

2018-2028 STORMWATER AND FLOOD PROTECTION ASSET MANAGEMENT PLAN
He Rautaki Whakahaere Rawa mō Te Wai Āwhā me te Taupā Waipuke

PUMP STATION

NGĀ TAUPUNI MAPU

VOLUME ONE | PUKAPUKA TUATAHI



Mountain to Sea
Te Kaunihera-ā-Rohe o Ngāmotu
NEW PLYMOUTH DISTRICT COUNCIL
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DOCUMENT CONTROL

Document Name	2018-2028 Stormwater and Flood Protection Asset Management Plan Volume 1 - Pump Station
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1. Introduction	5	2.6 Renewal/Replacement	8
2. Lifecycle Management Plan	6	2.7 Acquisition and Augmentation Plan	9
2.1 Asset Description	6	2.8 Disposal Plan	9
2.2 Asset Condition	6	2.9 Annual Work Plan	9
2.3 Asset Remaining Lives	7	3. Risk Management Plan	10
2.4 Asset Valuation	7	3.1 Critical Assets	10
2.5 Operations and Maintenance	7	3.2 Risk Assessment	10
2.5.1 Operations	7	3.3 Infrastructure Resilience Approach	10
2.5.2 Maintenance	7	4. Financial Summary	11
2.5.3 Critical Spares	8	5. Improvement and Monitoring Plan	12
2.5.4 Opex Forecast	8		

LIST OF TABLES & FIGURES

List of Tables

Table 1 Asset management document structure	5
Table 2 Component remaining lives	7
Table 3 Asset valuation	7
Table 4 Renewals expenditure forecast	8
Table 5 Capex forecast summary	11
Table 6 Improvements summary	12

List of Figures

Figure 1 Waitara war memorial pump station layout	6
Figure 2 Pump station accounting expiries post 10Y	9



This volume provides details of the asset lifecycle management for the **Pump Station** asset category of the Stormwater and Flood Protection AMP. The framework and key elements of the overall asset management plan are outlined in Table 1.

Table 1 Asset management document structure

No.	Document Name	Key Document Contents
1	Long Term Plan (LTP)	Infrastructure Strategy <ul style="list-style-type: none"> • Strategic Framework • Guiding Themes • High Level Information for Each Asset Class Council Services <ul style="list-style-type: none"> • High Level Information • Levels of Service • Financial Plan
2	Asset Management Strategy	General Asset Management Principles & Overview
3	Asset Class General Volumes	General Information and Glossary about each asset class <ul style="list-style-type: none"> • Executive Summary • Introduction • Levels of Service • Future Demand • Risk Management Plan • Financial Summary • Plan Improvement and Monitoring

4	Asset Category Lifecycle Management Volumes	Asset Life Cycle Management for each asset category within each asset class <ul style="list-style-type: none"> • Description • Condition • Remaining Lives • Valuation • Operations & Maintenance • Renewals • Acquisition and Augmentation • Disposals • Annual Work Plan • Risk Management • Financial Summary • Improvement Plan
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Purpose

We currently own one stormwater pump station. This is the Waitara Memorial storm water pump station located in Waitara, built in 1975 and upgraded in 2002. This pump station provides an emergency contingency to pump floodwater from the adjacent central business area through the stop bank and into the Waitara River.

Levels of Service

All the levels of service included in Section 3 of the Stormwater and Flood Protection General AMP Volume apply to this volume.

Future Demand

Over the period of this AMP we will conduct further studies of potential future growth to ascertain system capacity limits and to produce a Stormwater Master Plan.

Any plans to provide additional capacity at the pump station or to build new pump stations for specific land developments will be developed as part of the planning process.

Note: All financial forecasts are shown in inflation adjusted dollar values.

