30/03/2013	1
23656	2838	Huntly West Sect SB 33	3300	0.30	100	River flow	2021	295	10.71	11.01	11.25	0.54	30/03/2013	1
23656	2839	Huntly West Sect SB 34	3400	0.30	100	River flow	2021	295	10.71	11.01	11.29	0.58	30/03/2013	1

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23656	2840	Huntly West Sect SB 35	3452	0.30	100	River flow	2021	295	10.71	11.01	11.25	0.54	30/03/2013	1
25816	59660	Kimihia SB 00	0	0.30	100	River flow	2021	1435	10.54	10.84	11.64	1.10	15/07/2020	1
25816	2975	Kimihia SB 01	100	0.30	100	River flow	2021	1435	10.58	10.88	11.08	0.50	15/07/2020	1
25816	2976	Kimihia SB 02	200	0.30	100	River flow	2021	1435	10.60	10.90	11.05	0.46	15/07/2020	1
25816	2977	Kimihia SB 03	300	0.30	100	River flow	2021	1435	10.60	10.90	11.21	0.61	15/07/2020	1
25816	2978	Kimihia SB 04	400	0.30	100	River flow	2021	1435	10.63	10.93	11.30	0.67	15/07/2020	1
25816	2979	Kimihia SB 05	500	0.30	100	River flow	2021	1435	10.66	10.96	11.22	0.56	15/07/2020	1
25816	2980	Kimihia SB 06	600	0.30	100	River flow	2021	1435	10.68	10.98	11.23	0.56	15/07/2020	1
25816	2981	Kimihia SB 07	700	0.30	100	River flow	2021	1435	10.69	10.99	11.34	0.65	15/07/2020	1
25816	2982	Kimihia SB 08	800	0.30	100	River flow	2021	1435	10.70	11.00	11.36	0.66	15/07/2020	1
25816	2983	Kimihia SB 09	900	0.30	100	River flow	2021	1435	10.72	11.02	11.70	0.98	15/07/2020	1
25816	2984	Kimihia SB 10	1000	0.30	100	River flow	2021	1434	10.73	11.03	11.43	0.70	15/07/2020	1
25816	2985	Kimihia SB 11	1100	0.30	100	River flow	2021	1730	10.75	11.05	11.34	0.59	15/07/2020	1
25816	2986	Kimihia SB 12	1200	0.30	100	River flow	2021	1730	10.77	11.07	11.48	0.71	15/07/2020	1
25816	2987	Kimihia SB 13	1300	0.30	100	River flow	2021	1730	10.79	11.09	11.44	0.65	15/07/2020	1
25816	2988	Kimihia SB 14	1400	0.30	100	River flow	2021	1730	10.81	11.11	11.47	0.66	15/07/2020	1
25816	2989	Kimihia SB 15	1500	0.30	100	River flow	2021	1730	10.84	11.14	11.58	0.74	15/07/2020	1
25816	2990	Kimihia SB 16	1600	0.30	100	River flow	2021	1730	10.87	11.17	11.59	0.72	15/07/2020	1
25816	2991	Kimihia SB 17	1700	0.30	100	River flow	2021	1730	10.89	11.19	11.49	0.60	15/07/2020	1
25816	2992	Kimihia SB 18	1800	0.30	100	River flow	2021	1730	10.90	11.20	11.50	0.60	15/07/2020	1
25816	2993	Kimihia SB 19	1900	0.30	100	River flow	2021	1730	10.92	11.22	11.63	0.71	15/07/2020	1
25816	2994	Kimihia SB 20	2000	0.30	100	River flow	2021	1730	10.94	11.24	11.44	0.50	15/07/2020	1
25816	2995	Kimihia SB 21	2100	0.30	100	River flow	2021	1730	10.96	11.26	11.66	0.71	15/07/2020	1
25816	2996	Kimihia SB 22	2200	0.30	100	River flow	2021	1730	10.97	11.27	11.67	0.70	15/07/2020	1
25816	2997	Kimihia SB 23	2300	0.30	100	River flow	2021	1730	10.99	11.29	11.43	0.45	15/07/2020	1

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25816	73787	Kimihia SB 24	2314	0.30	100	River flow	2021	1730	10.99	11.29	11.58	0.59	15/07/2020	1
25080	59650	Mangatawhiri Compartment 5 (Miller Farlane) - SB 00	0	0.30	100	River flow	2021	156	5.73	6.03	7.01	1.28	15/07/2020	1
25080	2037	Mangatawhiri Compartment 5 (Miller Farlane) - SB 01	100	0.30	100	River flow	2021	155	5.73	6.03	5.83	0.10	15/07/2020	3
25080	2038	Mangatawhiri Compartment 5 (Miller Farlane) - SB 02	200	0.30	100	River flow	2021	155	5.73	6.03	6.01	0.28	15/07/2020	2
25080	2039	Mangatawhiri Compartment 5 (Miller Farlane) - SB 03	300	0.30	100	River flow	2021	155	5.73	6.03	5.86	0.13	15/07/2020	3
25080	2040	Mangatawhiri Compartment 5 (Miller Farlane) - SB 04	400	0.30	100	River flow	2021	154	5.73	6.03	5.83	0.10	15/07/2020	3
25080	2041	Mangatawhiri Compartment 5 (Miller Farlane) - SB 05	427	0.30	100	River flow	2021	154	5.73	6.03	5.79	0.06	15/07/2020	4
37134	59580	Mercer West Northern Main SB 00	0	0.60	10	River flow	2021	1171	5.04	5.64	6.23	1.19	8/12/2012	1
37134	48772	Mercer West Northern Main SB 01	100	0.60	10	River flow	2021	1171	5.04	5.64	6.15	1.11	8/12/2012	1
37134	48773	Mercer West Northern Main SB 02	200	0.60	10	River flow	2021	1171	5.04	5.64	5.99	0.95	8/12/2012	1
37134	48774	Mercer West Northern Main SB 03	300	0.60	10	River flow	2021	1171	5.05	5.65	5.89	0.85	8/12/2012	1
37134	48775	Mercer West Northern Main SB 04	400	0.60	10	River flow	2021	1171	5.05	5.65	6.04	0.99	8/12/2012	1
37134	48776	Mercer West Northern Main SB 05	500	0.60	10	River flow	2021	1171	5.05	5.65	6.09	1.04	8/12/2012	1
37134	48777	Mercer West Northern Main SB 06	600	0.60	10	River flow	2021	1171	5.06	5.66	6.24	1.19	8/12/2012	1
37134	48778	Mercer West Northern Main SB 07	700	0.60	10	River flow	2021	1171	5.06	5.66	6.18	1.12	8/12/2012	1
37134	48779	Mercer West Northern Main SB 08	800	0.60	10	River flow	2021	1171	5.06	5.66	5.89	0.83	8/12/2012	1
37134	48780	Mercer West Northern Main SB 09	900	0.60	10	River flow	2021	1171	5.07	5.67	6.29	1.22	8/12/2012	1
37134	48781	Mercer West Northern Main SB 10	1000	0.60	10	River flow	2021	1171	5.08	5.68	5.69	0.61	8/12/2012	1
37134	48782	Mercer West Northern Main SB 11	1100	0.60	10	River flow	2021	1171	5.10	5.70	5.83	0.73	8/12/2012	1
37134	48783	Mercer West Northern Main SB 12	1200	0.60	10	River flow	2021	1171	5.11	5.71	5.86	0.75	8/12/2012	1

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37134	48784	Mercer West Northern Main SB 13	1300	0.60	10	River flow	2021	1171	5.13	5.73	6.09	0.96	8/12/2012	1
37134	48785	Mercer West Northern Main SB 14	1400	0.60	10	River flow	2021	1171	5.14	5.74	6.04	0.90	8/12/2012	1
37134	48786	Mercer West Northern Main SB 15	1500	0.60	10	River flow	2021	1171	5.15	5.75	6.04	0.89	8/12/2012	1
37134	48787	Mercer West Northern Main SB 16	1600	0.60	10	River flow	2021	1171	5.17	5.77	5.97	0.80	8/12/2012	1
37134	48788	Mercer West Northern Main SB 17	1700	0.60	10	River flow	2021	1171	5.20	5.80	5.94	0.74	8/12/2012	1
37134	48789	Mercer West Northern Main SB 18	1800	0.60	10	River flow	2021	1172	5.23	5.83	5.85	0.63	8/12/2012	1
37134	48790	Mercer West Northern Main SB 19	1900	0.60	10	River flow	2021	1172	5.25	5.85	5.93	0.68	8/12/2012	1
37134	48791	Mercer West Northern Main SB 20	2000	0.60	10	River flow	2021	1172	5.28	5.88	5.97	0.69	8/12/2012	1
37134	48792	Mercer West Northern Main SB 21	2100	0.60	10	River flow	2021	1172	5.30	5.90	5.98	0.68	8/12/2012	1
37134	48793	Mercer West Northern Main SB 22	2200	0.60	10	River flow	2021	1172	5.33	5.93	6.22	0.90	8/12/2012	1
37134	48794	Mercer West Northern Main SB 23	2300	0.60	10	River flow	2021	1172	5.35	5.95	6.17	0.82	8/12/2012	1
37134	48795	Mercer West Northern Main SB 24	2400	0.60	10	River flow	2021	1172	5.37	5.97	6.03	0.66	8/12/2012	1
37134	48796	Mercer West Northern Main SB 25	2500	0.60	10	River flow	2021	1172	5.38	5.98	6.03	0.65	8/12/2012	1
37134	48797	Mercer West Northern Main SB 26	2600	0.60	10	River flow	2021	1172	5.39	5.99	6.00	0.61	8/12/2012	1
37134	48798	Mercer West Northern Main SB 27	2700	0.60	10	River flow	2021	1172	5.40	6.00	6.03	0.63	8/12/2012	1
37134	48799	Mercer West Northern Main SB 28	2800	0.60	10	River flow	2021	1172	5.41	6.01	6.12	0.71	8/12/2012	1
37134	48800	Mercer West Northern Main SB 29	2900	0.60	10	River flow	2021	1172	5.42	6.02	5.91	0.49	8/12/2012	2
37134	48801	Mercer West Northern Main SB 30	3000	0.60	10	River flow	2021	1172	5.43	6.03	5.87	0.45	8/12/2012	2
23645	59631	Meremere Main SB 00	0	0.31	100	River flow	2021	1531	6.71	7.02	7.25	0.54	22/05/2017	1
23645	2465	Meremere Main SB 01	100	0.31	100	River flow	2021	1531	6.71	7.02	7.24	0.54	22/05/2017	1
23645	2466	Meremere Main SB 02	200	0.31	100	River flow	2021	1531	6.71	7.02	7.69	0.99	22/05/2017	1
23645	2467	Meremere Main SB 03	300	0.31	100	River flow	2021	1531	6.71	7.02	7.14	0.44	22/05/2017	1
23645	2468	Meremere Main SB 04	384	0.31	100	River flow	2021	1531	6.71	7.02	7.13	0.43	22/05/2017	1
22889	59595	Meremere West SB 00	0	0.60	10	River flow	2021	1172	5.90	6.50	7.67	1.77	1/04/2010	1
22889	2470	Meremere West SB 01	100	0.60	10	River flow	2021	1172	5.90	6.50	6.56	0.66	1/04/2010	1

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22889	2471	Meremere West SB 02	200	0.60	10	River flow	2021	1172	5.91	6.51	6.68	0.77	1/04/2010	1
22889	2472	Meremere West SB 03	300	0.60	10	River flow	2021	1172	5.92	6.52	6.71	0.79	1/04/2010	1
22889	2473	Meremere West SB 04	400	0.60	10	River flow	2021	1172	5.93	6.53	6.75	0.82	1/04/2010	1
22889	2474	Meremere West SB 05	500	0.60	10	River flow	2021	1172	5.94	6.54	6.62	0.68	1/04/2010	1
22889	2475	Meremere West SB 06	600	0.60	10	River flow	2021	1172	5.95	6.55	6.72	0.77	1/04/2010	1
22889	2476	Meremere West SB 07	700	0.60	10	River flow	2021	1172	5.95	6.55	6.83	0.88	1/04/2010	1
22889	2477	Meremere West SB 08	800	0.60	10	River flow	2021	1172	5.96	6.56	6.87	0.91	1/04/2010	1
22889	2478	Meremere West SB 09	900	0.60	10	River flow	2021	1172	5.97	6.57	6.89	0.92	1/04/2010	1
22889	2479	Meremere West SB 10	1000	0.60	10	River flow	2021	1172	5.98	6.58	6.89	0.91	1/04/2010	1
22889	2480	Meremere West SB 11	1100	0.60	10	River flow	2021	1172	5.98	6.58	6.75	0.77	1/04/2010	1
22889	2481	Meremere West SB 12	1200	0.60	10	River flow	2021	1172	5.99	6.59	6.90	0.91	1/04/2010	1
22889	2482	Meremere West SB 13	1300	0.60	10	River flow	2021	1172	6.00	6.60	6.93	0.93	1/04/2010	1
22889	2483	Meremere West SB 14	1400	0.60	10	River flow	2021	1172	6.01	6.61	6.78	0.77	1/04/2010	1
22889	2484	Meremere West SB 15	1500	0.60	10	River flow	2021	1172	6.03	6.63	6.87	0.84	1/04/2010	1
22889	2485	Meremere West SB 16	1600	0.60	10	River flow	2021	1172	6.05	6.65	6.95	0.91	1/04/2010	1
22889	2486	Meremere West SB 17	1700	0.60	10	River flow	2021	1172	6.06	6.66	7.04	0.98	1/04/2010	1
22889	2487	Meremere West SB 18	1800	0.60	10	River flow	2021	1172	6.08	6.68	7.00	0.92	1/04/2010	1
22889	2488	Meremere West SB 19	1900	0.60	10	River flow	2021	1172	6.10	6.70	6.97	0.87	1/04/2010	1
22889	2489	Meremere West SB 20	2000	0.60	10	River flow	2021	1172	6.11	6.71	6.90	0.79	1/04/2010	1
22889	2490	Meremere West SB 21	2100	0.60	10	River flow	2021	1172	6.12	6.72	6.81	0.69	1/04/2010	1
22889	2491	Meremere West SB 22	2200	0.60	10	River flow	2021	1172	6.13	6.73	6.71	0.58	1/04/2010	2
22889	2492	Meremere West SB 23	2300	0.60	10	River flow	2021	1172	6.15	6.75	6.89	0.74	1/04/2010	1
22889	2493	Meremere West SB 24	2400	0.60	10	River flow	2021	1172	6.16	6.76	6.80	0.64	1/04/2010	1
22889	2494	Meremere West SB 25	2500	0.60	10	River flow	2021	1171	6.18	6.78	6.82	0.64	1/04/2010	1
22889	2495	Meremere West SB 26	2600	0.60	10	River flow	2021	1171	6.20	6.80	6.93	0.73	1/04/2010	1

