



**Drainage Investigations
Team**
**‘Knowing Your Pipes’
Hutt Valley Project Update**
August 2023



Our water, our future.

Hutt City Council Update

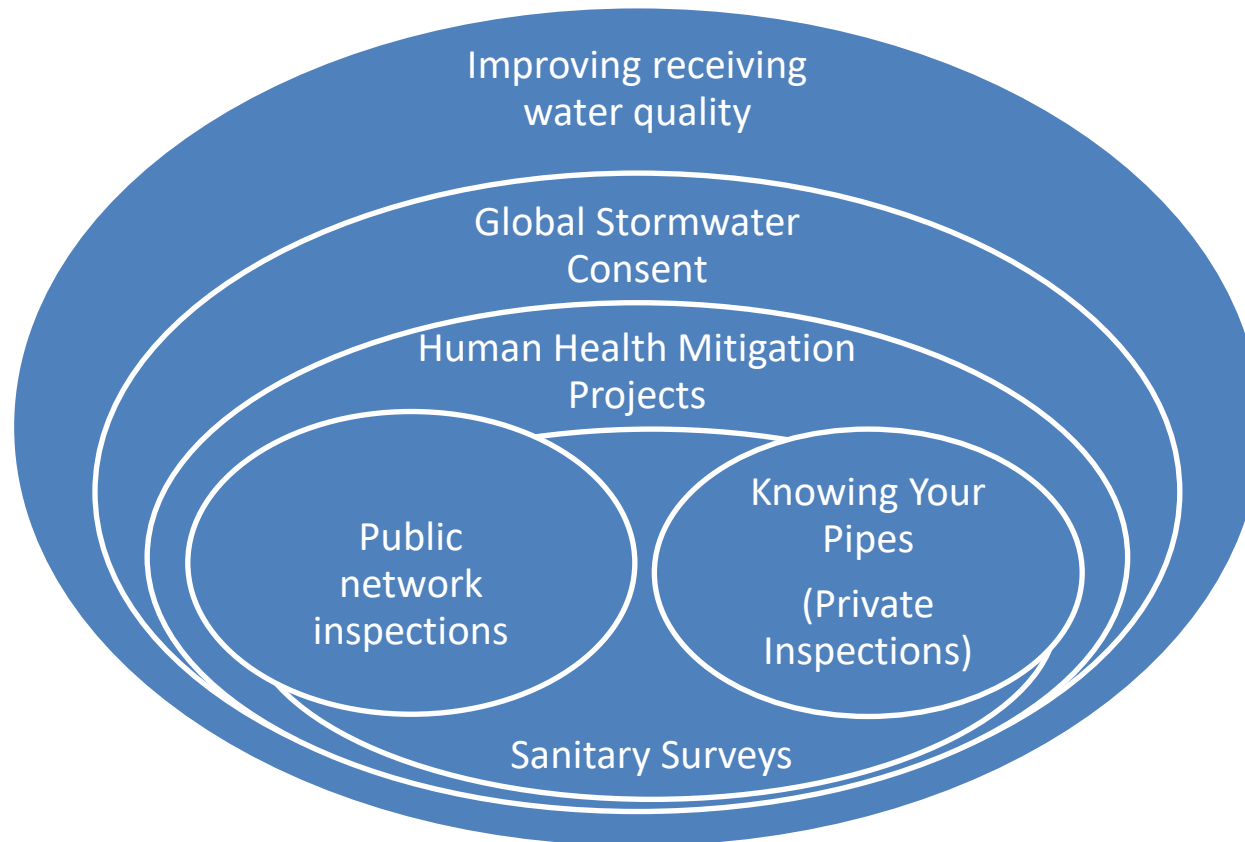
- Item 1 – Who are the Drainage Investigation Team and their Objectives
- Item 2 – Summary of faults found and nature of the faults
- Item 3 - What faults have been fixed so far
- Item 4 – Catchments we have worked in
- Item 5 – Water quality changes
- Item 6 – Next Steps

Meet the Drainage Investigations Team

Knowing Your Pipes Program



Who are the Drainage Investigation Team and their Objectives



Drainage Investigation Team Processes

What is the team going to do?