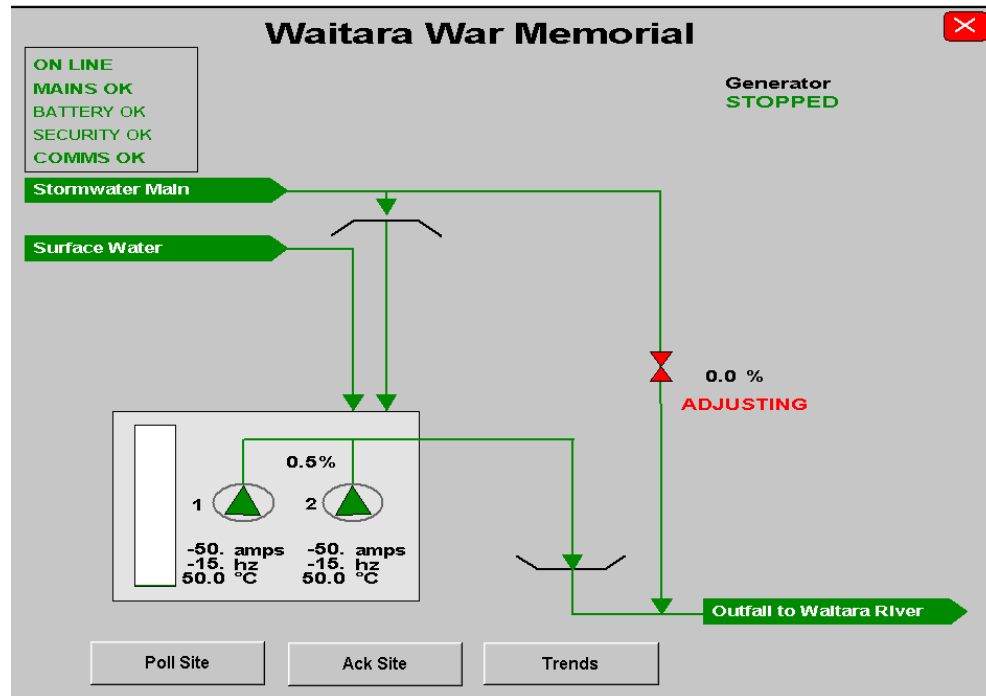
2. LIFECYCLE MANAGEMENT PLAN

2.1 Asset Description

The Waitara pump station was rebuilt in 2002. This pump station has two pumps and two pump VSDs with telemetry used to boost storm water flow and to meet levels of service. The pumps are powered by electrical motors driven via a connected gearbox. They are configured in either working/standby mode, high/low demand mode or twin duty at times of high demand. This provides some redundancy for outages due to failures or maintenance.

Pump station components include pumps, valves, piping, meters, cables, controls/SCADA and the associated buildings, civil and ground structures. The pump station buildings are included in the Property Asset Management Plan. The layout of the pump station is shown in the diagram in Figure 1.

Figure 1 Waitara war memorial pump station layout



The accuracy of the data presented in this AMP has been assessed and graded in accordance with Section 5 of the Asset Management Strategy.

Our well maintained and updated asset inventory means the data on the number, quantity and age of the assets presented in this AMP is classed as grade **B - Reliable**.

2.2 Asset Condition

Asset condition grades are given in accordance with Section 5 of the Asset Management Strategy.

No formal asset conditions for stormwater pump stations have been conducted and all asset conditions are recorded in the asset inventory as **6 - Unknown**. Therefore the data accuracy for stormwater asset condition is classed as grade **E - Unknown**. **This is a data integrity issue and is recorded as an action in Section 5 - Improvement and Monitoring Plan.**

2. LIFECYCLE MANAGEMENT PLAN

2.3 Asset Remaining Lives

Beca provided estimates of the expected lives data for the Waitara pump station components as part of the 2016 plant and equipment valuation and these were recorded in the T1 asset inventory. Therefore, the data accuracy for asset remaining lives is classed as grade B – Reliable.

The remaining lives for the components are shown in Table 2.