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22889	2496	Meremere West SB 27	2700	0.60	10	River flow	2021	1171	6.23	6.83	6.88	0.65	1/04/2010	1
22889	2497	Meremere West SB 28	2800	0.60	10	River flow	2021	1171	6.24	6.84	6.97	0.73	1/04/2010	1
22889	2498	Meremere West SB 29	2900	0.60	10	River flow	2021	1171	6.25	6.85	6.95	0.70	1/04/2010	1
22889	2499	Meremere West SB 30	3000	0.60	10	River flow	2021	1171	6.26	6.86	6.92	0.67	1/04/2010	1
22889	2500	Meremere West SB 31	3100	0.60	10	River flow	2021	1171	6.26	6.86	6.96	0.70	1/04/2010	1
22889	2501	Meremere West SB 32	3200	0.60	10	River flow	2021	1171	6.27	6.87	6.93	0.66	1/04/2010	1
22889	2502	Meremere West SB 33	3300	0.60	10	River flow	2021	1171	6.29	6.89	6.96	0.67	1/04/2010	1
22889	2503	Meremere West SB 34	3400	0.60	10	River flow	2021	1171	6.30	6.90	6.99	0.69	1/04/2010	1
22889	2504	Meremere West SB 35	3500	0.60	10	River flow	2021	1171	6.32	6.92	7.06	0.74	1/04/2010	1
22889	2505	Meremere West SB 36	3600	0.60	10	River flow	2021	1171	6.34	6.94	7.24	0.90	1/04/2010	1
22889	2506	Meremere West SB 37	3700	0.60	10	River flow	2021	1171	6.36	6.96	7.05	0.69	1/04/2010	1
22889	2507	Meremere West SB 38	3800	0.60	10	River flow	2021	1171	6.37	6.97	6.99	0.62	1/04/2010	1
22889	2508	Meremere West SB 39	3900	0.60	10	River flow	2021	1171	6.38	6.98	6.97	0.59	1/04/2010	2
22889	2509	Meremere West SB 40	4000	0.60	10	River flow	2021	1171	6.39	6.99	6.96	0.57	1/04/2010	2
22889	2510	Meremere West SB 41	4100	0.60	10	River flow	2021	1171	6.40	7.00	6.99	0.59	1/04/2010	2
22889	2511	Meremere West SB 42	4200	0.60	10	River flow	2021	1171	6.41	7.01	7.06	0.65	1/04/2010	1
22889	2512	Meremere West SB 43	4300	0.60	10	River flow	2021	1172	6.42	7.02	7.10	0.68	1/04/2010	1
22889	2513	Meremere West SB 44	4308	0.60	10	River flow	2021	1172	6.42	7.02	7.64	1.22	1/04/2010	1
22479	59581	Morrison Road Main SB 00	0	0.60	10	River flow	2021	1172	5.43	6.03	6.10	0.68	1/12/2021	1
22479	32379	Morrison Road Main SB 01	100	0.60	10	River flow	2021	1172	5.43	6.03	6.14	0.71	1/12/2021	1
22479	32380	Morrison Road Main SB 02	200	0.60	10	River flow	2021	1172	5.43	6.03	6.02	0.59	1/12/2021	2
22479	32381	Morrison Road Main SB 03	300	0.60	10	River flow	2021	1172	5.44	6.04	6.10	0.66	1/12/2021	1
22479	32382	Morrison Road Main SB 04	400	0.60	10	River flow	2021	1172	5.44	6.04	6.14	0.70	1/12/2021	1
22479	32383	Morrison Road Main SB 05	500	0.60	10	River flow	2021	1172	5.46	6.06	6.06	0.61	1/12/2021	1
22479	32384	Morrison Road Main SB 06	600	0.60	10	River flow	2021	1172	5.47	6.07	6.12	0.65	1/12/2021	1

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22479	32385	Morrison Road Main SB 07	700	0.60	10	River flow	2021	1172	5.49	6.09	5.91	0.42	1/12/2021	2
22479	32386	Morrison Road Main SB 08	800	0.60	10	River flow	2021	1172	5.51	6.11	6.07	0.56	2/12/2021	2
27315	59728	Ohairoa SB 00	0	0.61	10	River flow	2021	1179	4.20	4.81	7.30	3.10	1/12/1999	1
27315	2012	Ohairoa SB 01	100	0.61	10	River flow	2021	1179	4.20	4.81	6.04	1.84	1/12/1999	1
27315	2013	Ohairoa SB 02	200	0.61	10	River flow	2021	1179	4.20	4.81	5.84	1.64	1/12/1999	1
27315	2014	Ohairoa SB 03	300	0.61	10	River flow	2021	1179	4.20	4.81	5.16	0.96	1/12/1999	1
27315	2015	Ohairoa SB 04	400	0.61	10	River flow	2021	1179	4.20	4.81	5.14	0.94	1/12/1999	1
27315	2016	Ohairoa SB 05	500	0.61	10	River flow	2021	1179	4.20	4.81	5.16	0.96	1/12/1999	1
27315	2017	Ohairoa SB 06	600	0.61	10	River flow	2021	1179	4.20	4.81	5.14	0.94	1/12/1999	1
27315	2018	Ohairoa SB 07	700	0.61	10	River flow	2021	1179	4.20	4.81	5.09	0.89	1/12/1999	1
27315	2019	Ohairoa SB 08	800	0.61	10	River flow	2021	1179	4.20	4.81	4.75	0.55	1/12/1999	2
27315	2020	Ohairoa SB 09	900	0.61	10	River flow	2021	1179	4.20	4.81	4.73	0.53	1/12/1999	2
27315	2021	Ohairoa SB 10	1000	0.61	10	River flow	2021	1179	4.20	4.81	4.42	0.22	1/12/1999	3
27315	2022	Ohairoa SB 11	1100	0.61	10	River flow	2021	1179	4.21	4.82	4.62	0.41	1/12/1999	2
27315	2023	Ohairoa SB 12	1200	0.61	10	River flow	2021	1179	4.21	4.82	4.87	0.66	1/12/1999	1
27315	2024	Ohairoa SB 13	1300	0.61	10	River flow	2021	1179	4.22	4.83	4.45	0.24	1/12/1999	3
27315	2025	Ohairoa SB 14	1400	0.61	10	River flow	2021	1179	4.22	4.83	4.59	0.37	1/12/1999	2
27315	2026	Ohairoa SB 15	1500	0.61	10	River flow	2021	1179	4.22	4.83	4.96	0.74	1/12/1999	1
27315	2027	Ohairoa SB 16	1600	0.61	10	River flow	2021	1179	4.22	4.83	4.96	0.74	1/12/1999	1
27315	2028	Ohairoa SB 17	1700	0.61	10	River flow	2021	1179	4.21	4.82	4.94	0.73	1/12/1999	1
27315	2029	Ohairoa SB 18	1800	0.61	10	River flow	2021	1179	4.21	4.82	4.62	0.41	1/12/1999	2
27315	2030	Ohairoa SB 19	1900	0.61	10	River flow	2021	1179	4.20	4.81	4.83	0.63	1/12/1999	1
27315	2031	Ohairoa SB 20	2000	0.61	10	River flow	2021	1179	4.20	4.81	5.00	0.80	1/12/1999	1
27315	2032	Ohairoa SB 21	2100	0.61	10	River flow	2021	1179	4.20	4.81	4.79	0.59	1/12/1999	2
27315	2033	Ohairoa SB 22	2200	0.61	10	River flow	2021	1179	4.20	4.81	4.94	0.74	1/12/1999	1

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27315	2034	Ohairoa SB 23	2300	0.61	10	River flow	2021	1179	4.20	4.81	5.03	0.83	1/12/1999	1
27315	2035	Ohairoa SB 24	2400	0.61	10	River flow	2021	1179	4.20	4.81	5.37	1.17	1/12/1999	1
27315	2036	Ohairoa SB 25	2470	0.61	10	River flow	2021	1179	4.20	4.81	6.25	2.05	1/12/1999	1
25083	59652	Okowhao Sect SB 00	0	0.30	100	River flow	2021	295	10.71	11.01	11.45	0.74	1/03/2009	1
25083	2841	Okowhao Sect SB 01	100	0.30	100	River flow	2021	295	10.74	11.04	11.30	0.57	1/03/2009	1
25083	2842	Okowhao Sect SB 02	200	0.30	100	River flow	2021	295	10.74	11.04	11.47	0.74	1/03/2009	1
25083	2843	Okowhao Sect SB 03	300	0.30	100	River flow	2021	1730	10.83	11.13	11.55	0.73	1/03/2009	1
25083	2844	Okowhao Sect SB 04	400	0.30	100	River flow	2021	1730	10.83	11.13	11.56	0.73	1/03/2009	1
25083	2845	Okowhao Sect SB 05	500	0.30	100	River flow	2021	1730	10.84	11.14	11.50	0.66	1/03/2009	1
25083	2846	Okowhao Sect SB 06	600	0.30	100	River flow	2021	1730	10.85	11.15	11.54	0.69	1/03/2009	1
25083	2847	Okowhao Sect SB 07	700	0.30	100	River flow	2021	1730	10.87	11.17	11.50	0.63	1/03/2009	1
25083	2848	Okowhao Sect SB 08	800	0.30	100	River flow	2021	1730	10.89	11.19	11.48	0.59	1/03/2009	1
25083	2849	Okowhao Sect SB 09	900	0.30	100	River flow	2021	1730	10.92	11.22	10.97	0.06	1/03/2009	4
25083	2850	Okowhao Sect SB 10	1000	0.30	100	River flow	2021	1730	10.94	11.24	11.63	0.69	1/03/2009	1
25083	2851	Okowhao Sect SB 11	1100	0.30	100	River flow	2021	1730	10.96	11.26	11.70	0.74	1/03/2009	1
25083	2852	Okowhao Sect SB 12	1200	0.30	100	River flow	2021	1730	10.98	11.28	11.58	0.60	1/03/2009	1
25083	2853	Okowhao Sect SB 13	1300	0.30	100	River flow	2021	1730	10.99	11.29	11.59	0.60	1/03/2009	1
25083	2854	Okowhao Sect SB 14	1400	0.30	100	River flow	2021	1730	11.01	11.31	11.65	0.64	1/03/2009	1
25083	2855	Okowhao Sect SB 15	1500	0.30	100	River flow	2021	1730	11.02	11.32	11.57	0.55	1/03/2009	1
25083	2856	Okowhao Sect SB 16	1600	0.30	100	River flow	2021	1730	11.03	11.33	11.40	0.37	1/03/2009	1
25083	2857	Okowhao Sect SB 17	1700	0.30	100	River flow	2021	1730	11.05	11.35	11.67	0.62	1/03/2009	1
25083	2858	Okowhao Sect SB 18	1800	0.30	100	River flow	2021	1730	11.07	11.37	11.76	0.70	1/03/2009	1
25083	2859	Okowhao Sect SB 19	1900	0.30	100	River flow	2021	1730	11.08	11.38	11.71	0.63	1/03/2009	1
25083	2860	Okowhao Sect SB 20	2000	0.30	100	River flow	2021	1730	11.10	11.40	11.80	0.70	1/03/2009	1
25083	2861	Okowhao Sect SB 21	2100	0.30	100	River flow	2021	1730	11.11	11.41	11.88	0.77	1/03/2009	1

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25083	2862	Okowhao Sect SB 22	2200	0.30	100	River flow	2021	1730	11.12	11.42	11.89	0.77	1/03/2009	1
25083	2863	Okowhao Sect SB 23	2300	0.30	100	River flow	2021	1730	11.14	11.44	11.88	0.74	1/03/2009	1
25083	2864	Okowhao Sect SB 24	2400	0.30	100	River flow	2021	1730	11.15	11.45	11.91	0.76	1/03/2009	1
25083	2865	Okowhao Sect SB 25	2500	0.30	100	River flow	2021	1730	11.17	11.47	11.98	0.82	1/03/2009	1
25083	2866	Okowhao Sect SB 26	2600	0.30	100	River flow	2021	1730	11.18	11.48	11.88	0.70	1/03/2009	1
25083	2867	Okowhao Sect SB 27	2700	0.30	100	River flow	2021	1730	11.20	11.50	12.14	0.94	1/03/2009	1
25083	2868	Okowhao Sect SB 28	2709	0.30	100	River flow	2021	1730	11.20	11.50	12.74	1.54	1/03/2009	1
26574	59674	Onewhero East SB 00	0	0.46	10	River flow	2021	1180	4.10	4.56	4.56	0.46	NULL	1
26574	1915	Onewhero East SB 01	100	0.46	10	River flow	2021	1180	4.08	4.54	5.54	1.46	1/12/1999	1
26574	1916	Onewhero East SB 02	200	0.46	10	River flow	2021	1180	4.06	4.52	5.21	1.15	1/12/1999	1
26574	1917	Onewhero East SB 03	300	0.46	10	River flow	2021	1180	4.04	4.50	5.09	1.05	1/12/1999	1
26574	1918	Onewhero East SB 04	400	0.46	10	River flow	2021	1180	4.02	4.48	5.15	1.13	1/12/1999	1
26574	1919	Onewhero East SB 05	500	0.46	10	River flow	2021	1180	4.00	4.46	4.88	0.88	1/12/1999	1
26574	1920	Onewhero East SB 06	600	0.46	10	River flow	2021	1180	3.98	4.44	4.73	0.75	1/12/1999	1
26574	1921	Onewhero East SB 07	700	0.46	10	River flow	2021	1180	3.96	4.42	4.86	0.90	1/12/1999	1
26574	1922	Onewhero East SB 08	800	0.46	10	River flow	2021	1180	3.96	4.42	4.92	0.96	1/12/1999	1
26574	1923	Onewhero East SB 09	900	0.46	10	River flow	2021	1180	3.96	4.42	5.00	1.04	1/12/1999	1
26574	1924	Onewhero East SB 10	1000	0.46	10	River flow	2021	1180	3.96	4.42	5.01	1.05	1/12/1999	1
26574	1925	Onewhero East SB 11	1100	0.46	10	River flow	2021	1180	3.97	4.43	4.73	0.77	1/12/1999	1
26574	1926	Onewhero East SB 12	1200	0.46	10	River flow	2021	1180	3.97	4.43	5.24	1.27	1/12/1999	1
26574	1927	Onewhero East SB 13	1300	0.46	10	River flow	2021	1180	3.97	4.43	4.35	0.38	1/12/1999	2
26574	1928	Onewhero East SB 14	1400	0.46	10	River flow	2021	1180	3.98	4.44	4.11	0.14	1/12/1999	3
26574	1929	Onewhero East SB 15	1500	0.46	10	River flow	2021	1180	3.98	4.44	4.32	0.34	1/12/1999	2
26574	1930	Onewhero East SB 16	1600	0.46	10	River flow	2021	1180	3.98	4.44	4.30	0.32	1/12/1999	2
26574	1931	Onewhero East SB 17	1700	0.46	10	River flow	2021	1180	3.99	4.45	4.39	0.40	1/12/1999	2

