



# **Wastewater Overflow Continual Improvement Plan – The Journey So Far**

# Presentation Outline

- Issues
- Initial response
- The review
- The present
- The future

# Wastewater Network Challenges

- Wide geographical area
- Varying age and condition of network
- Growth pushing capacity
- Lack pump station storage to cover power failures and wet weather events
- SCADA communications/connectivity issues
- Manual Interventions

# Issues

- Council have had several wastewater overflows that have caused the Raglan Harbour to be closed in 2016.
- These overflows are damaging to both the environment and the Council's reputation
- Council mistrust of officers after repeat overflows



# Immediate Response

- Immediate Works
  - 18 SMS units for early warnings at PS
  - 18 generator plugs at PS
  - Back-up generator for Greenslade PS – in progress
  - Emergency support from Downer
  - Start a public education programme
- Review Report
  - Highlight causes and yield cost estimates



# Aim of Review

- What is required to stop wastewater overflows occurring?
- To provide guidance to Council guidance on the level of risk, investment and timeframe for this work.
- Accepted that stopping wastewater overflows completely is not possible, but they can be minimised

# Current Levels of Service

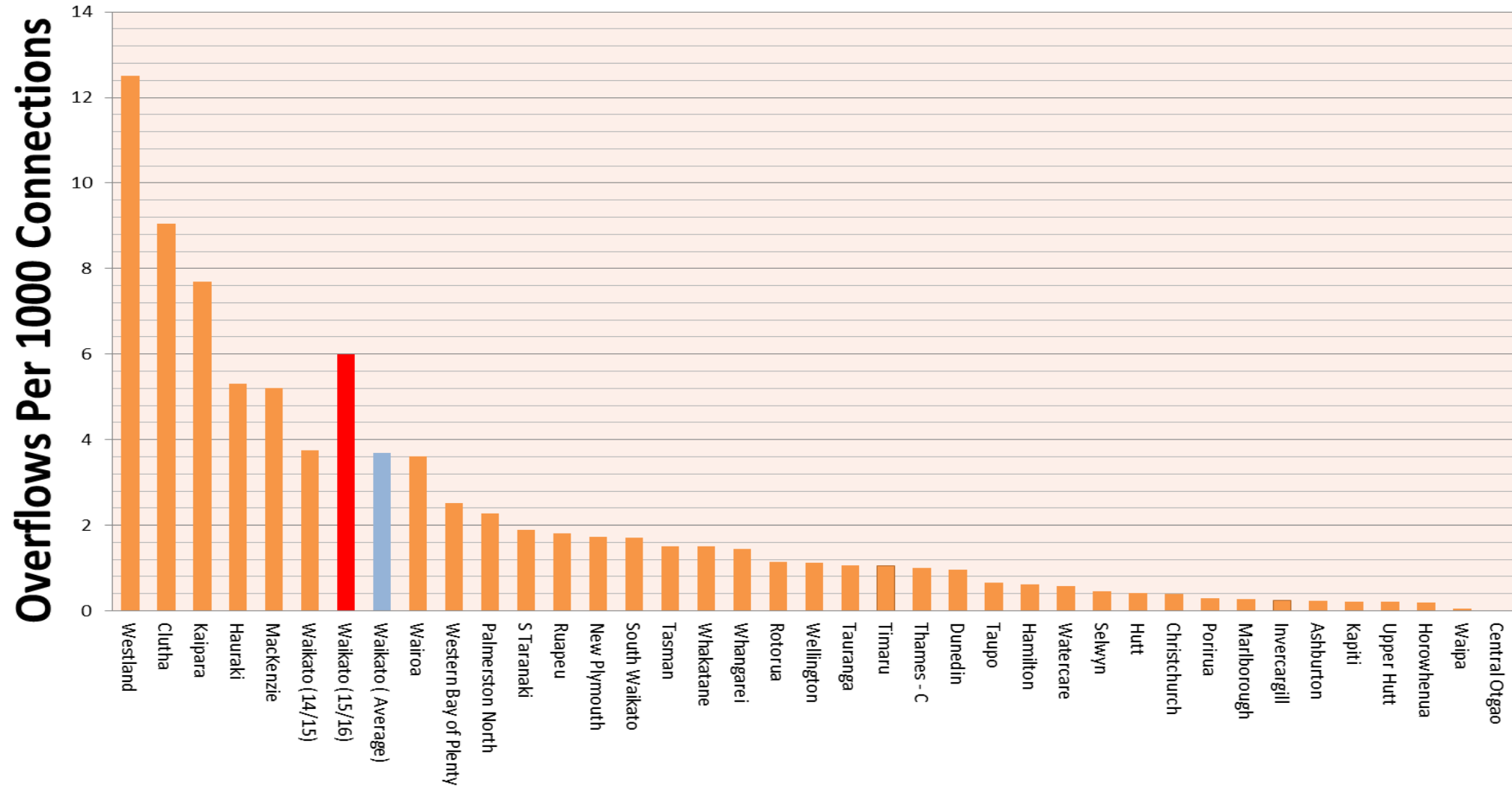
- Long Term Plan Levels of Service
  - *5 dry weather overflows per 1000 connections*
  - *This means up to 58 overflows from the network per year on days with less than 1mm of rainfall*
- Any change to the LTP LOS would require an amended LTP to be consulted on
- Overflows to receiving waters – prohibited activity under the regional plan