Table 2 Component remaining lives

Asset ID	Description	Year new	Age	Expected Lives	Remaining Lives
C-701-001	Waitara War Mem Swps Structure	1975	41	100	59
G-701-01	Generator	1975	41	80	39
MCC-701-01	Motor Control Centre	1975	41	50	9
VV-701-001	Penstock	1975	41	70	29
P-701-100	Pump 2	1975	41	60	19
P-701-200	Pump 1	1975	41	60	19
VSD-701-100	Pump 1 VSD	1975	41	60	19
VSD-701-200	Pimp 2 VSD	1975	41	60	19
MSUB-701-CABLE	Cable	1975	41	80	39
TEL-701-001	Telemetry	1975	41	60	19
PLC-701-001	PLC	1975	41	60	19
LT-701-001	Wetwell LT	1975	41	60	19
LT-701-002	River LT	1975	41	60	19

2.4 Asset Valuation

The value of pump station assets as at June 30 2016 is shown in Table 3.

Table 3 Asset valuation

Gross Current Replacement Cost (\$)	Annual Depreciation (\$)	Optimised Depreciated Replacement Cost (\$)
1,226,594	15,452	423,500

Beca provided a detailed valuation of each asset component as part of the general plant and equipment valuation during the 2016 statutory valuation. Therefore, in conjunction with a well maintained and updated asset inventory, the data is classed as **B – Reliable**.

2.5 Operations and Maintenance

2.5.1 Operations

A maintenance contractor is responsible for the operations and maintenance of this pump station and conducts general monthly inspections.

Electrical power costs only represent a small proportion of operational expenditure due to its occasional use.

2.5.2 Maintenance

We maintain the pump station on a regular basis, which includes evaluating pump performance and identifying any remedial work required.

Our Electrical & Systems team maintains the electrical equipment at the pump station. This includes annual checks and calibration of flow transmitters and pressure gauges.

2. LIFECYCLE MANAGEMENT PLAN

2.5.3 Critical Spares

We have not yet conducted an updated assessment of the critical spares required for the stormwater pump station. This is an asset integrity issue concerning multiple wastewater assets for which commentary is included in the Wastewater General Volume. We do intend to conduct an updated assessment in the near future. **This is recorded as an action in Section 5 – Improvement and Monitoring Plan.**

2.5.4 Opex Forecast

The general 10-year Opex forecast for stormwater assets is included in the Stormwater and Flood Protection General Volume. It includes the Opex forecast for the maintenance and operation of the pump station.

2.6 Renewal/Replacement

Our general approach to asset renewal is included in our Asset Management Strategy. Pump station components containing moving parts such as motors, gear boxes and pumps have finite lives in the region of 60 years, depending on usage. The remaining assets have longer life expectancies.

Based on estimates of remaining lives provided in Beca’s 2016 statutory valuation of pump station assets, an annual allowance has been made for the renewal of components as shown in Table 4.

Prior to confirming expenditure on renewal projects, we will undertake condition and criticality assessments and review the remaining life of the assets to ensure we achieve optimum value.

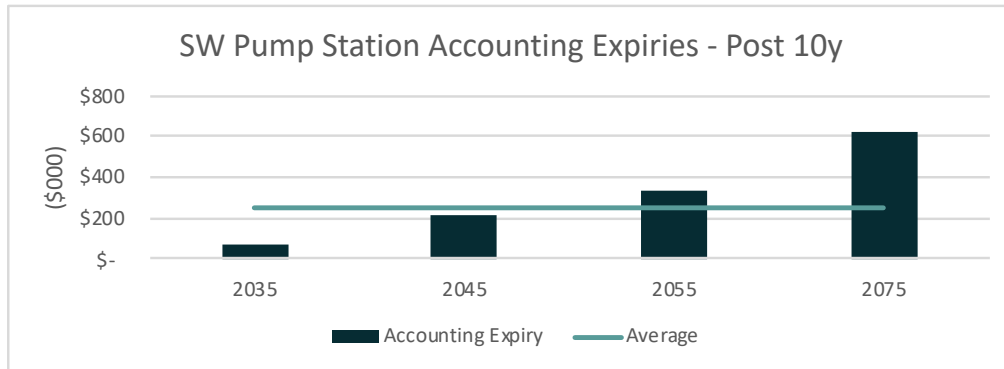
Table 4 Renewals expenditure forecast

Stormwater Pump Stations Renewal Forecast (\$000)											
Activity	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	LTP Total
ST2007 - Stormwater Planned P&E Renewals	10	10	11	11	11	11	12	12	12	12	112
Total	10	10	11	11	11	11	12	12	12	12	112