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
26574	1932	Onewhero East SB 18	1800	0.46	10	River flow	2021	1180	3.99	4.45	4.25	0.26	1/12/1999	2
26574	1933	Onewhero East SB 19	1900	0.46	10	River flow	2021	1180	3.99	4.45	4.08	0.09	1/12/1999	4
26574	1934	Onewhero East SB 20	2000	0.46	10	River flow	2021	1180	4.00	4.46	4.37	0.38	1/12/1999	2
26574	1935	Onewhero East SB 21	2100	0.46	10	River flow	2021	1180	4.00	4.46	4.26	0.27	1/12/1999	2
26574	1936	Onewhero East SB 22	2200	0.46	10	River flow	2021	1180	4.00	4.46	4.63	0.63	1/12/1999	1
26574	1937	Onewhero East SB 23	2300	0.46	10	River flow	2021	1180	4.00	4.46	4.60	0.60	1/12/1999	1
26574	1938	Onewhero East SB 24	2400	0.46	10	River flow	2021	1180	4.00	4.46	4.52	0.52	1/12/1999	1
26574	1939	Onewhero East SB 25	2500	0.46	10	River flow	2021	1180	4.00	4.46	4.56	0.56	1/12/1999	1
26574	1940	Onewhero East SB 26	2600	0.46	10	River flow	2021	1180	4.00	4.46	4.49	0.49	1/12/1999	1
26574	1941	Onewhero East SB 27	2635	0.46	10	River flow	2021	1180	4.00	4.46	4.47	0.47	1/12/1999	1
22892	59596	Onewhero West SB 00	0	0.46	10	River flow	2021	1181	3.86	4.32	4.60	0.74	1/12/2021	1
22892	1876	Onewhero West SB 01	100	0.46	10	River flow	2021	1181	3.86	4.32	4.60	0.74	1/12/2021	1
22892	1877	Onewhero West SB 02	200	0.46	10	River flow	2021	1181	3.86	4.32	4.80	0.95	1/12/2021	1
22892	1878	Onewhero West SB 03	300	0.46	10	River flow	2021	1181	3.85	4.31	4.70	0.85	1/12/2021	1
22892	1879	Onewhero West SB 04	400	0.46	10	River flow	2021	1181	3.85	4.31	4.55	0.70	1/12/2021	1
22892	1880	Onewhero West SB 05	500	0.46	10	River flow	2021	1181	3.85	4.31	4.53	0.69	1/12/2021	1
22892	1881	Onewhero West SB 06	600	0.46	10	River flow	2021	1181	3.84	4.30	4.46	0.62	1/12/2021	1
22892	1882	Onewhero West SB 07	700	0.46	10	River flow	2021	1181	3.84	4.30	4.24	0.40	1/12/2021	2
22892	1883	Onewhero West SB 08	800	0.46	10	River flow	2021	1181	3.84	4.30	4.10	0.26	1/12/2021	2
22892	1884	Onewhero West SB 09	900	0.46	10	River flow	2021	1181	3.84	4.30	4.00	0.16	1/12/2021	3
22892	1885	Onewhero West SB 10	1000	0.46	10	River flow	2021	1181	3.84	4.30	3.94	0.10	1/12/2021	4
22892	1886	Onewhero West SB 11	1100	0.46	10	River flow	2021	1181	3.83	4.29	4.00	0.17	1/12/2021	3
22892	1887	Onewhero West SB 12	1200	0.46	10	River flow	2021	1181	3.83	4.29	3.80	-0.03	1/12/2021	5
22892	1888	Onewhero West SB 13	1300	0.46	10	River flow	2021	1181	3.83	4.29	3.82	-0.01	1/12/2021	5
22892	1889	Onewhero West SB 14	1400	0.46	10	River flow	2021	1181	3.83	4.29	3.88	0.05	1/12/2021	4

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22892	1890	Onewhero West SB 15	1500	0.46	10	River flow	2021	1181	3.83	4.29	3.81	-0.02	1/12/2021	5
22892	1891	Onewhero West SB 16	1600	0.46	10	River flow	2021	1181	3.83	4.29	3.88	0.05	1/12/2021	4
22892	1892	Onewhero West SB 17	1700	0.46	10	River flow	2021	1181	3.84	4.30	3.90	0.06	1/12/2021	4
22892	1893	Onewhero West SB 18	1800	0.46	10	River flow	2021	1181	3.85	4.31	3.83	-0.02	1/12/2021	5
22892	1894	Onewhero West SB 19	1900	0.46	10	River flow	2021	1181	3.86	4.32	3.69	-0.17	1/12/2021	5
22892	1895	Onewhero West SB 20	2000	0.46	10	River flow	2021	1181	3.86	4.32	4.03	0.17	1/12/2021	3
22892	1896	Onewhero West SB 21	2100	0.46	10	River flow	2021	1181	3.87	4.33	4.05	0.18	1/12/2021	3
22892	1897	Onewhero West SB 22	2200	0.46	10	River flow	2021	1181	3.88	4.34	4.08	0.20	1/12/2021	3
22892	1898	Onewhero West SB 23	2300	0.46	10	River flow	2021	1181	3.88	4.34	4.07	0.19	1/12/2021	3
22892	1899	Onewhero West SB 24	2400	0.46	10	River flow	2021	1181	3.88	4.34	4.05	0.17	1/12/2021	3
22892	1900	Onewhero West SB 25	2500	0.46	10	River flow	2021	1181	3.89	4.35	3.92	0.03	1/12/2021	4
22892	1901	Onewhero West SB 26	2600	0.46	10	River flow	2021	1181	3.90	4.36	4.05	0.15	1/12/2021	3
22892	1902	Onewhero West SB 27	2700	0.46	10	River flow	2021	1181	3.91	4.37	4.29	0.38	1/12/2021	2
22892	1903	Onewhero West SB 28	2800	0.46	10	River flow	2021	1181	3.92	4.38	4.12	0.20	1/12/2021	3
22892	1904	Onewhero West SB 29	2900	0.46	10	River flow	2021	1181	3.92	4.38	4.18	0.26	1/12/2021	2
22892	1905	Onewhero West SB 30	3000	0.46	10	River flow	2021	1180	3.96	4.42	3.94	-0.02	1/12/2021	5
22892	1906	Onewhero West SB 31	3100	0.46	10	River flow	2021	1180	3.96	4.42	3.83	-0.13	1/12/2021	5
22892	1907	Onewhero West SB 32	3200	0.46	10	River flow	2021	1180	3.98	4.44	3.74	-0.24	1/12/2021	5
22892	1908	Onewhero West SB 33	3300	0.46	10	River flow	2021	1180	4.00	4.46	3.79	-0.21	1/12/2021	5
22892	1909	Onewhero West SB 34	3400	0.46	10	River flow	2021	1180	4.02	4.48	3.89	-0.13	1/12/2021	5
22892	1910	Onewhero West SB 35	3500	0.46	10	River flow	2021	1180	4.04	4.50	4.09	0.05	1/12/2021	4
22892	1911	Onewhero West SB 36	3600	0.46	10	River flow	2021	1180	4.06	4.52	4.21	0.15	1/12/2021	3
22892	1912	Onewhero West SB 37	3700	0.46	10	River flow	2021	1180	4.08	4.54	4.54	0.46	1/12/2021	1
22892	1913	Onewhero West SB 38	3781	0.46	10	River flow	2021	1180	4.10	4.56	4.79	0.69	1/12/2021	1
24352	59688	Orton SB 00	0	0.61	10	River flow	2021	1172	6.80	7.41	7.85	1.05	1/04/2010	1

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24352	3937	Orton SB 01	100	0.61	10	River flow	2021	1172	6.80	7.41	7.69	0.89	1/04/2010	1
24352	3938	Orton SB 02	200	0.61	10	River flow	2021	1172	6.79	7.40	7.71	0.92	1/04/2010	1
24352	3939	Orton SB 03	300	0.61	10	River flow	2021	1172	6.79	7.40	7.63	0.84	1/04/2010	1
24352	3940	Orton SB 04	400	0.61	10	River flow	2021	1172	6.78	7.39	7.62	0.84	1/04/2010	1
24352	3941	Orton SB 05	500	0.61	10	River flow	2021	1172	6.77	7.38	7.63	0.86	1/04/2010	1
24352	3942	Orton SB 06	600	0.61	10	River flow	2021	1172	6.76	7.37	7.30	0.54	1/04/2010	2
24352	3943	Orton SB 07	700	0.61	10	River flow	2021	1172	6.75	7.36	7.32	0.57	1/04/2010	2
24352	3944	Orton SB 08	800	0.61	10	River flow	2021	1172	6.73	7.34	7.47	0.74	1/04/2010	1
24352	3945	Orton SB 09	900	0.61	10	River flow	2021	1172	6.72	7.33	7.36	0.64	1/04/2010	1
24352	3946	Orton SB 10	1000	0.61	10	River flow	2021	1172	6.71	7.32	7.47	0.76	1/04/2010	1
24352	3947	Orton SB 11	1100	0.61	10	River flow	2021	1172	6.70	7.31	7.72	1.02	1/04/2010	1
24352	3948	Orton SB 12	1200	0.61	10	River flow	2021	1172	6.68	7.29	7.57	0.89	1/04/2010	1
24352	3949	Orton SB 13	1300	0.61	10	River flow	2021	1172	6.67	7.28	7.61	0.94	1/04/2010	1
24352	3950	Orton SB 14	1400	0.61	10	River flow	2021	1172	6.67	7.28	7.65	0.98	1/04/2010	1
24352	3951	Orton SB 15	1500	0.61	10	River flow	2021	1172	6.67	7.28	7.76	1.09	1/04/2010	1
24352	3952	Orton SB 16	1600	0.61	10	River flow	2021	1172	6.67	7.28	7.68	1.01	1/04/2010	1
24352	3953	Orton SB 17	1635.1	0.61	10	River flow	2021	1172	6.67	7.28	7.95	1.28	1/04/2010	1
28389	59802	Parry Street SB 00	0	0.61	100	River flow	2021	1730	11.58	12.19	12.44	0.86	15/07/2020	1
28389	18651	Parry Street SB 01	100	0.61	100	River flow	2021	1730	11.60	12.21	12.07	0.48	15/07/2020	2
28389	18895	Parry Street SB 02	200	0.61	100	River flow	2021	1730	11.61	12.22	12.24	0.63	15/07/2020	1
28389	18896	Parry Street SB 03	300	0.61	100	River flow	2021	1730	11.63	12.24	11.99	0.36	15/07/2020	2
28389	18897	Parry Street SB 04	315	0.61	100	River flow	2021	1730	11.63	12.24	11.48	-0.15	15/07/2020	5
37292	59579	Rangiriri (Section 1) SB 00	0	0.30	100	River flow	2021	25	9.16	9.46	9.49	0.33	15/06/2019	1
37292	1577	Rangiriri (Section 1) SB 01	22.2	0.30	100	River flow	2021	25	9.16	9.46	9.47	0.31	15/06/2019	1
25811	59758	Rangiriri (Section 1) Spillway 00	0	-0.26	100	River flow	2021	25	9.05	9.05	8.93	-0.12	15/06/2019	3

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25811	1578	Rangiriri (Section 1) Spillway 01	83	-0.26	100	River flow	2021	25	9.05	9.05	9.00	-0.05	15/06/2019	2
37294	59750	Rangiriri (Section 2) SB 00	0	0.30	100	River flow	2021	25	9.16	9.46	9.26	0.10	15/06/2019	3
37294	1579	Rangiriri (Section 2) SB 01	100	0.30	100	River flow	2021	25	9.16	9.46	9.26	0.10	15/06/2019	3
37294	37286	Rangiriri (Section 2) SB 02	178	0.30	100	River flow	2021	68	9.16	9.46	9.32	0.16	15/06/2019	2
37288	59836	Rangiriri (Section 2) Spillway 00	0	-0.26	100	River flow	2021	68	9.05	9.05	8.80	-0.25	15/06/2019	5
37288	1580	Rangiriri (Section 2) Spillway 01	100	-0.26	100	River flow	2021	68	9.05	9.05	8.81	-0.24	15/06/2019	5
37288	1581	Rangiriri (Section 2) Spillway 02	178	-0.26	100	River flow	2021	68	9.05	9.05	8.81	-0.24	15/06/2019	5
37296	59751	Rangiriri (Section 3) SB 00	0	0.30	100	River flow	2021	68	9.21	9.51	9.61	0.40	NULL	1
37296	1582	Rangiriri (Section 3) SB 01	100	0.30	100	River flow	2021	0	9.21	9.51	9.61	0.40	15/06/2019	1
37296	1583	Rangiriri (Section 3) SB 02	200	0.30	100	River flow	2021	0	9.21	9.51	9.73	0.52	15/06/2019	1
37296	1584	Rangiriri (Section 3) SB 03	300	0.30	100	River flow	2021	0	9.21	9.51	9.81	0.59	15/06/2019	1
37296	37287	Rangiriri (Section 3) SB 04	322	0.30	100	River flow	2021	0	9.21	9.51	9.53	0.32	15/06/2019	1
37289	59835	Rangiriri (Section 3) Spillway 00	0	-0.26	100	River flow	2021	0	9.06	9.06	9.10	0.04	1/04/2010	1
37289	1585	Rangiriri (Section 3) Spillway 01	100	-0.26	100	River flow	2021	38	9.07	9.07	9.09	0.02	15/06/2019	1
37289	1586	Rangiriri (Section 3) Spillway 02	200	-0.26	100	River flow	2021	38	9.08	9.08	8.97	-0.11	15/06/2019	3
37289	1587	Rangiriri (Section 3) Spillway 03	300	-0.26	100	River flow	2021	18	9.09	9.09	8.99	-0.10	15/06/2019	2
37289	1588	Rangiriri (Section 3) Spillway 04	400	-0.26	100	River flow	2021	18	9.10	9.10	9.06	-0.04	15/06/2019	2
37289	1589	Rangiriri (Section 3) Spillway 05	500	-0.26	100	River flow	2021	18	9.11	9.11	9.11	0.00	15/06/2019	2
37289	1590	Rangiriri (Section 3) Spillway 06	600	-0.26	100	River flow	2021	18	9.12	9.12	9.10	-0.02	15/06/2019	2
37289	1591	Rangiriri (Section 3) Spillway 07	700	-0.26	100	River flow	2021	15	9.13	9.13	9.10	-0.03	15/06/2019	2
37289	1592	Rangiriri (Section 3) Spillway 08	800	-0.26	100	River flow	2021	15	9.14	9.14	9.06	-0.08	15/06/2019	2
37289	1593	Rangiriri (Section 3) Spillway 09	900	-0.26	100	River flow	2021	15	9.15	9.15	9.16	0.01	15/06/2019	1
37289	1594	Rangiriri (Section 3) Spillway 10	1000	-0.26	100	River flow	2021	15	9.16	9.16	9.12	-0.04	15/06/2019	2
25822	59663	Rangiriri North SB 00	0	0.61	10	River flow	2021	1138	8.03	8.64	8.72	0.69	1/04/2010	1
25822	2869	Rangiriri North SB 01	100	0.61	10	River flow	2021	1138	8.05	8.66	8.69	0.64	1/04/2010	1