# Current performance

Financial Year	Number of Wastewater Overflows	Overflows per 1000 connections
15/16	59	6.2
14/15	44	4.8 (3.75)*
13/14	39	4.5
12/13	30	3.5
11/12	27	3.2



# How does Performance Stack Up?



Water Utility - Results from 14/15 National Performance Review

# National Performance Review

- Piloted in 07/08
- Forty one participants in 14/15
- Inconsistencies in collection of data and reporting
- WDC report ALL overflows that occur due to an issue within our network (including inside private property) – irrespective of size

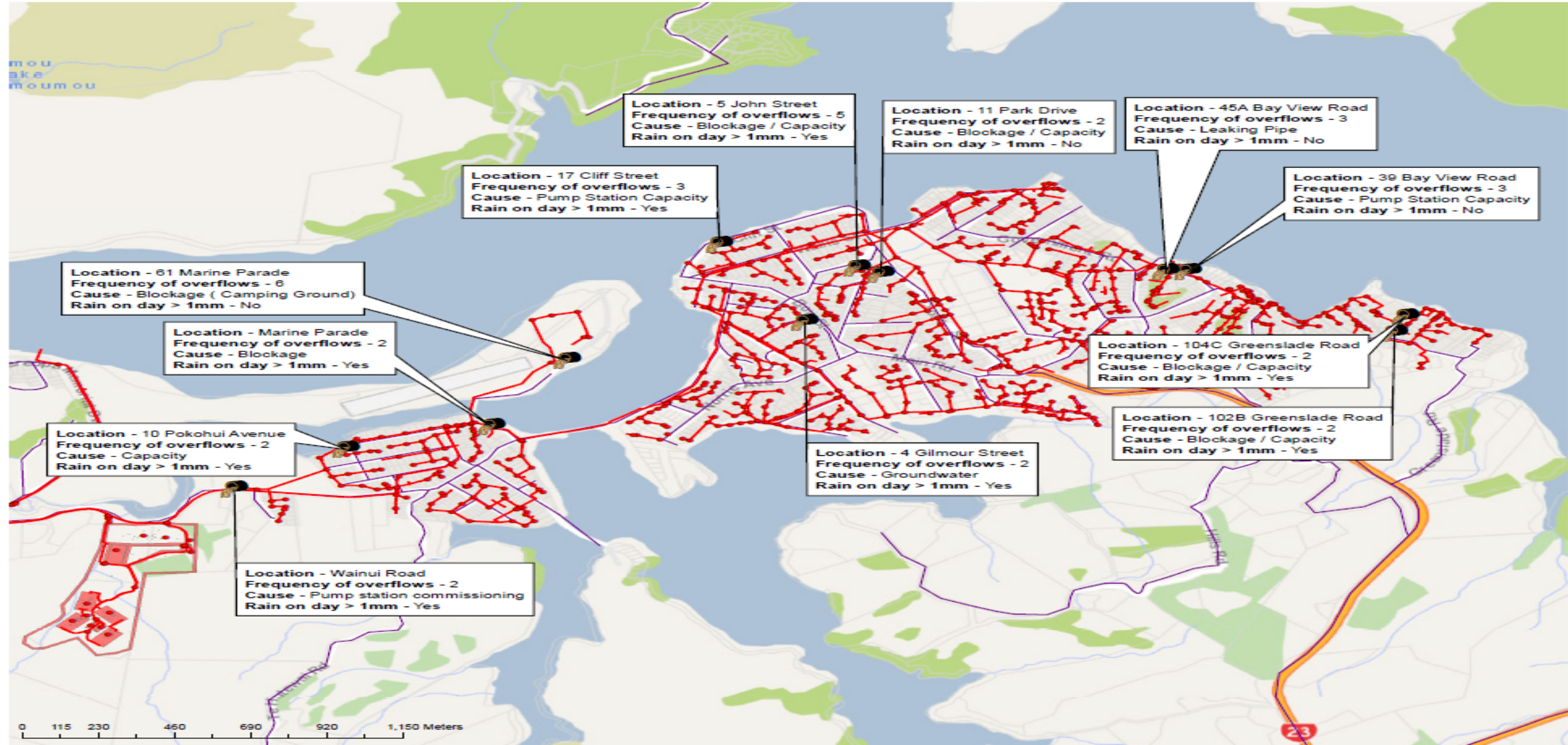
# What causes Wastewater Overflows ?