2. LIFECYCLE MANAGEMENT PLAN

The total expenditure required for the period of the AMP based on accounting expiries is approximately \$1.2m as shown in Figure 2. By 2075, the above ground structure and building components will need replacing.

Figure 2 Pump station accounting expiries post 10Y



2.7 Acquisition and Augmentation Plan

Acquisition

We do not plan to acquire any new stormwater pump stations over the next ten years.

Growth

No growth projects are planned over the period of the AMP.

Levels of Service

There are no level of service projects planned over the period of the AMP.

2.8 Disposal Plan

Disposal is the retirement or sale of assets when they become surplus or superseded by new or improved systems. Assets may become surplus to requirements for any of the following reasons:

- Under-utilisation
- Obsolescence
- Provision exceeds required level of service
- Replacement before end of predicted economic life
- Uneconomic to upgrade or operate
- Policy changes
- Service provided by other means (e.g. private sector involvement)
- Potential risk of ownership (financial, environmental, legal, social)

No asset disposals are planned over the 10 year AMP period.

2.9 Annual Work Plan

Detailed work plans included in Annual Plans will be based on the asset renewal forecasts included in section 2.6 and the augmentation projects identified in section 2.7.

3. RISK MANAGEMENT PLAN

3.1 Critical Assets

While the stormwater pump station is considered a critical asset for the Waitara area, we have not yet conducted formal criticality ratings for the pump station components and there is no criticality data recorded in EAM. **This is an asset data integrity issue and is recorded as an improvement action in Section 5 – Improvement and Monitoring Plan.**

Following asset criticality assessments, we will develop a focused management plan to ensure the integrity and resilience of critical assets. **This is recorded as an action in Section 5 – Improvement and Monitoring Plan.**

3.2 Risk Assessment

Details of our Risk Management Framework are included in section 6.2 of the Stormwater and Flood Protection General AMP volume and section 7 of the Asset Management Strategy.

3.3 Infrastructure Resilience Approach

To provide pump station resilience we conduct regular maintenance, and have spare parts and emergency response capability available.



4. FINANCIAL SUMMARY

The Capex forecast for pump stations is shown in the Table 5.

Table 5 Capex forecast summary

Stormwater Pump Stations Forecast Expenditure (\$000)											
Activity	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	LTP Total
Renewals	10	10	11	11	11	11	12	12	12	12	112
Service Level	-	-	-	-	-	-	-	-	-	-	-
Growth	-	-	-	-	-	-	-	-	-	-	-
Total	10	10	11	11	11	11	12	12	12	12	112

The Opex forecast for operations and maintenance is included in the overall Opex forecast for Stormwater and for Flood Protection and Control detailed in the LTP. It is also included in the Stormwater and Flood Protection General Volume.

5. IMPROVEMENT AND MONITORING PLAN

Our general Asset Management Maturity Improvement Plan is included in the Asset Management Strategy.

General improvements to Stormwater assets are included in the Stormwater and Flood Protection General Volume.

The specific areas of improvement identified for pump station assets are listed in Table 6.

Table 6 Improvements summary

	Improvement Area	Owner	Start Date	End Date
1	Assess asset condition and record results in EAM	Manager Three Waters	2018	2020
2	Conduct update of critical spares analysis and procure any required items.	Manager Three Waters	2018	2019
3	Produce focused management plan for those assets identified as critical	Manager Three Waters	2018	2019
4	Conduct criticality assessment and record results in EAM	Asset Operations Planning Lead	2018	2019



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