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25822	2870	Rangiriri North SB 02	200	0.61	10	River flow	2021	1138	8.06	8.67	8.58	0.52	1/04/2010	2
25822	2871	Rangiriri North SB 03	300	0.61	10	River flow	2021	1138	8.07	8.68	8.55	0.48	1/04/2010	2
25822	2872	Rangiriri North SB 04	400	0.61	10	River flow	2021	1138	8.07	8.68	8.58	0.51	1/04/2010	2
25822	2873	Rangiriri North SB 05	500	0.61	10	River flow	2021	1138	8.07	8.68	8.57	0.50	1/04/2010	2
25822	2874	Rangiriri North SB 06	600	0.61	10	River flow	2021	1138	8.08	8.69	8.79	0.71	1/04/2010	1
25822	2875	Rangiriri North SB 07	700	0.61	10	River flow	2021	1138	8.09	8.70	8.65	0.56	1/04/2010	2
25822	2876	Rangiriri North SB 08	800	0.61	10	River flow	2021	1139	8.10	8.71	8.68	0.58	1/04/2010	2
25822	2877	Rangiriri North SB 09	900	0.61	10	River flow	2021	1139	8.14	8.75	8.75	0.61	1/04/2010	1
25822	2878	Rangiriri North SB 10	1000	0.61	10	River flow	2021	1139	8.15	8.76	8.76	0.61	1/04/2010	1
25822	2879	Rangiriri North SB 11	1100	0.61	10	River flow	2021	1139	8.16	8.77	8.75	0.59	1/04/2010	2
25822	2880	Rangiriri North SB 12	1200	0.61	10	River flow	2021	1139	8.17	8.78	8.75	0.58	1/04/2010	2
25822	2881	Rangiriri North SB 13	1300	0.61	10	River flow	2021	1139	8.18	8.79	8.86	0.68	1/04/2010	1
25822	2882	Rangiriri North SB 14	1400	0.61	10	River flow	2021	1139	8.20	8.81	8.87	0.67	1/04/2010	1
25822	2883	Rangiriri North SB 15	1500	0.61	10	River flow	2021	1139	8.21	8.82	8.83	0.62	1/04/2010	1
25822	2884	Rangiriri North SB 16	1600	0.61	10	River flow	2021	1139	8.22	8.83	8.84	0.62	1/04/2010	1
25822	2885	Rangiriri North SB 17	1700	0.61	10	River flow	2021	1139	8.23	8.84	8.90	0.67	1/04/2010	1
25822	2886	Rangiriri North SB 18	1800	0.61	10	River flow	2021	1139	8.24	8.85	8.84	0.60	1/04/2010	2
25822	2887	Rangiriri North SB 19	1900	0.61	10	River flow	2021	1139	8.24	8.85	8.88	0.64	1/04/2010	1
25822	2888	Rangiriri North SB 20	2000	0.61	10	River flow	2021	1139	8.25	8.86	8.90	0.65	1/04/2010	1
25822	2889	Rangiriri North SB 21	2100	0.61	10	River flow	2021	1139	8.26	8.87	9.01	0.75	1/04/2010	1
25822	2890	Rangiriri North SB 22	2200	0.61	10	River flow	2021	1139	8.27	8.88	8.99	0.72	1/04/2010	1
25822	2891	Rangiriri North SB 23	2300	0.61	10	River flow	2021	1139	8.29	8.90	9.04	0.75	1/04/2010	1
25822	2892	Rangiriri North SB 24	2323	0.61	10	River flow	2021	1139	8.29	8.90	9.09	0.80	1/04/2010	1
24360	59773	Rangiriri Spillway to Wool Scourers SB 00	0	0.30	100	River flow	2021	56	9.32	9.62	9.50	0.18	1/02/2009	2

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
24360	2894	Rangiriri Spillway to Wool Scourers SB 01	100	0.30	100	River flow	2021	56	9.33	9.63	9.50	0.17	1/02/2009	2
24360	2895	Rangiriri Spillway to Wool Scourers SB 02	200	0.30	100	River flow	2021	56	9.34	9.64	9.85	0.51	1/02/2009	1
24360	2896	Rangiriri Spillway to Wool Scourers SB 03	300	0.30	100	River flow	2021	1730	9.36	9.66	9.81	0.45	1/02/2009	1
24360	2897	Rangiriri Spillway to Wool Scourers SB 04	400	0.30	100	River flow	2021	1730	9.37	9.67	9.75	0.38	1/02/2009	1
24360	2898	Rangiriri Spillway to Wool Scourers SB 05	500	0.30	100	River flow	2021	1730	9.39	9.69	9.91	0.52	1/02/2009	1
24360	2899	Rangiriri Spillway to Wool Scourers SB 06	600	0.30	100	River flow	2021	1730	9.40	9.70	9.79	0.39	1/02/2009	1
24360	2900	Rangiriri Spillway to Wool Scourers SB 07	700	0.30	100	River flow	2021	1730	9.41	9.71	9.80	0.39	1/02/2009	1
24360	2901	Rangiriri Spillway to Wool Scourers SB 08	800	0.30	100	River flow	2021	1730	9.43	9.73	9.99	0.56	1/02/2009	1
24360	2902	Rangiriri Spillway to Wool Scourers SB 09	900	0.30	100	River flow	2021	1730	9.45	9.75	10.03	0.58	1/02/2009	1
24360	2903	Rangiriri Spillway to Wool Scourers SB 10	1000	0.30	100	River flow	2021	1730	9.47	9.77	9.86	0.39	1/02/2009	1
24360	2904	Rangiriri Spillway to Wool Scourers SB 11	1100	0.30	100	River flow	2021	1730	9.48	9.78	9.85	0.37	1/02/2009	1
24360	2905	Rangiriri Spillway to Wool Scourers SB 12	1200	0.30	100	River flow	2021	1730	9.50	9.80	10.09	0.60	1/02/2009	1
24360	2906	Rangiriri Spillway to Wool Scourers SB 13	1300	0.30	100	River flow	2021	1730	9.51	9.81	9.90	0.39	1/02/2009	1

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24360	2907	Rangiriri Spillway to Wool Scourers SB 14	1400	0.30	100	River flow	2021	1730	9.52	9.82	9.92	0.40	1/02/2009	1
24360	2908	Rangiriri Spillway to Wool Scourers SB 15	1500	0.30	100	River flow	2021	1730	9.53	9.83	9.99	0.46	1/02/2009	1
24360	2909	Rangiriri Spillway to Wool Scourers SB 16	1600	0.30	100	River flow	2021	1730	9.54	9.84	10.05	0.51	1/02/2009	1
24360	2910	Rangiriri Spillway to Wool Scourers SB 17	1700	0.30	100	River flow	2021	1730	9.55	9.85	10.04	0.49	1/02/2009	1
24360	2911	Rangiriri Spillway to Wool Scourers SB 18	1800	0.30	100	River flow	2021	1730	9.57	9.87	10.11	0.55	1/02/2009	1
24360	2912	Rangiriri Spillway to Wool Scourers SB 19	1900	0.30	100	River flow	2021	1730	9.58	9.88	10.03	0.45	1/02/2009	1
24360	2913	Rangiriri Spillway to Wool Scourers SB 20	2000	0.30	100	River flow	2021	1730	9.59	9.89	10.03	0.44	1/02/2009	1
24360	2914	Rangiriri Spillway to Wool Scourers SB 21	2100	0.30	100	River flow	2021	1730	9.60	9.90	10.07	0.47	1/02/2009	1
24360	2915	Rangiriri Spillway to Wool Scourers SB 22	2200	0.30	100	River flow	2021	1730	9.62	9.92	10.09	0.47	15/06/2019	1
24360	2916	Rangiriri Spillway to Wool Scourers SB 23	2300	0.30	100	River flow	2021	1730	9.63	9.93	10.23	0.60	15/06/2019	1
24360	2917	Rangiriri Spillway to Wool Scourers SB 24	2400	0.30	100	River flow	2021	1730	9.64	9.94	10.13	0.49	15/06/2019	1
24360	2918	Rangiriri Spillway to Wool Scourers SB 25	2500	0.30	100	River flow	2021	1730	9.65	9.95	10.16	0.51	15/06/2019	1
24360	2919	Rangiriri Spillway to Wool Scourers SB 26	2600	0.30	100	River flow	2021	1730	9.66	9.96	9.94	0.28	15/06/2019	2

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24360	2920	Rangiriri Spillway to Wool Scourers SB 27	2700	0.30	100	River flow	2021	1730	9.67	9.97	10.02	0.35	15/06/2019	1
24360	2921	Rangiriri Spillway to Wool Scourers SB 28	2783	0.30	100	River flow	2021	1730	9.68	9.98	10.07	0.39	15/06/2019	1
26575	59675	Rotongaro Canal LB SB 00	0	0.30	100	River flow	2021	7	7.59	7.89	8.07	0.48	1/03/2011	1
26575	2563	Rotongaro Canal LB SB 01	100	0.30	100	River flow	2021	7	7.59	7.89	7.94	0.35	1/03/2011	1
26575	2564	Rotongaro Canal LB SB 02	200	0.30	100	River flow	2021	7	7.60	7.90	8.00	0.40	1/03/2011	1
26575	2565	Rotongaro Canal LB SB 03	300	0.30	100	River flow	2021	7	7.60	7.90	8.13	0.53	1/03/2011	1
26575	2566	Rotongaro Canal LB SB 04	400	0.30	100	River flow	2021	7	7.61	7.91	8.04	0.43	1/03/2011	1
26575	2567	Rotongaro Canal LB SB 05	500	0.30	100	River flow	2021	7	7.61	7.91	8.08	0.47	1/03/2011	1
26575	2568	Rotongaro Canal LB SB 06	600	0.30	100	River flow	2021	7	7.62	7.92	7.99	0.37	1/03/2011	1
26575	2569	Rotongaro Canal LB SB 07	700	0.30	100	River flow	2021	7	7.62	7.92	7.97	0.35	1/03/2011	1
26575	2570	Rotongaro Canal LB SB 08	800	0.30	100	River flow	2021	7	7.62	7.92	8.03	0.41	1/03/2011	1
26575	2571	Rotongaro Canal LB SB 09	900	0.30	100	River flow	2021	7	7.63	7.93	8.00	0.37	1/03/2011	1
26575	2572	Rotongaro Canal LB SB 10	1000	0.30	100	River flow	2021	7	7.63	7.93	8.01	0.38	1/03/2011	1
26575	2573	Rotongaro Canal LB SB 11	1100	0.30	100	River flow	2021	7	7.64	7.94	8.16	0.52	1/03/2011	1
26575	2574	Rotongaro Canal LB SB 12	1200	0.30	100	River flow	2021	7	7.64	7.94	8.16	0.52	1/03/2011	1
26575	2575	Rotongaro Canal LB SB 13	1300	0.30	100	River flow	2021	7	7.65	7.95	8.07	0.42	1/03/2011	1
26575	2576	Rotongaro Canal LB SB 14	1400	0.30	100	River flow	2021	7	7.65	7.95	7.87	0.22	1/03/2011	2
23648	59633	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 00	0	0.46	100	River flow	2021	7	7.59	8.05	8.07	0.48	1/03/2011	1
23648	2578	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 01	100	0.46	100	River flow	2021	7	7.60	8.06	8.07	0.47	1/03/2011	1
23648	2579	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 02	200	0.46	100	River flow	2021	7	7.60	8.06	8.10	0.50	1/03/2011	1

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23648	2580	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 03	300	0.46	100	River flow	2021	7	7.61	8.07	8.09	0.48	1/03/2011	1
23648	2581	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 04	400	0.46	100	River flow	2021	7	7.61	8.07	8.07	0.46	1/03/2011	1
23648	2582	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 05	500	0.46	100	River flow	2021	7	7.61	8.07	7.99	0.38	1/03/2011	2
23648	2583	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 06	600	0.46	100	River flow	2021	7	7.62	8.08	7.94	0.32	1/03/2011	2
23648	2584	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 07	700	0.46	100	River flow	2021	7	7.62	8.08	8.04	0.42	1/03/2011	2
23648	2585	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 08	800	0.46	100	River flow	2021	7	7.63	8.09	8.11	0.48	1/03/2011	1
23648	2586	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 09	900	0.46	100	River flow	2021	7	7.63	8.09	8.13	0.50	1/03/2011	1
23648	2587	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 10	1000	0.46	100	River flow	2021	7	7.64	8.10	8.11	0.47	1/03/2011	1
23648	2588	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 11	1100	0.46	100	River flow	2021	7	7.64	8.10	7.98	0.34	1/03/2011	2
23648	2589	Rotongaro Canal RB Austins Section (D/S of Spillway) SB 12	1196	0.46	100	River flow	2021	7	7.64	8.10	7.98	0.34	1/03/2011	2
26345	59702	Rotongaro Canal RB Austins Section (U/S of Spillway) SB 00	0	0.00	100	River flow	2021	7	7.65	7.65	8.01	0.36	1/03/2011	1
26345	2591	Rotongaro Canal RB Austins Section (U/S of Spillway) SB 01	100	0.00	100	River flow	2021	7	7.65	7.65	7.76	0.11	1/03/2011	1
26345	2592	Rotongaro Canal RB Austins Section (U/S of Spillway) SB 02	108	0.00	100	River flow	2021	7	7.65	7.65	7.83	0.18	1/03/2011	1