- Blockages – Network / PS – Wet and Dry
- Not enough capacity – Relative to Flow – Wet Weather
- Failure of key equipment or power – Wet and Dry

# Analysis of Recent Overflows in the District

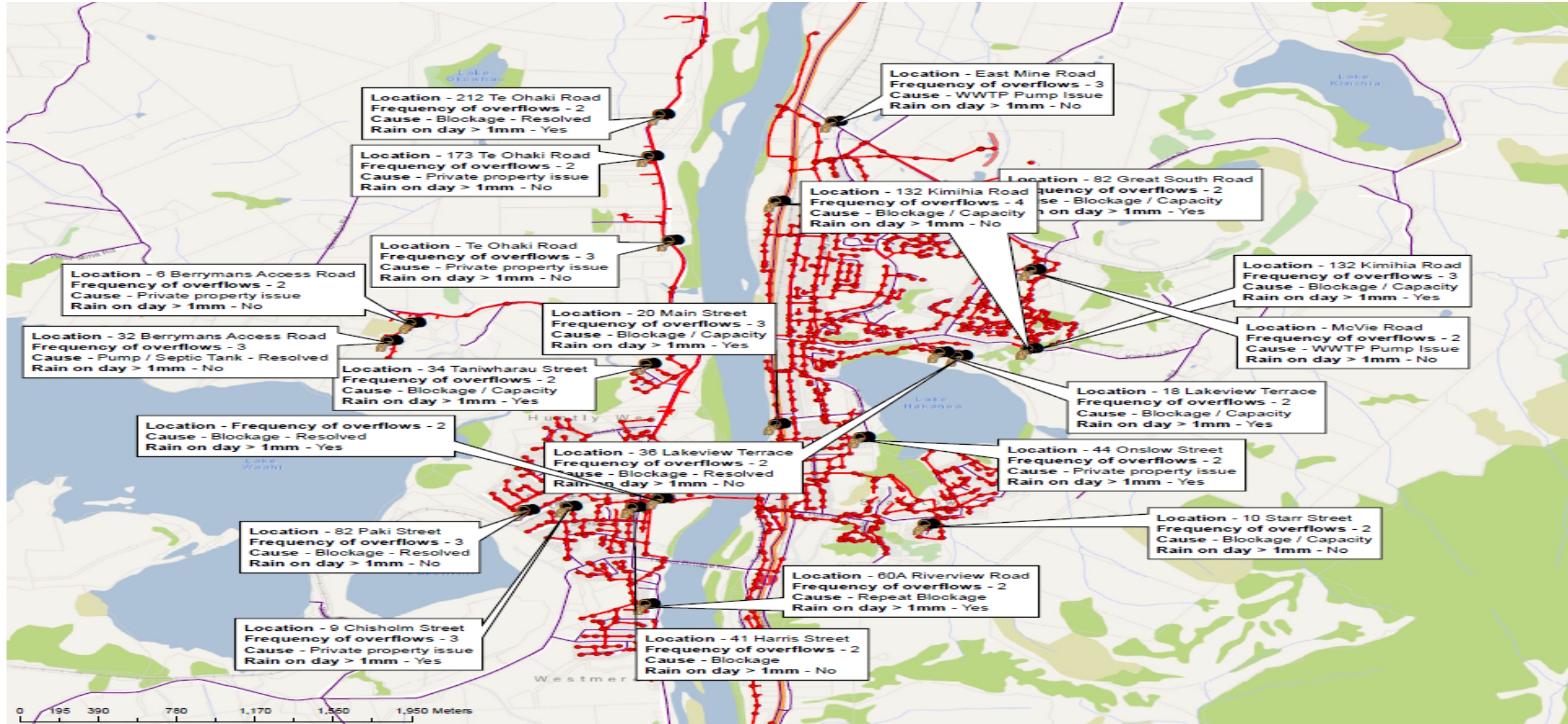
Issue	Number of Locations
Pumping Station Capacity issues	5
Private Property issues	6
Blockages caused by local issues which were resolved	21
Repeat blockages at the same locations, indicating that that part of the network was prone to blockages	5
A combination of blockage issues and capacity constraints. The primary cause was not conclusive in these cases.	14
Inappropriate use of caravan / trade waste dump sites.	3