- Water quality grab sampling
- Visual inspections
- Smoke test / Infiltration and Inflow assessment
- Dye test
- Close Circuit Television 'CCTV'
- Inflow and Infiltration monitoring and investigations
- Repairs to public faults
- Issue letters informing property owners if there are private faults
- Follow up during the repair process on private faults



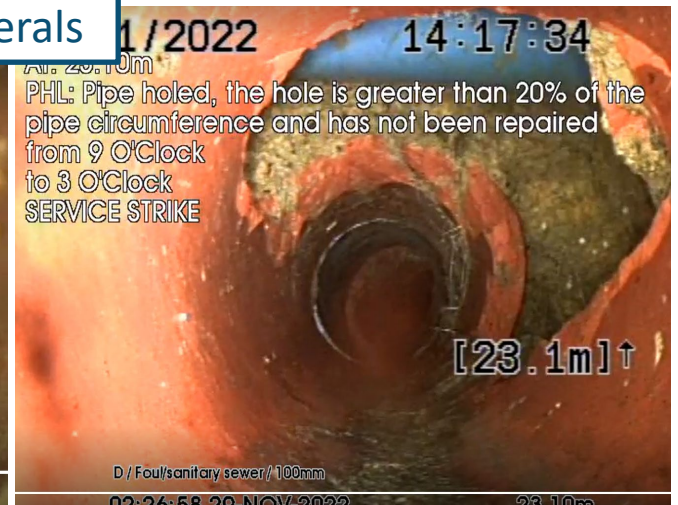
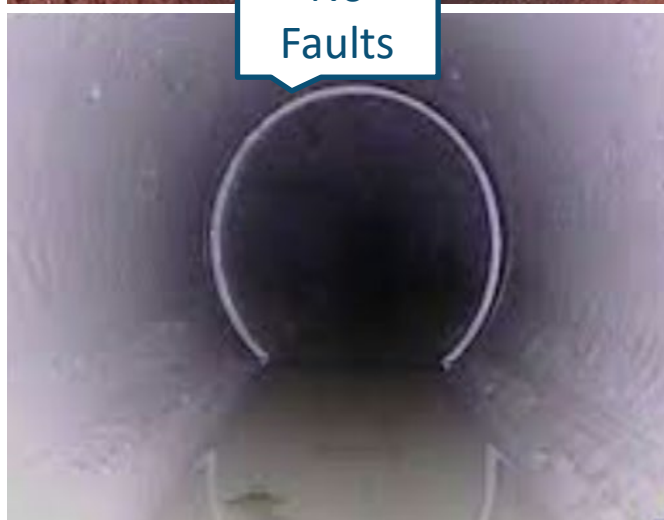
Common Private Faults Found