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23649	59840	Rotongaro Canal RB Austins Section Spillway 00	0	0.00	100	River flow	2021	7	7.59	7.59	7.98	0.39	1/03/2011	1
23649	1522	Rotongaro Canal RB Austins Section Spillway 01	100	0.00	100	River flow	2021	7	7.59	7.59	7.58	-0.01	1/03/2011	2
23649	1523	Rotongaro Canal RB Austins Section Spillway 02	121	0.00	100	River flow	2021	7	7.59	7.59	7.76	0.17	1/03/2011	1
26576	59676	Rotongaro Canal RB Horo Horo Section SB 00	0	0.46	100	River flow	2021	7	7.65	8.11	7.78	0.13	1/03/2011	3
26576	2593	Rotongaro Canal RB Horo Horo Section SB 01	100	0.46	100	River flow	2021	7	7.65	8.11	7.78	0.13	1/03/2011	3
26576	2594	Rotongaro Canal RB Horo Horo Section SB 02	200	0.46	100	River flow	2021	7	7.66	8.12	8.04	0.38	1/03/2011	2
26576	2595	Rotongaro Canal RB Horo Horo Section SB 03	300	0.46	100	River flow	2021	7	7.66	8.12	7.91	0.25	1/03/2011	2
26576	2596	Rotongaro Canal RB Horo Horo Section SB 04	400	0.46	100	River flow	2021	7	7.66	8.12	7.91	0.25	1/03/2011	2
26576	2597	Rotongaro Canal RB Horo Horo Section SB 05	500	0.46	100	River flow	2021	7	7.67	8.13	7.85	0.18	1/03/2011	3
26576	2598	Rotongaro Canal RB Horo Horo Section SB 06	600	0.46	100	River flow	2021	7	7.67	8.13	7.94	0.27	1/03/2011	2
26576	2599	Rotongaro Canal RB Horo Horo Section SB 07	700	0.46	100	River flow	2021	8	7.67	8.13	7.76	0.09	1/03/2011	4
26576	2600	Rotongaro Canal RB Horo Horo Section SB 08	800	0.46	100	River flow	2021	8	7.68	8.14	8.02	0.34	1/03/2011	2
26576	2601	Rotongaro Canal RB Horo Horo Section SB 09	900	0.46	100	River flow	2021	8	7.68	8.14	8.10	0.42	1/03/2011	2

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26576	2602	Rotongaro Canal RB Horo Horo Section SB 10	1000	0.46	100	River flow	2021	8	7.68	8.14	8.09	0.41	1/03/2011	2
26576	2603	Rotongaro Canal RB Horo Horo Section SB 11	1100	0.46	100	River flow	2021	8	7.68	8.14	8.21	0.53	1/03/2011	1
26576	2604	Rotongaro Canal RB Horo Horo Section SB 12	1200	0.46	100	River flow	2021	8	7.69	8.15	8.13	0.44	1/03/2011	2
26576	2605	Rotongaro Canal RB Horo Horo Section SB 13	1300	0.46	100	River flow	2021	8	7.69	8.15	8.11	0.42	1/03/2011	2
26576	2606	Rotongaro Canal RB Horo Horo Section SB 14	1400	0.46	100	River flow	2021	8	7.69	8.15	8.05	0.36	1/03/2011	2
26576	2607	Rotongaro Canal RB Horo Horo Section SB 15	1500	0.46	100	River flow	2021	8	7.70	8.16	7.94	0.24	1/03/2011	2
26576	2608	Rotongaro Canal RB Horo Horo Section SB 16	1600	0.46	100	River flow	2021	8	7.70	8.16	7.92	0.22	1/03/2011	3
26576	2609	Rotongaro Canal RB Horo Horo Section SB 17	1700	0.46	100	River flow	2021	8	7.70	8.16	8.10	0.40	1/03/2011	2
26576	2610	Rotongaro Canal RB Horo Horo Section SB 18	1800	0.46	100	River flow	2021	8	7.71	8.17	8.07	0.36	1/03/2011	2
26576	2611	Rotongaro Canal RB Horo Horo Section SB 19	1900	0.46	100	River flow	2021	8	7.71	8.17	8.21	0.50	1/03/2011	1
26576	2612	Rotongaro Canal RB Horo Horo Section SB 20	2000	0.46	100	River flow	2021	9	7.71	8.17	8.44	0.73	1/03/2011	1
26576	2613	Rotongaro Canal RB Horo Horo Section SB 21	2100	0.46	100	River flow	2021	10	7.72	8.18	8.46	0.74	1/03/2011	1
26576	2614	Rotongaro Canal RB Horo Horo Section SB 22	2200	0.46	100	River flow	2021	11	7.72	8.18	8.65	0.93	1/03/2011	1

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26576	2615	Rotongaro Canal RB Horo Horo Section SB 23	2300	0.46	100	River flow	2021	13	7.72	8.18	8.72	1.00	1/03/2011	1
26576	2616	Rotongaro Canal RB Horo Horo Section SB 24	2400	0.46	100	River flow	2021	15	7.73	8.19	8.56	0.83	1/03/2011	1
26576	2617	Rotongaro Canal RB Horo Horo Section SB 25	2500	0.46	100	River flow	2021	17	7.73	8.19	8.50	0.77	1/03/2011	1
26576	2618	Rotongaro Canal RB Horo Horo Section SB 26	2600	0.46	100	River flow	2021	18	7.73	8.19	8.09	0.36	1/03/2011	2
26576	2619	Rotongaro Canal RB Horo Horo Section SB 27	2700	0.46	100	River flow	2021	20	7.74	8.20	7.93	0.19	1/03/2011	3
26576	2620	Rotongaro Canal RB Horo Horo Section SB 28	2800	0.46	100	River flow	2021	21	7.74	8.20	7.87	0.13	1/03/2011	3
26576	2621	Rotongaro Canal RB Horo Horo Section SB 29	2900	0.46	100	River flow	2021	21	7.74	8.20	7.74	0.00	1/03/2011	5
26576	71410	Rotongaro Canal RB Horo Horo Section SB 30	2919	0.46	100	River flow	2021	21	7.74	8.20	7.85	0.11	1/03/2011	4
22483	59583	Southern Compartment Main SB 00	0	0.60	10	River flow	2021	1172	5.51	6.11	6.10	0.59	1/12/2007	2
22483	34232	Southern Compartment Main SB 01	100	0.60	10	River flow	2021	1172	5.53	6.13	6.10	0.57	1/12/2007	2
22483	34233	Southern Compartment Main SB 02	200	0.60	10	River flow	2021	1172	5.55	6.15	6.12	0.58	1/12/2007	2
22483	34234	Southern Compartment Main SB 03	300	0.60	10	River flow	2021	1172	5.56	6.16	6.11	0.55	1/12/2007	2
22483	34235	Southern Compartment Main SB 04	400	0.60	10	River flow	2021	1171	5.58	6.18	6.21	0.63	1/12/2007	1
22483	34236	Southern Compartment Main SB 05	500	0.60	10	River flow	2021	1171	5.59	6.19	6.23	0.64	1/12/2007	1
22483	34237	Southern Compartment Main SB 06	600	0.60	10	River flow	2021	1171	5.60	6.20	6.43	0.83	1/12/2007	1
22483	34238	Southern Compartment Main SB 07	700	0.60	10	River flow	2021	1171	5.61	6.21	6.44	0.83	1/12/2007	1
22483	34239	Southern Compartment Main SB 08	800	0.60	10	River flow	2021	1171	5.62	6.22	6.43	0.81	1/12/2007	1
22483	34240	Southern Compartment Main SB 09	900	0.60	10	River flow	2021	1171	5.64	6.24	6.60	0.96	1/12/2007	1

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22483	34241	Southern Compartment Main SB 10	1000	0.60	10	River flow	2021	1171	5.65	6.25	6.55	0.91	1/12/2007	1
22483	34242	Southern Compartment Main SB 11	1100	0.60	10	River flow	2021	1171	5.65	6.25	6.48	0.83	1/12/2007	1
22483	34243	Southern Compartment Main SB 12	1200	0.60	10	River flow	2021	1171	5.66	6.26	6.48	0.82	1/12/2007	1
22483	34244	Southern Compartment Main SB 13	1300	0.60	10	River flow	2021	1171	5.67	6.27	6.41	0.74	1/12/2007	1
22483	34245	Southern Compartment Main SB 14	1400	0.60	10	River flow	2021	1171	5.68	6.28	6.51	0.83	1/12/2007	1
22483	34246	Southern Compartment Main SB 15	1500	0.60	10	River flow	2021	1171	5.68	6.28	6.42	0.74	1/12/2007	1
22483	34247	Southern Compartment Main SB 16	1600	0.60	10	River flow	2021	1171	5.69	6.29	6.52	0.83	1/12/2007	1
22483	34248	Southern Compartment Main SB 17	1700	0.60	10	River flow	2021	1171	5.70	6.30	6.26	0.56	1/12/2007	2
22483	34249	Southern Compartment Main SB 18	1800	0.60	10	River flow	2021	1171	5.70	6.30	6.24	0.54	1/12/2007	2
22483	34250	Southern Compartment Main SB 19	1900	0.60	10	River flow	2021	1171	5.72	6.32	6.29	0.57	1/12/2007	2
22483	34251	Southern Compartment Main SB 20	2000	0.60	10	River flow	2021	1171	5.74	6.34	6.70	0.96	1/12/2007	1
22483	34252	Southern Compartment Main SB 21	2100	0.60	10	River flow	2021	1171	5.76	6.36	6.60	0.84	1/12/2007	1
22483	34253	Southern Compartment Main SB 22	2200	0.60	10	River flow	2021	1171	5.77	6.37	6.44	0.67	1/12/2007	1
22483	39281	Southern Compartment Main SB 23	2300	0.60	10	River flow	2021	1172	5.79	6.39	6.45	0.66	1/12/2007	1
22483	39282	Southern Compartment Main SB 24	2400	0.60	10	River flow	2021	1172	5.80	6.40	6.59	0.79	1/12/2007	1
22483	39283	Southern Compartment Main SB 25	2500	0.60	10	River flow	2021	1172	5.82	6.42	6.64	0.82	1/12/2007	1
22483	39284	Southern Compartment Main SB 26	2600	0.60	10	River flow	2021	1172	5.83	6.43	6.59	0.76	1/12/2007	1
22483	39285	Southern Compartment Main SB 27	2700	0.60	10	River flow	2021	1172	5.84	6.44	6.72	0.88	1/12/2007	1
22483	39286	Southern Compartment Main SB 28	2800	0.60	10	River flow	2021	1172	5.85	6.45	6.56	0.71	1/12/2007	1
22483	39287	Southern Compartment Main SB 29	2900	0.60	10	River flow	2021	1172	5.86	6.46	6.86	1.00	1/12/2007	1
22483	39288	Southern Compartment Main SB 30	3000	0.60	10	River flow	2021	1172	5.86	6.46	6.87	1.01	1/12/2007	1
25824	59664	Te Kohanga Major-Eastern Section 1 SB 00	0	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.69	0.85	1/12/2021	1
25824	1787	Te Kohanga Major-Eastern Section 1 SB 01	100	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.69	0.85	1/12/2021	1

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
25824	1788	Te Kohanga Major-Eastern Section 1 SB 02	200	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.84	1.00	1/12/2021	1
25824	1789	Te Kohanga Major-Eastern Section 1 SB 03	300	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.74	0.90	1/12/2021	1
25824	1790	Te Kohanga Major-Eastern Section 1 SB 04	400	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.65	0.81	1/12/2021	1
25824	1791	Te Kohanga Major-Eastern Section 1 SB 05	500	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.49	0.65	1/12/2021	1
25824	1792	Te Kohanga Major-Eastern Section 1 SB 06	600	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.55	0.71	1/12/2021	1
25824	1793	Te Kohanga Major-Eastern Section 1 SB 07	700	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.62	0.78	1/12/2021	1
25824	1794	Te Kohanga Major-Eastern Section 1 SB 08	800	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.42	0.58	1/12/2021	2
25824	1795	Te Kohanga Major-Eastern Section 1 SB 09	900	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.46	0.62	1/12/2021	1
25824	1796	Te Kohanga Major-Eastern Section 1 SB 10	1000	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.29	0.45	1/12/2021	2
25824	1797	Te Kohanga Major-Eastern Section 1 SB 11	1100	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.17	0.33	1/12/2021	2
25824	1798	Te Kohanga Major-Eastern Section 1 SB 12	1200	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.32	0.48	1/12/2021	2
25824	1799	Te Kohanga Major-Eastern Section 1 SB 13	1300	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.53	0.69	1/12/2021	1
25824	1800	Te Kohanga Major-Eastern Section 1 SB 14	1400	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.52	0.68	1/12/2021	1