# Raglan





# Huntly



# What effects do overflows have?

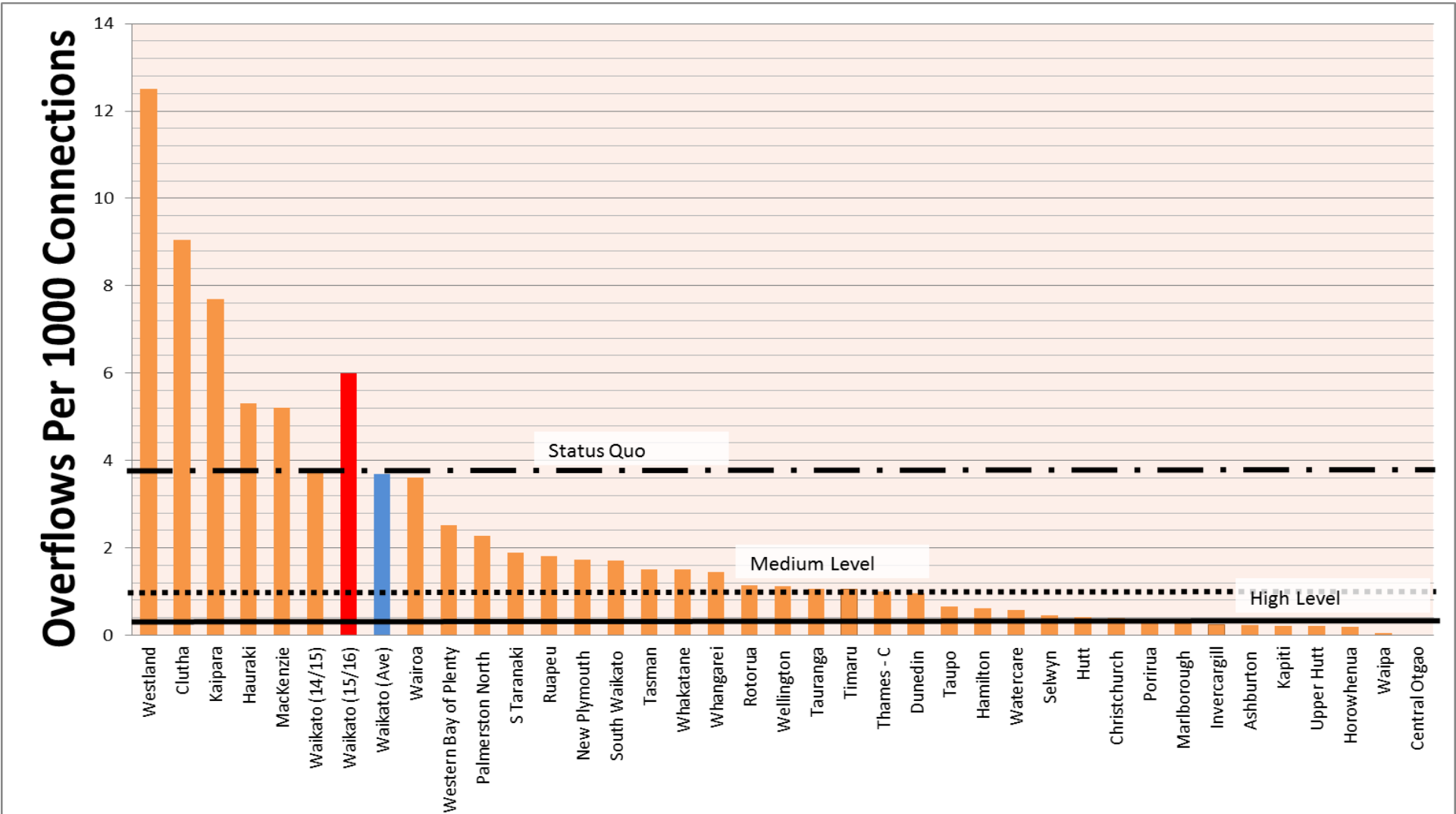
- Waterway pollution – Stream, Rivers, Harbours
- Potential Public Health Issues – if adjacent to people
- Loss of sanitary services to customers

# Intervention

Issue	Number of Locations	Intervention	Programme
Pumping Station Capacity issues	5	Increase pumping station capacity / storage	Pumping Station storage / Inflow / Infiltration Programme
Private Property issues	6	Education / Penalties.	Education programme
Blockages caused by local issues which were resolved	21	Reactive operations Education programme.	Reactive operations, education programme.
Repeat blockages at the same locations, indicating that that part of the network was prone to blockages	5	Proactive CCTV survey and Jetting – targeting renewals programme in these areas.	Proactive CCTV / Jetting Programme  Renewals Programme
A combination of blockage issues and capacity constraints. The primary cause was not conclusive in these cases.	14	Proactive CCTV survey and Jetting – targeting renewals programme in these areas.	Proactive CCTV / Jetting Programme Renewals Programme I / I Programme
Inappropriate use of caravan / trade waste dump sites.	3	Education / Penalties.	Education programme



# Target Level of Intervention



Water Utility - Results from 14/15 National Performance Review

# Summary

	Status Quo	Median Performance	High Performance
Intervention	Budget (10 year) \$M	Budget (10 year) \$M	Budget (10 year) \$M
Network Maintenance	1	4.4	43.4
Service Delivery	8.6	16.04	16.04
Renewals	9.8	15.07	20.34
Inflow and Infiltration Control	7	14	21
Pumping Station Storage	3.3	14.5	18.7
Power Failure	0.07	0.15	0.3
SCADA / Telemetry	1	8.8	13.2
Public Education Process	0.015	0.5	0.5
Addition Investigations / master plans	0	0.5	0.5
<b>Totals</b>	<b>30.8</b>	<b>74.0</b>	<b>134.0</b>

# Review Conclusions

- Early intervention works underway and showing benefits
- Causes and effects of wastewater overflows has allowed interventions to be determined
- For the medium level of intervention Council should budget \$74M over 10 years
- For the high level of intervention Council should budget \$134M over 10 years
- Further work to refine estimates
- Some more intervention work can be done in the interim.