No
Faults



Faulted
Laterals



Photos of works being completed by Contractors



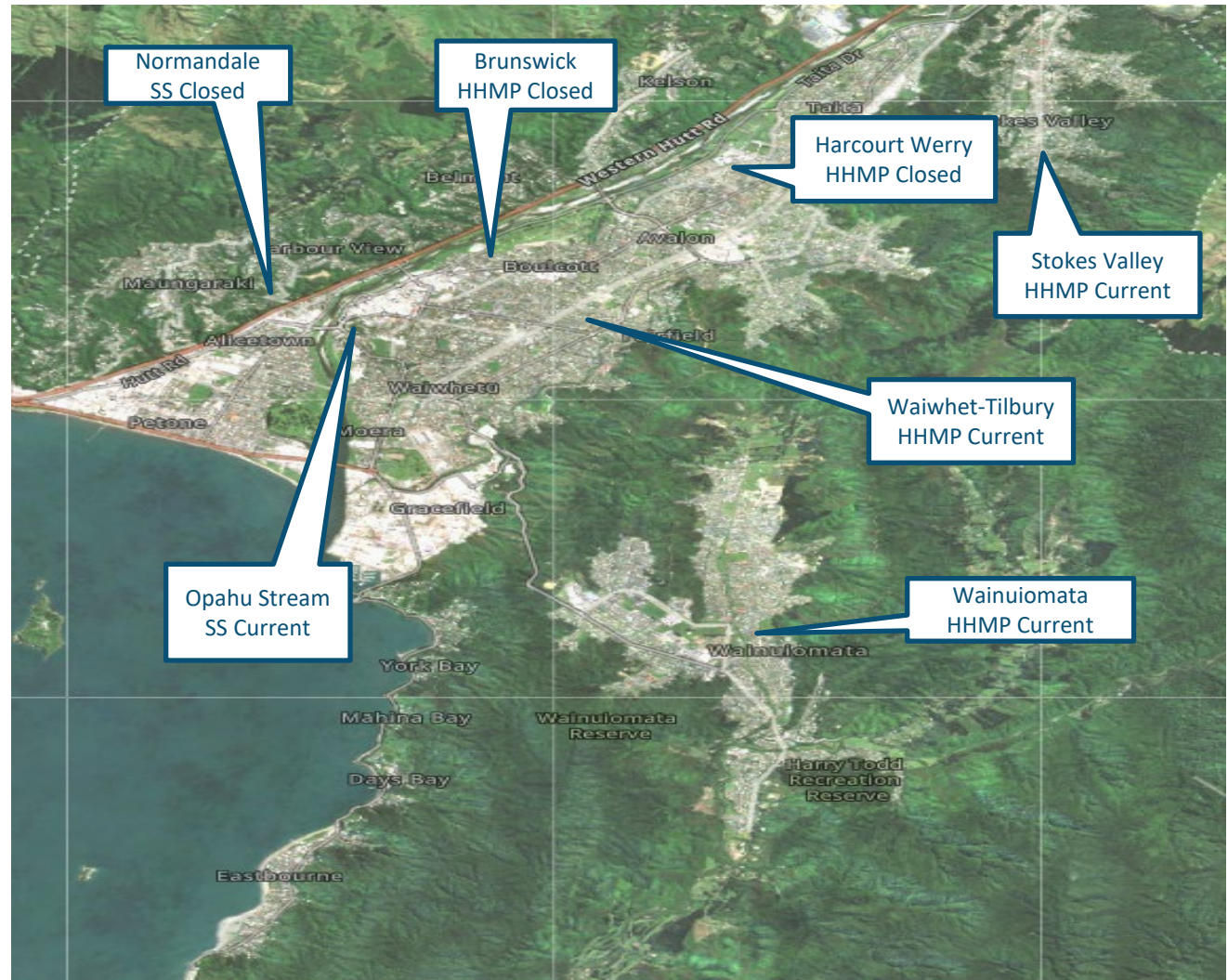
Investigated Catchments History

Human Health Mitigation Projects:

- Wainuiomata (current)
- Waiwhetu Stream at Tilbury (current)
- Stokes Valley (current)
- Harcourt Werry Dr at Percy Cameron St (closed)

Sanitary Surveys:

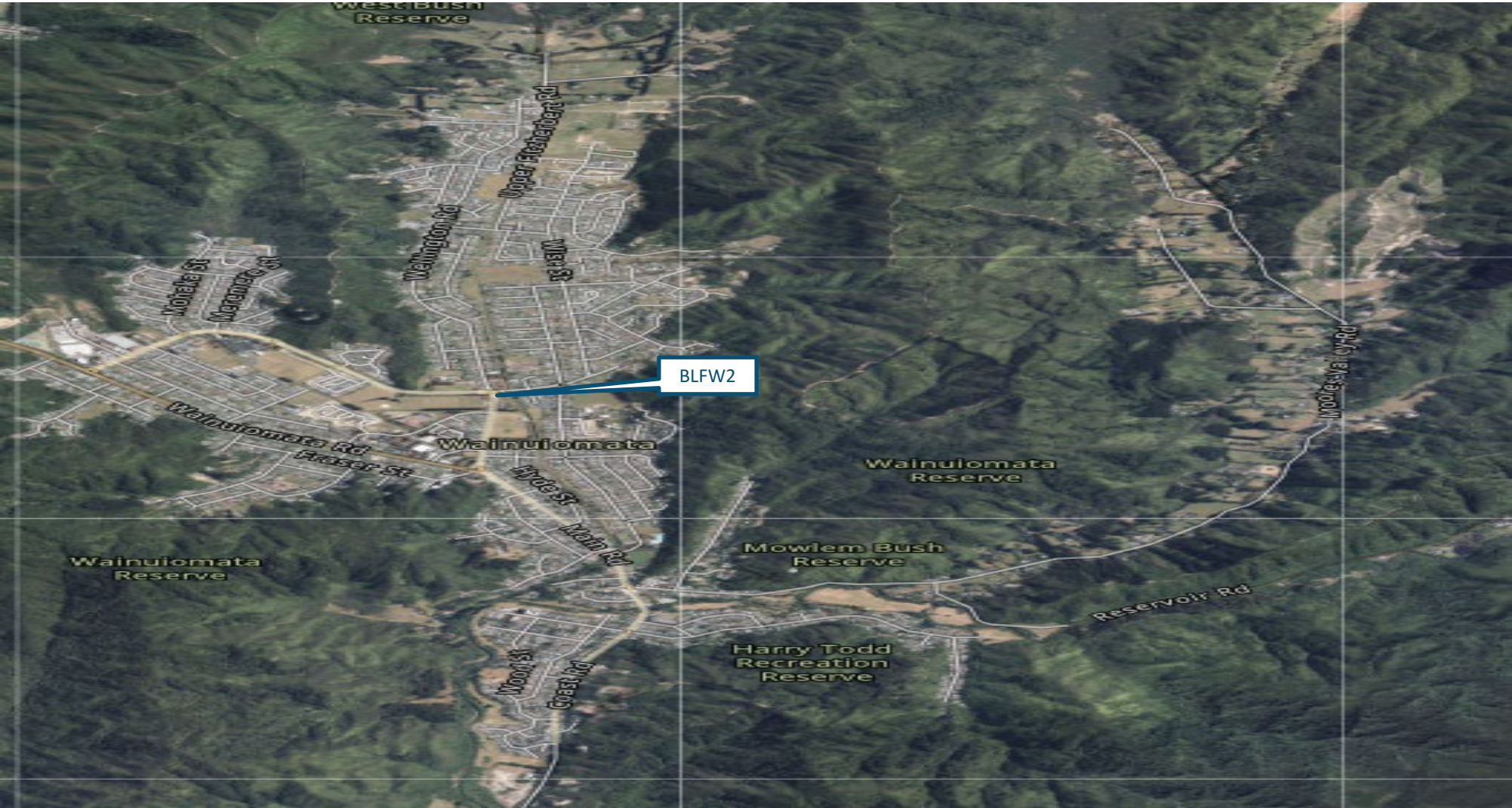
- Opahu Stream at Whites Line East (current)
- Brunswick (closed)
- Normandale (closed)



Time spent in catchments to date

	2021												2022												2023											
HCC Catchments	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
Wainuiomata						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Waiwhetu Stream at Tilbury														■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Stokes Valley														■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Opahu Stream					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Normandale				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Harcourt Werry Dr at Percy Cameron St						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Brunswick											■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	