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25824	1801	Te Kohanga Major-Eastern Section 1 SB 15	1500	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.36	0.52	1/12/2021	2
25824	1802	Te Kohanga Major-Eastern Section 1 SB 16	1600	0.61	100	Tidal surge	2021	1549	2.85	3.46	3.37	0.52	1/12/2021	2
25824	1803	Te Kohanga Major-Eastern Section 1 SB 17	1700	0.61	100	Tidal surge	2021	1549	2.86	3.47	3.24	0.38	1/12/2021	2
25824	1804	Te Kohanga Major-Eastern Section 1 SB 18	1800	0.61	100	Tidal surge	2021	1549	2.86	3.47	3.22	0.36	1/12/2021	2
25824	1805	Te Kohanga Major-Eastern Section 1 SB 19	1900	0.61	100	Tidal surge	2021	1549	2.86	3.47	3.27	0.41	1/12/2021	2
25824	1806	Te Kohanga Major-Eastern Section 1 SB 20	2000	0.61	100	Tidal surge	2021	1549	2.86	3.47	3.30	0.44	1/12/2021	2
25824	1807	Te Kohanga Major-Eastern Section 1 SB 21	2100	0.61	100	Tidal surge	2021	1549	2.86	3.47	3.45	0.59	1/12/2021	2
25824	1808	Te Kohanga Major-Eastern Section 1 SB 22	2200	0.61	100	Tidal surge	2021	1549	2.87	3.48	3.48	0.61	1/12/2021	2
25824	1809	Te Kohanga Major-Eastern Section 1 SB 23	2300	0.61	100	Tidal surge	2021	1549	2.88	3.49	3.29	0.41	1/12/2021	2
25824	1810	Te Kohanga Major-Eastern Section 1 SB 24	2400	0.61	100	Tidal surge	2021	1549	2.89	3.50	3.20	0.31	1/12/2021	2
25824	1811	Te Kohanga Major-Eastern Section 1 SB 25	2500	0.61	100	Tidal surge	2021	1549	2.90	3.51	3.22	0.32	1/12/2021	2
25824	1812	Te Kohanga Major-Eastern Section 1 SB 26	2600	0.61	100	Tidal surge	2021	1549	2.91	3.52	3.21	0.30	1/12/2021	3
25824	1813	Te Kohanga Major-Eastern Section 1 SB 27	2700	0.61	100	Tidal surge	2021	1549	2.91	3.52	3.41	0.50	1/12/2021	2

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25824	1814	Te Kohanga Major-Eastern Section 1 SB 28	2800	0.61	100	Tidal surge	2021	1549	2.92	3.53	3.40	0.48	1/12/2021	2
25824	1815	Te Kohanga Major-Eastern Section 1 SB 29	2900	0.61	100	Tidal surge	2021	1549	2.93	3.54	3.13	0.20	1/12/2021	3
25824	1816	Te Kohanga Major-Eastern Section 1 SB 30	3000	0.61	100	Tidal surge	2021	1549	2.94	3.55	3.17	0.23	1/12/2021	3
25824	1817	Te Kohanga Major-Eastern Section 1 SB 31	3100	0.61	100	Tidal surge	2021	1549	2.95	3.56	3.35	0.40	1/12/2021	2
25824	1818	Te Kohanga Major-Eastern Section 1 SB 32	3200	0.61	100	Tidal surge	2021	1549	2.96	3.57	3.55	0.59	1/12/2021	2
25824	1819	Te Kohanga Major-Eastern Section 1 SB 33	3300	0.61	100	Tidal surge	2021	1549	2.97	3.58	3.57	0.60	1/12/2021	2
25824	1820	Te Kohanga Major-Eastern Section 1 SB 34	3400	0.61	100	Tidal surge	2021	1549	2.98	3.59	3.56	0.58	1/12/2021	2
25824	1821	Te Kohanga Major-Eastern Section 1 SB 35	3500	0.61	100	Tidal surge	2021	1549	2.99	3.60	3.62	0.64	1/12/2021	1
25824	1822	Te Kohanga Major-Eastern Section 1 SB 36	3600	0.61	100	Tidal surge	2021	1549	3.00	3.61	3.59	0.60	1/12/2021	2
25824	1823	Te Kohanga Major-Eastern Section 1 SB 37	3700	0.61	100	Tidal surge	2021	1549	3.00	3.61	3.78	0.78	1/12/2021	1
25824	1824	Te Kohanga Major-Eastern Section 1 SB 38	3800	0.61	100	Tidal surge	2021	1549	3.01	3.62	3.79	0.78	1/12/2021	1
25824	1825	Te Kohanga Major-Eastern Section 1 SB 39	3900	0.61	100	Tidal surge	2021	1549	3.02	3.63	3.92	0.90	1/12/2021	1
25824	1826	Te Kohanga Major-Eastern Section 1 SB 40	4000	0.61	100	Tidal surge	2021	1549	3.03	3.64	3.50	0.47	1/12/2021	2

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25824	1827	Te Kohanga Major-Eastern Section 1 SB 41	4100	0.61	100	Tidal surge	2021	1549	3.07	3.68	3.73	0.66	1/12/2021	1
25824	1828	Te Kohanga Major-Eastern Section 1 SB 42	4200	0.61	100	Tidal surge	2021	1549	3.08	3.69	3.73	0.65	1/12/2021	1
25824	1829	Te Kohanga Major-Eastern Section 1 SB 43	4300	0.61	100	Tidal surge	2021	1549	3.09	3.70	3.78	0.69	1/12/2021	1
25824	1830	Te Kohanga Major-Eastern Section 1 SB 44	4400	0.61	100	Tidal surge	2021	1549	3.10	3.71	3.89	0.79	1/12/2021	1
25824	1831	Te Kohanga Major-Eastern Section 1 SB 45	4500	0.61	100	Tidal surge	2021	1549	3.11	3.72	3.76	0.65	1/12/2021	1
25824	1832	Te Kohanga Major-Eastern Section 1 SB 46	4600	0.61	100	Tidal surge	2021	1549	3.12	3.73	4.02	0.90	1/12/2021	1
25824	1833	Te Kohanga Major-Eastern Section 1 SB 47	4700	0.61	100	Tidal surge	2021	1548	3.15	3.76	3.93	0.78	1/12/2021	1
25824	1834	Te Kohanga Major-Eastern Section 1 SB 48	4800	0.61	100	Tidal surge	2021	1548	3.16	3.77	3.93	0.77	1/12/2021	1
25824	1835	Te Kohanga Major-Eastern Section 1 SB 49	4900	0.61	100	Tidal surge	2021	1548	3.17	3.78	3.93	0.76	1/12/2021	1
25824	1836	Te Kohanga Major-Eastern Section 1 SB 50	5000	0.61	100	Tidal surge	2021	1548	3.18	3.79	3.97	0.79	1/12/2021	1
25824	1837	Te Kohanga Major-Eastern Section 1 SB 51	5100	0.61	100	Tidal surge	2021	1548	3.19	3.80	3.93	0.74	1/12/2021	1
25824	1838	Te Kohanga Major-Eastern Section 1 SB 52	5200	0.61	100	Tidal surge	2021	1548	3.20	3.81	3.94	0.75	1/12/2021	1
25824	1839	Te Kohanga Major-Eastern Section 1 SB 53	5282	0.61	100	Tidal surge	2021	1548	3.20	3.81	4.14	0.95	1/12/2021	1

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24875	59605	Te Kohanga Major-Eastern Section 2 SB 00	0	0.61	100	Tidal surge	2021	1548	3.20	3.81	4.25	1.05	1/12/2011	1
24875	1840	Te Kohanga Major-Eastern Section 2 SB 01	100	0.61	100	Tidal surge	2021	1548	3.26	3.87	3.95	0.69	1/12/2011	1
24875	1841	Te Kohanga Major-Eastern Section 2 SB 02	200	0.61	100	Tidal surge	2021	1548	3.33	3.94	5.48	2.15	1/12/2011	1
24875	1842	Te Kohanga Major-Eastern Section 2 SB 03	300	0.61	100	Tidal surge	2021	1548	3.39	4.00	6.48	3.09	1/12/2011	1
24875	1843	Te Kohanga Major-Eastern Section 2 SB 04	367	0.61	100	Tidal surge	2021	1548	3.45	4.06	5.71	2.26	1/12/2011	1
27111	59787	Te Kohanga Major-Eastern Section 3 SB 00	0	0.61	100	Tidal surge	2021	1548	3.51	4.12	4.17	0.66	1/12/2021	1
27111	1844	Te Kohanga Major-Eastern Section 3 SB 01	100	0.61	100	Tidal surge	2021	1548	3.58	4.19	3.77	0.19	1/12/2021	3
27111	1845	Te Kohanga Major-Eastern Section 3 SB 02	200	0.61	100	Tidal surge	2021	1548	3.64	4.25	4.31	0.67	1/12/2021	1
27111	1846	Te Kohanga Major-Eastern Section 3 SB 03	300	0.61	100	Tidal surge	2021	1548	3.68	4.29	4.25	0.57	1/12/2021	2
27111	1847	Te Kohanga Major-Eastern Section 3 SB 04	400	0.61	100	Tidal surge	2021	1548	3.72	4.33	4.10	0.38	1/12/2021	2
27111	1848	Te Kohanga Major-Eastern Section 3 SB 05	500	0.61	100	Tidal surge	2021	1548	3.76	4.37	4.08	0.32	1/12/2021	2
27111	1849	Te Kohanga Major-Eastern Section 3 SB 06	556	0.61	100	Tidal surge	2021	1548	3.79	4.40	4.25	0.47	1/12/2021	2
23653	59635	Te Kohanga Major-Western SB 00	0	0.61	100	Tidal surge	2021	1549	2.84	3.45	4.75	1.91	1/12/2021	1
23653	1770	Te Kohanga Major-Western SB 01	100	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.32	0.48	1/12/2021	2

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23653	1771	Te Kohanga Major-Western SB 02	200	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.30	0.46	1/12/2021	2
23653	1772	Te Kohanga Major-Western SB 03	300	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.39	0.55	1/12/2021	2
23653	1773	Te Kohanga Major-Western SB 04	400	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.38	0.54	1/12/2021	2
23653	1774	Te Kohanga Major-Western SB 05	500	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.31	0.47	1/12/2021	2
23653	1775	Te Kohanga Major-Western SB 06	600	0.61	100	Tidal surge	2021	1549	2.85	3.46	3.31	0.46	1/12/2021	2
23653	1776	Te Kohanga Major-Western SB 07	700	0.61	100	Tidal surge	2021	1549	2.85	3.46	3.28	0.43	1/12/2021	2
23653	1777	Te Kohanga Major-Western SB 08	800	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.39	0.55	1/12/2021	2
23653	1778	Te Kohanga Major-Western SB 09	900	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.41	0.57	1/12/2021	2
23653	1779	Te Kohanga Major-Western SB 10	1000	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.51	0.67	1/12/2021	1
23653	1780	Te Kohanga Major-Western SB 11	1100	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.37	0.53	1/12/2021	2
23653	1781	Te Kohanga Major-Western SB 12	1200	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.42	0.58	1/12/2021	2
23653	1782	Te Kohanga Major-Western SB 13	1300	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.28	0.44	1/12/2021	2
23653	1783	Te Kohanga Major-Western SB 14	1400	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.43	0.59	1/12/2021	2
23653	1784	Te Kohanga Major-Western SB 15	1500	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.55	0.71	1/12/2021	1
23653	1785	Te Kohanga Major-Western SB 16	1600	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.57	0.73	1/12/2021	1
23653	1786	Te Kohanga Major-Western SB 17	1672	0.61	100	Tidal surge	2021	1549	2.84	3.45	3.60	0.76	1/12/2021	1
25825	59665	Te Kohanga Minor (Aireys) SB 00	0	0.30	10	Tidal surge	2021	1181	2.76	3.06	4.25	1.49	1/12/2011	1
25825	1851	Te Kohanga Minor (Aireys) SB 01	100	0.30	10	Tidal surge	2021	1181	2.76	3.06	3.31	0.55	1/12/2011	1
25825	17398	Te Kohanga Minor (Aireys) SB 02	200	0.30	10	Tidal surge	2021	1181	2.77	3.07	3.61	0.84	1/12/2011	1
25825	1853	Te Kohanga Minor (Aireys) SB 03	300	0.30	10	Tidal surge	2021	1181	2.83	3.13	3.29	0.46	1/12/2011	1
25825	1854	Te Kohanga Minor (Aireys) SB 04	400	0.30	10	Tidal surge	2021	1181	2.86	3.16	3.25	0.39	1/12/2011	1
25825	1855	Te Kohanga Minor (Aireys) SB 05	500	0.30	10	Tidal surge	2021	1181	3.02	3.32	3.20	0.18	1/12/2011	2
25825	1856	Te Kohanga Minor (Aireys) SB 06	600	0.30	10	Tidal surge	2021	1181	3.04	3.34	3.22	0.18	1/12/2011	2
25825	1857	Te Kohanga Minor (Aireys) SB 07	700	0.30	10	Tidal surge	2021	1181	3.07	3.37	3.26	0.19	1/12/2011	2
25825	1858	Te Kohanga Minor (Aireys) SB 08	800	0.30	10	Tidal surge	2021	1181	3.10	3.40	3.55	0.45	1/12/2011	1

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25825	1859	Te Kohanga Minor (Aireys) SB 09	900	0.30	10	Tidal surge	2021	1181	3.13	3.43	3.56	0.43	1/12/2011	1
25825	1860	Te Kohanga Minor (Aireys) SB 10	1000	0.30	10	Tidal surge	2021	1181	3.16	3.46	3.39	0.23	1/12/2011	2
25825	1861	Te Kohanga Minor (Aireys) SB 11	1100	0.30	10	Tidal surge	2021	1181	3.20	3.50	3.43	0.24	1/12/2011	2
25825	1862	Te Kohanga Minor (Aireys) SB 12	1200	0.30	10	Tidal surge	2021	1181	3.23	3.53	3.70	0.48	1/12/2011	1
25825	1863	Te Kohanga Minor (Aireys) SB 13	1300	0.30	10	Tidal surge	2021	1181	3.26	3.56	3.75	0.49	1/12/2011	1
25825	1864	Te Kohanga Minor (Aireys) SB 14	1400	0.30	10	Tidal surge	2021	1181	3.29	3.59	3.47	0.18	1/12/2011	2
25825	1865	Te Kohanga Minor (Aireys) SB 15	1500	0.30	10	Tidal surge	2021	1181	3.32	3.62	3.64	0.32	1/12/2011	1
25825	1866	Te Kohanga Minor (Aireys) SB 16	1600	0.30	10	Tidal surge	2021	1181	3.35	3.65	3.61	0.26	1/12/2011	2
25825	1867	Te Kohanga Minor (Aireys) SB 17	1700	0.30	10	Tidal surge	2021	1181	3.38	3.68	3.68	0.30	1/12/2011	2
25825	1868	Te Kohanga Minor (Aireys) SB 18	1800	0.30	10	Tidal surge	2021	1181	3.42	3.72	3.73	0.31	1/12/2011	1
25825	1869	Te Kohanga Minor (Aireys) SB 19	1900	0.30	10	Tidal surge	2021	1181	3.45	3.75	3.72	0.27	1/12/2011	2
25825	1870	Te Kohanga Minor (Aireys) SB 20	2000	0.30	10	Tidal surge	2021	1181	3.48	3.78	3.72	0.24	1/12/2011	2
25825	1871	Te Kohanga Minor (Aireys) SB 21	2100	0.30	10	Tidal surge	2021	1181	3.51	3.81	3.65	0.14	1/12/2011	3
25825	1872	Te Kohanga Minor (Aireys) SB 22	2200	0.30	10	Tidal surge	2021	1181	3.54	3.84	3.83	0.29	1/12/2011	2
25825	1873	Te Kohanga Minor (Aireys) SB 23	2300	0.30	10	Tidal surge	2021	1181	3.56	3.86	3.83	0.27	1/12/2011	2
25825	1874	Te Kohanga Minor (Aireys) SB 24	2400	0.30	10	Tidal surge	2021	1181	3.56	3.86	3.29	-0.27	1/12/2011	5
25825	1875	Te Kohanga Minor (Aireys) SB 25	2494	0.30	10	Tidal surge	2021	1181	3.55	3.85	3.25	-0.30	1/12/2011	5
24357	59769	Tickles SB 00	0	0.30	100	Tidal surge	2021	1557	2.31	2.61	4.02	1.71	1/12/2011	1
24357	1720	Tickles SB 01	100	0.30	100	Tidal surge	2021	1557	2.31	2.61	2.80	0.49	1/12/2011	1
24357	1721	Tickles SB 02	200	0.30	100	Tidal surge	2021	1558	2.30	2.60	2.61	0.31	1/12/2011	1
24357	1722	Tickles SB 03	300	0.30	100	Tidal surge	2021	1558	2.30	2.60	2.82	0.52	1/12/2011	1
24357	1723	Tickles SB 04	400	0.30	100	Tidal surge	2021	1558	2.30	2.60	2.62	0.32	1/12/2011	1
24357	1724	Tickles SB 05	500	0.30	100	Tidal surge	2021	1558	2.29	2.59	2.67	0.38	1/12/2011	1
24357	1725	Tickles SB 06	600	0.30	100	Tidal surge	2021	1558	2.29	2.59	2.70	0.41	1/12/2011	1
24357	1726	Tickles SB 07	700	0.30	100	Tidal surge	2021	1558	2.30	2.60	2.68	0.39	1/12/2011	1