# Review Recommendations

- Council consider level of intervention they wish to adopt
- Detailed investigations are commenced immediately to refine interevention methods and costs
- Continue with improvement works

# Council Decision

- Adopt medium level of intervention (1/1000)
- Detailed investigations are commenced immediately
- Continue with improvement works

# What we did Immediately?

Work Package	Description
1	Wastewater Improvement Plans
2a	Policy and Procedures Update
2b	Separation of Water and Wastewater operations
3	Standby Generation
4	SCADA Upgrade for Raglan
5	Public Education Process
6	Jetting & CCTV Inspections (43km)
7	Resource Consent Application

# Wastewater Improvement Plans

- Intent to refine November report
- To be informed by work in 2017
  - Network Cleaning & CCTV
  - Refinement of Interventions at Township Level
- Document all interventions current & future
- Refined recommendations

# Findings – Cleaning & CCTV

- 43km of network cleaned in Raglan, Ngaruawahia & Huntly & other townships
- Both light and heavy debris found

Town	Grade 5
	%
Huntly	51%
Raglan	9%
CD	11%
Tuakau	28%
Te Kauwhata	3%
Meremere	80%
WDC	25%



# Public Education Process



# Annual Plan Consultation

- Options provided to the community (Rate Increase)
  - Option 1 – Raglan Focussed, but separation, BAU elsewhere (15%)
  - Option 2 – Focus overflow reduction in sensitive areas (19%)
  - Option 3 – Sensitive and non sensitive area focus (22%)
- Option 2 Selected (1 & 3)

# Wastewater CIP Plan

Description	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028
Jetting / CCTV	ALL AEC 4 & 5 Plus 1/3 of AEC 1-3			Yearly Clean all AEC 4 & 5s & 1/3 of AEC 1-3								
Public Education Programme	Raglan	Rgn/Others	All	All	All	All	All	All	All	All	All	All
SCADA / Telemetry		Rgn/Hntly	Hntly/Nga/Frkln	Hntly/Nga/Rgn	NGA/Frkln/Rest	Office						
"Emergency" Renewals					Hntly	Tuakau	NGA/Rgn/MM					
PS/Capacity Upgrades			Rgn	Rgn	NGA	NGA	Hntly	Hntly	Minor	Minor	Minor	Minor
Service Delivery Improvements	Plan	Implement	Complete									
Vacuum Truck SLA												
Resource Consents		Plan	Meremere		Raglan	Hntly (NW)	NGA (NW)	Pok/Tua(NW)				TK
Major Review												
Minor Review												
Sensitive Enviroments (/1000)		3.5	2.6	1.8	0.9	0.9	0.9	0.8	0.7	0.6	0.6	0.5
Non Sensitive Environments (/1000)		3.5	2.9	2.3	1.8	1.8	1.7	1.6	1.6	1.6	1.5	1.5
Cost (\$M) - DRAFT			6.20	5.90	6.60	5.60	5.50	5.00	6.90	6.50	5.20	5.50

# Activities 17/18

- Cleaning and Condition Assessment (38km) – AEC 4/5
- SCADA Implementation (Procurement Plan Developed)
- Public Education Process (Communication Plan)
- Water and Wastewater Separation (Phase I Underway)
- Additional Generators (One purchased)
- Wastewater Plan Updates (Sept 17 and June 18)
- Overflow Resource Consent (Plan developed)

# Journey Summary & Lessons Learnt

- Regular Updates and Education of Community & Council rebuilds trust
- Wastewater overflows have a behavioural / random component
- Progress reviews and effectiveness of intervention essential
- Be sufficiently flexible to change tack if the circumstances warrant it
- Continual improvement means becoming proactive