Wainuiomata Catchment HHMP



Wainuiomata and Lees Grove HHMP

Currently in the fault repair phase as well as new investigations

Private Inspections

- Properties smoke tested – 217
- Properties dye tested – 213
- CCTV laterals inspected - 211
- CCTV lateral meterage (m) – 6,330

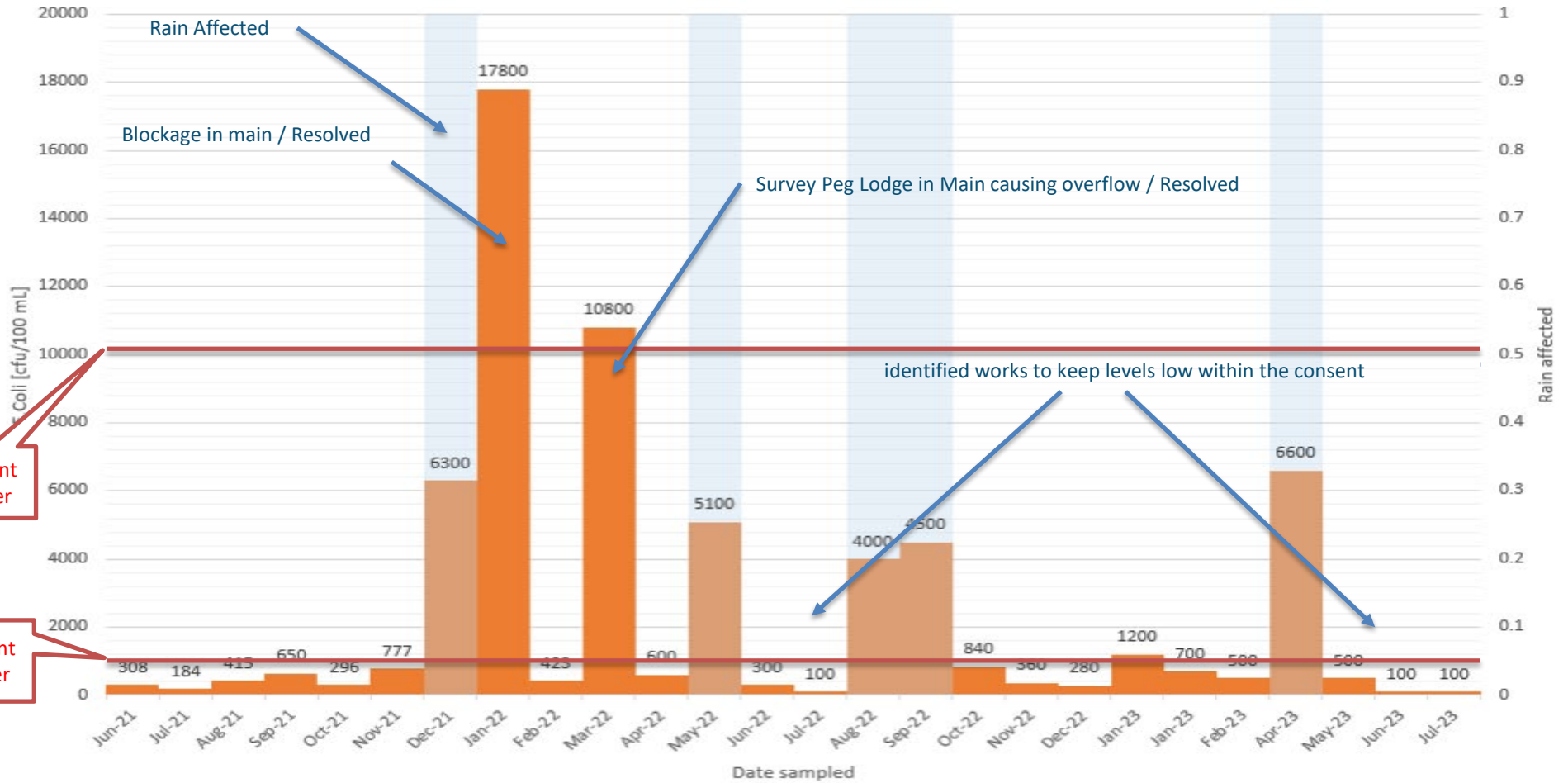
Public Faults

- CCTV of 3km of public wastewater and stormwater network
- Completed reactive root cutting and pipe flushing
- Manhole Repairs