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
24357	1727	Tickles SB 08	800	0.30	100	Tidal surge	2021	1558	2.30	2.60	2.36	0.06	1/12/2011	4
24357	1728	Tickles SB 09	900	0.30	100	Tidal surge	2021	1557	2.31	2.61	2.72	0.41	1/12/2011	1
24357	1729	Tickles SB 10	1000	0.30	100	Tidal surge	2021	1557	2.32	2.62	2.61	0.29	1/12/2011	2
24357	1730	Tickles SB 11	1100	0.30	100	Tidal surge	2021	1557	2.32	2.62	2.54	0.22	1/12/2011	2
24357	1731	Tickles SB 12	1200	0.30	100	Tidal surge	2021	1557	2.33	2.63	2.58	0.26	1/12/2011	2
24357	1732	Tickles SB 13	1300	0.30	100	Tidal surge	2021	1557	2.34	2.64	2.46	0.13	1/12/2011	3
24357	1733	Tickles SB 14	1400	0.30	100	Tidal surge	2021	1557	2.34	2.64	2.49	0.15	1/12/2011	2
24357	1734	Tickles SB 15	1500	0.30	100	Tidal surge	2021	1557	2.34	2.64	2.49	0.15	1/12/2011	3
24357	1735	Tickles SB 16	1590	0.30	100	Tidal surge	2021	1556	2.35	2.65	2.57	0.22	1/12/2011	2
25826	59666	Tuakau: East Compartment SB 00	0	0.61	10	River flow	2021	1180	4.00	4.61	5.31	1.32	1/12/2021	1
25826	1986	Tuakau: East Compartment SB 01	100	0.61	10	River flow	2021	1180	4.00	4.61	4.80	0.81	1/12/2021	1
25826	1987	Tuakau: East Compartment SB 02	200	0.61	10	River flow	2021	1180	4.00	4.61	4.79	0.80	1/12/2021	1
25826	1988	Tuakau: East Compartment SB 03	300	0.61	10	River flow	2021	1180	3.99	4.60	4.57	0.58	1/12/2021	2
25826	1989	Tuakau: East Compartment SB 04	400	0.61	10	River flow	2021	1180	3.99	4.60	4.80	0.81	1/12/2021	1
25826	1990	Tuakau: East Compartment SB 05	500	0.61	10	River flow	2021	1180	3.98	4.59	4.23	0.25	1/12/2021	3
25826	1991	Tuakau: East Compartment SB 06	600	0.61	10	River flow	2021	1180	3.98	4.59	3.87	-0.11	1/12/2021	5
25826	1992	Tuakau: East Compartment SB 07	700	0.61	10	River flow	2021	1180	3.98	4.59	4.35	0.38	1/12/2021	2
25826	1993	Tuakau: East Compartment SB 08	800	0.61	10	River flow	2021	1180	3.98	4.59	4.45	0.48	1/12/2021	2
25826	1994	Tuakau: East Compartment SB 09	900	0.61	10	River flow	2021	1180	3.98	4.59	3.78	-0.20	1/12/2021	5
25826	1995	Tuakau: East Compartment SB 10	1000	0.61	10	River flow	2021	1180	3.98	4.59	4.13	0.15	1/12/2021	3
25826	1996	Tuakau: East Compartment SB 11	1100	0.61	10	River flow	2021	1180	3.98	4.59	4.15	0.17	1/12/2021	3
25826	1997	Tuakau: East Compartment SB 12	1200	0.61	10	River flow	2021	1180	3.98	4.59	3.96	-0.02	1/12/2021	5
25826	1998	Tuakau: East Compartment SB 13	1300	0.61	10	River flow	2021	1180	3.98	4.59	4.03	0.05	1/12/2021	4
25826	1999	Tuakau: East Compartment SB 14	1400	0.61	10	River flow	2021	1180	3.98	4.59	4.31	0.33	1/12/2021	2
25826	2000	Tuakau: East Compartment SB 15	1500	0.61	10	River flow	2021	1180	3.99	4.60	4.29	0.30	1/12/2021	3

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
25826	2001	Tuakau: East Compartment SB 16	1600	0.61	10	River flow	2021	1180	3.99	4.60	4.14	0.15	1/12/2021	4
25826	2002	Tuakau: East Compartment SB 17	1700	0.61	10	River flow	2021	1180	3.99	4.60	4.30	0.31	1/12/2021	2
25826	2003	Tuakau: East Compartment SB 18	1800	0.61	10	River flow	2021	1180	4.00	4.61	4.24	0.25	1/12/2021	3
25826	2004	Tuakau: East Compartment SB 19	1900	0.61	10	River flow	2021	1180	4.00	4.61	4.32	0.33	1/12/2021	2
25826	2005	Tuakau: East Compartment SB 20	2000	0.61	10	River flow	2021	1180	4.00	4.61	4.25	0.26	1/12/2021	3
25826	2006	Tuakau: East Compartment SB 21	2100	0.61	10	River flow	2021	1180	4.00	4.61	4.32	0.32	1/12/2021	2
25826	2007	Tuakau: East Compartment SB 22	2200	0.61	10	River flow	2021	1180	4.00	4.61	4.12	0.12	1/12/2021	4
25826	2008	Tuakau: East Compartment SB 23	2300	0.61	10	River flow	2021	1180	4.00	4.61	4.29	0.29	1/12/2021	3
25826	2009	Tuakau: East Compartment SB 24	2400	0.61	10	River flow	2021	1180	4.00	4.61	4.21	0.21	1/12/2021	3
25826	2010	Tuakau: East Compartment SB 25	2500	0.61	10	River flow	2021	1180	4.00	4.61	4.11	0.11	1/12/2021	4
25826	2011	Tuakau: East Compartment SB 26	2600	0.61	10	River flow	2021	1180	4.00	4.61	4.37	0.37	1/12/2021	2
25826	18795	Tuakau: East Compartment SB 27	2700	0.61	10	River flow	2021	1180	4.00	4.61	4.36	0.36	1/12/2021	2
25826	18796	Tuakau: East Compartment SB 28	2800	0.61	10	River flow	2021	1180	4.00	4.61	4.44	0.44	1/12/2021	2
25826	18797	Tuakau: East Compartment SB 29	2853	0.61	10	River flow	2021	1180	4.00	4.61	5.02	1.02	1/12/2021	1
27320	59804	Tuakau: West Compartment SB 00	0	0.61	10	River flow	2021	40	3.96	4.57	4.18	0.22	1/12/2021	3
27320	1942	Tuakau: West Compartment SB 01	100	0.61	10	River flow	2021	40	3.96	4.57	4.09	0.13	1/12/2021	4
27320	1943	Tuakau: West Compartment SB 02	200	0.61	10	River flow	2021	40	3.96	4.57	4.08	0.12	1/12/2021	4
27320	1944	Tuakau: West Compartment SB 03	300	0.61	10	River flow	2021	40	3.96	4.57	3.97	0.01	1/12/2021	4
27320	1945	Tuakau: West Compartment SB 04	400	0.61	10	River flow	2021	40	3.96	4.57	4.14	0.18	1/12/2021	3
27320	1946	Tuakau: West Compartment SB 05	500	0.61	10	River flow	2021	40	3.96	4.57	4.17	0.21	1/12/2021	3
27320	1947	Tuakau: West Compartment SB 06	600	0.61	10	River flow	2021	40	3.96	4.57	4.12	0.16	1/12/2021	3
27320	1948	Tuakau: West Compartment SB 07	700	0.61	10	River flow	2021	40	3.96	4.57	3.98	0.02	1/12/2021	4
27320	1949	Tuakau: West Compartment SB 08	800	0.61	10	River flow	2021	40	3.96	4.57	4.00	0.04	1/12/2021	4
27320	1950	Tuakau: West Compartment SB 09	900	0.61	10	River flow	2021	40	3.96	4.57	4.25	0.29	1/12/2021	3
27320	1951	Tuakau: West Compartment SB 10	1000	0.61	10	River flow	2021	40	3.96	4.57	4.24	0.28	1/12/2021	3

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27320	1952	Tuakau: West Compartment SB 11	1100	0.61	10	River flow	2021	40	3.96	4.57	4.48	0.52	1/12/2021	2
27320	1953	Tuakau: West Compartment SB 12	1200	0.61	10	River flow	2021	40	3.96	4.57	4.39	0.43	1/12/2021	2
27320	1954	Tuakau: West Compartment SB 13	1300	0.61	10	River flow	2021	40	3.96	4.57	4.39	0.43	1/12/2021	2
27320	1955	Tuakau: West Compartment SB 14	1400	0.61	10	River flow	2021	40	3.96	4.57	4.49	0.53	1/12/2021	2
27320	1956	Tuakau: West Compartment SB 15	1500	0.61	10	River flow	2021	40	3.96	4.57	4.43	0.47	1/12/2021	2
27320	1957	Tuakau: West Compartment SB 16	1600	0.61	10	River flow	2021	40	3.96	4.57	4.56	0.60	1/12/2021	2
27320	1958	Tuakau: West Compartment SB 17	1700	0.61	10	River flow	2021	40	3.96	4.57	4.63	0.67	1/12/2021	1
27320	1959	Tuakau: West Compartment SB 18	1800	0.61	10	River flow	2021	40	3.96	4.57	4.52	0.56	1/12/2021	2
27320	1960	Tuakau: West Compartment SB 19	1900	0.61	10	River flow	2021	40	3.96	4.57	4.45	0.49	1/12/2021	2
27320	1961	Tuakau: West Compartment SB 20	2000	0.61	10	River flow	2021	40	3.96	4.57	4.20	0.24	1/12/2021	3
27320	1962	Tuakau: West Compartment SB 21	2100	0.61	10	River flow	2021	40	3.96	4.57	3.94	-0.02	1/12/2021	5
27320	1963	Tuakau: West Compartment SB 22	2200	0.61	10	River flow	2021	40	3.96	4.57	4.10	0.14	1/12/2021	4
27320	1964	Tuakau: West Compartment SB 23	2300	0.61	10	River flow	2021	40	3.96	4.57	4.15	0.19	1/12/2021	3
27320	1965	Tuakau: West Compartment SB 24	2400	0.61	10	River flow	2021	40	3.96	4.57	4.04	0.08	1/12/2021	4
27320	1966	Tuakau: West Compartment SB 25	2500	0.61	10	River flow	2021	40	3.96	4.57	3.95	-0.01	1/12/2021	5
27320	1967	Tuakau: West Compartment SB 26	2600	0.61	10	River flow	2021	40	3.96	4.57	3.97	0.01	1/12/2021	4
27320	1968	Tuakau: West Compartment SB 27	2700	0.61	10	River flow	2021	40	3.96	4.57	3.94	-0.02	1/12/2021	5
27320	1969	Tuakau: West Compartment SB 28	2800	0.61	10	River flow	2021	1180	3.98	4.59	3.92	-0.06	1/12/2021	5
27320	1970	Tuakau: West Compartment SB 29	2900	0.61	10	River flow	2021	1180	3.98	4.59	3.96	-0.02	1/12/2021	5
27320	1971	Tuakau: West Compartment SB 30	3000	0.61	10	River flow	2021	1180	3.98	4.59	3.96	-0.02	1/12/2021	5
27320	1972	Tuakau: West Compartment SB 31	3100	0.61	10	River flow	2021	1180	3.98	4.59	3.79	-0.19	1/12/2021	5
27320	1973	Tuakau: West Compartment SB 32	3200	0.61	10	River flow	2021	1180	3.98	4.59	4.00	0.02	1/12/2021	4
27320	1974	Tuakau: West Compartment SB 33	3300	0.61	10	River flow	2021	1180	3.98	4.59	4.10	0.12	1/12/2021	4
27320	1975	Tuakau: West Compartment SB 34	3400	0.61	10	River flow	2021	1180	3.98	4.59	4.04	0.06	1/12/2021	4
27320	1976	Tuakau: West Compartment SB 35	3500	0.61	10	River flow	2021	1180	3.98	4.59	4.06	0.08	1/12/2021	4