Properties CCTV	211
No Fault found	106
Minor Fault	85
Fault requiring attention	20
Faults Fixed	19
In progress	1
No Response	0

An Improvement to receiving water quality

Wainuiomata at Black Creek (BLFW2) - E.Coli results



Inflow and Infiltration Investigation

Inflow and Infiltration Investigation undertaken at Lees Grove - Wainuiomata

- Set up rain gauge, and 12 level sensing inflow and infiltration monitors
- Confirmed significant amount of ground water and rain water infiltration was both entering the sewer network increasing volume of flow in waste water system and risk of wastewater escaping pipe infrastructure.
- Based on inspections some of this seepage is not visible indicating to enable isolated repairs to resolve noting infrastructure to be in poor condition.
- 12 x Catchments containing, High levels of inflow and infiltration

■ Low Priority/No Further Action Required
■ Medium Priority
■ High Priority



Site name	Average DWF (L/min)	Ground Water (L/min)	Peak Wet Weather Flow (L/min)	SW ₁	Ranking of SW ₁	GW ₁	Ranking of GW ₁	Ranking of GW ₁	Groundwater volume (l, over monitoring period)	Base Volume (l)	Total Dry volume (l)	Total Properties above iTracker	No. Properties within Zone	% Properties within Study Zone	
WM01	30.0	21.8	131.0	4.4	7	58%	8	1659.3	8	1100736	409500	1509984	26	26	8%
WM02	21.3	10.5	120.0	5.6	3	39%	11	1226.9	9	529200	393750	1073520	35	25	7%
WM03	36.8	21.9	639.0	17.4	1	48%	4	4076.3	4	1103760	204750	1854720	48	13	4%
WM04	7.4	4.3	15.0	2.0	12	46%	6	1071.4	10	216720	157500	374976	10	10	3%
WM05	89.7	50.0	211.0	2.4	11	45%	8	3690.5	5	2520000	551250	4520880	127	35	10%
WM06	46.8	29.0	205.0	4.4	6	50%	3	2174.9	6	1461600	488250	2359728	57	31	9%
WM07	61.0	39.0	173.0	2.8	10	51%	2	1996.4	7	1965600	693000	3074400	70	44	13%
WM08	69.6	40.5	282.0	4.1	8	47%	5	4357.6	3	2041200	362150	3507840	93	23	7%
WM09	182.0	103.5	860.0	4.7	5	45%	7	8454.2	1	5216400	488250	9172800	251	31	9%
WM10	11.2	0.3	143.0	12.8	2	2%	12	460.8	12	15120	551250	564480	35	35	10%
WM11	11.8	6.5	59.4	5.0	4	44%	9	1002.1	11	328608	267750	596232	17	17	5%
WM12	194.8	101.4	700.0	3.6	9	42%	10	5844.0	2	5110560	756000	9817920	299	48	14%