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27320	1977	Tuakau: West Compartment SB 36	3600	0.61	10	River flow	2021	1180	3.98	4.59	4.05	0.07	1/12/2021	4
27320	1978	Tuakau: West Compartment SB 37	3700	0.61	10	River flow	2021	1180	3.97	4.58	4.21	0.24	1/12/2021	3
27320	1979	Tuakau: West Compartment SB 38	3800	0.61	10	River flow	2021	1180	3.97	4.58	4.62	0.65	1/12/2021	1
27320	1980	Tuakau: West Compartment SB 39	3900	0.61	10	River flow	2021	1180	3.97	4.58	4.62	0.65	1/12/2021	1
27320	1981	Tuakau: West Compartment SB 40	4000	0.61	10	River flow	2021	1180	3.96	4.57	4.19	0.23	1/12/2021	3
27320	1982	Tuakau: West Compartment SB 41	4100	0.61	10	River flow	2021	1180	3.96	4.57	4.09	0.13	1/12/2021	4
27320	1983	Tuakau: West Compartment SB 42	4200	0.61	10	River flow	2021	1180	3.96	4.57	4.22	0.26	1/12/2021	3
27320	1984	Tuakau: West Compartment SB 43	4300	0.61	10	River flow	2021	1180	3.96	4.57	4.43	0.47	1/12/2021	2
27320	1985	Tuakau: West Compartment SB 44	4336	0.61	10	River flow	2021	1180	3.96	4.57	4.18	0.22	1/12/2021	3
27330	59806	Whiskey Flats Eastern Comp SB 00	0	0.30	100	Tidal surge	2021	1553	2.52	2.82	4.92	2.40	NULL	1
27330	1749	Whiskey Flats Eastern Comp SB 01	100	0.30	100	Tidal surge	2021	1553	2.52	2.82	5.37	2.85	1/04/1987	1
27330	1750	Whiskey Flats Eastern Comp SB 02	200	0.30	100	Tidal surge	2021	1553	2.52	2.82	4.84	2.32	10/12/2000	1
27330	1751	Whiskey Flats Eastern Comp SB 03	300	0.30	100	Tidal surge	2021	1553	2.53	2.83	4.27	1.74	10/12/2000	1
27330	1752	Whiskey Flats Eastern Comp SB 04	400	0.30	100	Tidal surge	2021	1553	2.53	2.83	3.64	1.11	10/12/2000	1
27330	1753	Whiskey Flats Eastern Comp SB 05	500	0.30	100	Tidal surge	2021	1552	2.54	2.84	3.00	0.46	10/12/2000	1
27330	1754	Whiskey Flats Eastern Comp SB 06	600	0.30	100	Tidal surge	2021	1552	2.55	2.85	2.57	0.02	10/12/2000	4
27330	1755	Whiskey Flats Eastern Comp SB 07	700	0.30	100	Tidal surge	2021	1552	2.55	2.85	2.47	-0.08	10/12/2000	5
27330	1756	Whiskey Flats Eastern Comp SB 08	800	0.30	100	Tidal surge	2021	1552	2.56	2.86	2.53	-0.03	10/12/2000	5
27330	1757	Whiskey Flats Eastern Comp SB 09	900	0.30	100	Tidal surge	2021	1552	2.55	2.85	2.72	0.17	10/12/2000	2
27330	1758	Whiskey Flats Eastern Comp SB 10	1000	0.30	100	Tidal surge	2021	1552	2.55	2.85	2.93	0.38	10/12/2000	1
27330	1759	Whiskey Flats Eastern Comp SB 11	1100	0.30	100	Tidal surge	2021	1552	2.55	2.85	3.19	0.64	10/12/2000	1
27330	1760	Whiskey Flats Eastern Comp SB 12	1105.1	0.30	100	Tidal surge	2021	1552	2.55	2.85	3.49	0.94	10/12/2000	1
28033	59705	Whiskey Flats Western Comp SB 00	0	0.30	100	Tidal surge	2021	1554	2.50	2.80	3.54	1.05	NULL	1
28033	1737	Whiskey Flats Western Comp SB 01	100	0.30	100	Tidal surge	2021	1554	2.50	2.80	3.58	1.09	10/12/2000	1
28033	1738	Whiskey Flats Western Comp SB 02	200	0.30	100	Tidal surge	2021	1554	2.50	2.80	3.34	0.85	10/12/2000	1

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28033	1739	Whiskey Flats Western Comp SB 03	300	0.30	100	Tidal surge	2021	1554	2.50	2.80	3.89	1.40	10/12/2000	1
28033	1740	Whiskey Flats Western Comp SB 04	400	0.30	100	Tidal surge	2021	1554	2.50	2.80	2.46	-0.04	10/12/2000	5
28033	1741	Whiskey Flats Western Comp SB 05	500	0.30	100	Tidal surge	2021	1553	2.51	2.81	2.47	-0.04	10/12/2000	5
28033	1742	Whiskey Flats Western Comp SB 06	600	0.30	100	Tidal surge	2021	1553	2.52	2.82	2.53	0.01	10/12/2000	4
28033	1743	Whiskey Flats Western Comp SB 07	700	0.30	100	Tidal surge	2021	1553	2.53	2.83	2.50	-0.03	10/12/2000	5
28033	1744	Whiskey Flats Western Comp SB 08	800	0.30	100	Tidal surge	2021	1553	2.52	2.82	3.05	0.53	10/12/2000	1
28033	1745	Whiskey Flats Western Comp SB 09	900	0.30	100	Tidal surge	2021	1553	2.52	2.82	3.77	1.25	10/12/2000	1
28033	1746	Whiskey Flats Western Comp SB 10	1000	0.30	100	Tidal surge	2021	1553	2.52	2.82	4.44	1.92	10/12/2000	1
28033	1747	Whiskey Flats Western Comp SB 11	1036.3	0.30	100	Tidal surge	2021	1553	2.52	2.82	5.14	2.63	1/04/1987	1
22897	59598	Wool Scourers to Fosters Landing SB 00	0	0.30	100	River flow	2021	1730	9.68	9.98	10.00	0.32	15/06/2019	1
22897	2922	Wool Scourers to Fosters Landing SB 01	100	0.30	100	River flow	2021	1730	9.69	9.99	10.12	0.43	15/06/2019	1
22897	2923	Wool Scourers to Fosters Landing SB 02	200	0.30	100	River flow	2021	1730	9.70	10.00	10.11	0.41	15/06/2019	1
22897	2924	Wool Scourers to Fosters Landing SB 03	300	0.30	100	River flow	2021	1730	9.71	10.01	10.11	0.40	15/06/2019	1
22897	2925	Wool Scourers to Fosters Landing SB 04	400	0.30	100	River flow	2021	1730	9.72	10.02	10.11	0.39	15/06/2019	1
22897	2926	Wool Scourers to Fosters Landing SB 05	500	0.30	100	River flow	2021	1730	9.75	10.05	10.21	0.47	15/06/2019	1
22897	2927	Wool Scourers to Fosters Landing SB 06	600	0.30	100	River flow	2021	1730	9.76	10.06	9.83	0.07	15/06/2019	4
22897	2928	Wool Scourers to Fosters Landing SB 07	700	0.30	100	River flow	2021	1730	9.78	10.08	9.75	-0.03	15/06/2019	5
22897	2929	Wool Scourers to Fosters Landing SB 08	800	0.30	100	River flow	2021	1730	9.79	10.09	10.25	0.46	1/02/2009	1
22897	2930	Wool Scourers to Fosters Landing SB 09	900	0.30	100	River flow	2021	1730	9.80	10.10	10.22	0.43	1/02/2009	1
22897	2931	Wool Scourers to Fosters Landing SB 10	1000	0.30	100	River flow	2021	1730	9.80	10.10	10.15	0.35	1/02/2009	1
22897	2932	Wool Scourers to Fosters Landing SB 11	1100	0.30	100	River flow	2021	1730	9.81	10.11	10.26	0.45	1/02/2009	1
22897	2933	Wool Scourers to Fosters Landing SB 12	1200	0.30	100	River flow	2021	1730	9.83	10.13	10.29	0.46	1/02/2009	1
22897	2934	Wool Scourers to Fosters Landing SB 13	1300	0.30	100	River flow	2021	1730	9.84	10.14	10.21	0.37	1/02/2009	1
22897	2935	Wool Scourers to Fosters Landing SB 14	1400	0.30	100	River flow	2021	1730	9.86	10.16	10.34	0.48	1/02/2009	1
22897	2936	Wool Scourers to Fosters Landing SB 15	1500	0.30	100	River flow	2021	1730	9.87	10.17	10.30	0.43	1/02/2009	1

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22897	2937	Wool Scourers to Fosters Landing SB 16	1600	0.30	100	River flow	2021	1730	9.89	10.19	10.25	0.36	1/02/2009	1
22897	2938	Wool Scourers to Fosters Landing SB 17	1700	0.30	100	River flow	2021	1730	9.90	10.20	10.17	0.27	15/11/2017	2
22897	2939	Wool Scourers to Fosters Landing SB 18	1800	0.30	100	River flow	2021	1730	9.92	10.22	10.29	0.37	15/11/2017	1
22897	2940	Wool Scourers to Fosters Landing SB 19	1900	0.30	100	River flow	2021	1730	9.93	10.23	10.41	0.48	15/11/2017	1
22897	2941	Wool Scourers to Fosters Landing SB 20	2000	0.30	100	River flow	2021	1730	9.94	10.24	10.41	0.47	15/11/2017	1
22897	2942	Wool Scourers to Fosters Landing SB 21	2100	0.30	100	River flow	2021	1730	9.96	10.26	10.43	0.47	15/11/2017	1
22897	2943	Wool Scourers to Fosters Landing SB 22	2200	0.30	100	River flow	2021	1730	9.98	10.28	10.43	0.45	15/11/2017	1
22897	2944	Wool Scourers to Fosters Landing SB 23	2300	0.30	100	River flow	2021	1730	10.00	10.30	10.50	0.51	15/11/2017	1
22897	2945	Wool Scourers to Fosters Landing SB 24	2400	0.30	100	River flow	2021	1730	10.02	10.32	10.39	0.37	15/11/2017	1
22897	2946	Wool Scourers to Fosters Landing SB 25	2500	0.30	100	River flow	2021	1730	10.04	10.34	10.42	0.39	15/11/2017	1
22897	2947	Wool Scourers to Fosters Landing SB 26	2600	0.30	100	River flow	2021	1730	10.06	10.36	10.43	0.37	15/11/2017	1
22897	2948	Wool Scourers to Fosters Landing SB 27	2700	0.30	100	River flow	2021	1730	10.08	10.38	10.62	0.54	15/11/2017	1
22897	2949	Wool Scourers to Fosters Landing SB 28	2800	0.30	100	River flow	2021	1730	10.10	10.40	10.48	0.38	15/11/2017	1
22897	2950	Wool Scourers to Fosters Landing SB 29	2900	0.30	100	River flow	2021	1730	10.11	10.41	10.55	0.44	15/11/2017	1
22897	2951	Wool Scourers to Fosters Landing SB 30	3000	0.30	100	River flow	2021	1730	10.13	10.43	10.61	0.48	15/11/2017	1
22897	2952	Wool Scourers to Fosters Landing SB 31	3100	0.30	100	River flow	2021	1730	10.15	10.45	10.76	0.61	15/11/2017	1
22897	2953	Wool Scourers to Fosters Landing SB 32	3200	0.30	100	River flow	2021	1730	10.17	10.47	10.64	0.48	15/11/2017	1
22897	2954	Wool Scourers to Fosters Landing SB 33	3300	0.30	100	River flow	2021	1730	10.18	10.48	10.65	0.47	15/11/2017	1
22897	2955	Wool Scourers to Fosters Landing SB 34	3400	0.30	100	River flow	2021	1730	10.20	10.50	10.69	0.49	1/02/2009	1
22897	2956	Wool Scourers to Fosters Landing SB 35	3500	0.30	100	River flow	2021	1730	10.22	10.52	10.85	0.63	1/02/2009	1
22897	2957	Wool Scourers to Fosters Landing SB 36	3600	0.30	100	River flow	2021	1730	10.24	10.54	10.70	0.46	1/02/2009	1
22897	2958	Wool Scourers to Fosters Landing SB 37	3700	0.30	100	River flow	2021	1730	10.27	10.57	10.83	0.56	1/02/2009	1
22897	2959	Wool Scourers to Fosters Landing SB 38	3800	0.30	100	River flow	2021	1730	10.30	10.60	10.85	0.55	1/02/2009	1
22897	2960	Wool Scourers to Fosters Landing SB 39	3900	0.30	100	River flow	2021	1730	10.33	10.63	10.85	0.52	1/02/2009	1
22897	2961	Wool Scourers to Fosters Landing SB 40	4000	0.30	100	River flow	2021	1730	10.36	10.66	10.84	0.48	1/02/2009	1

Permanent ID	Asset ID	Asset Description	Asset Chainage	Design Freeboard	Design Event Magnitude	Flooding Source	Design Year	Design Discharge	Design Flood Level	Design Crest Level	Actual Crest Level	Actual Freeboard	Last Survey Date	Performance Grade
22897	2962	Wool Scourers to Fosters Landing SB 41	4100	0.30	100	River flow	2021	1730	10.39	10.69	10.85	0.46	1/02/2009	1
22897	2963	Wool Scourers to Fosters Landing SB 42	4200	0.30	100	River flow	2021	1730	10.42	10.72	10.97	0.55	1/02/2009	1
22897	2964	Wool Scourers to Fosters Landing SB 43	4300	0.30	100	River flow	2021	1730	10.44	10.74	10.97	0.53	1/02/2009	1
22897	2965	Wool Scourers to Fosters Landing SB 44	4400	0.30	100	River flow	2021	1730	10.45	10.75	10.94	0.49	1/02/2009	1
22897	2966	Wool Scourers to Fosters Landing SB 45	4500	0.30	100	River flow	2021	1730	10.46	10.76	10.93	0.47	1/02/2009	1
22897	2967	Wool Scourers to Fosters Landing SB 46	4600	0.30	100	River flow	2021	1730	10.47	10.77	10.89	0.42	1/02/2009	1
22897	2968	Wool Scourers to Fosters Landing SB 47	4700	0.30	100	River flow	2021	1730	10.48	10.78	11.02	0.54	1/02/2009	1
22897	2969	Wool Scourers to Fosters Landing SB 48	4800	0.30	100	River flow	2021	1435	10.49	10.79	11.10	0.62	1/02/2009	1
22897	2970	Wool Scourers to Fosters Landing SB 49	4900	0.30	100	River flow	2021	1435	10.49	10.79	11.18	0.69	1/02/2009	1
22897	2971	Wool Scourers to Fosters Landing SB 50	5000	0.30	100	River flow	2021	1435	10.50	10.80	11.13	0.63	1/02/2009	1
22897	2972	Wool Scourers to Fosters Landing SB 51	5100	0.30	100	River flow	2021	1435	10.51	10.81	11.14	0.63	1/02/2009	1