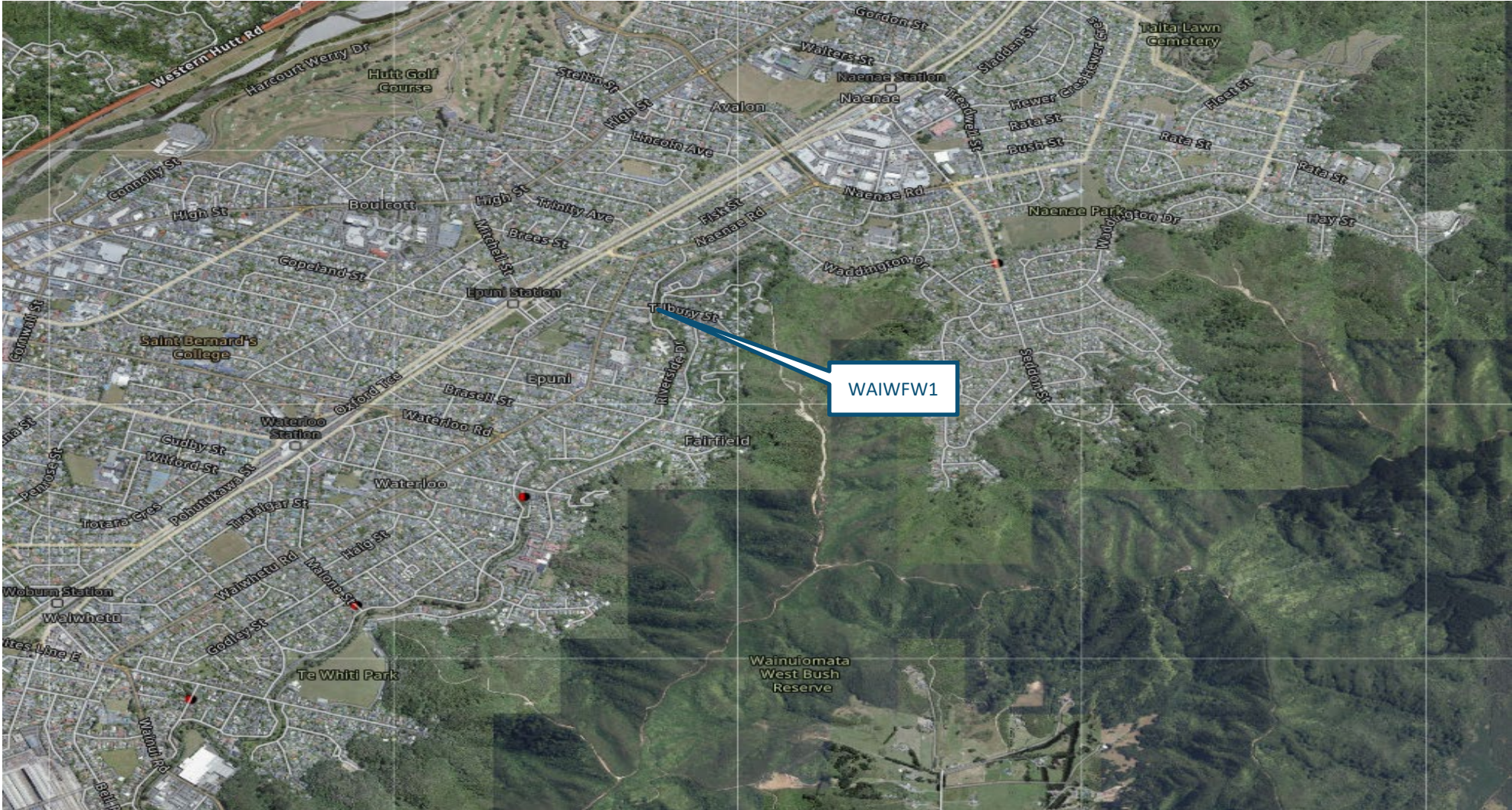
Renewals in Lees Grove Wainuiomata



DRAINAGE INVESTIGATIONS TEAM REFERENCE APP



Waiwhetu Stream at Tilbury HHMP



Waiwhetu Stream at Tilbury HHMP

Commenced in 2021

In the fault repair phase as well as further investigation

Private Inspections

- Properties smoke tested – 130
- Properties dye tested – 130
- CCTV laterals inspected – 130
- CCTV lateral meterage (m) – 3,900

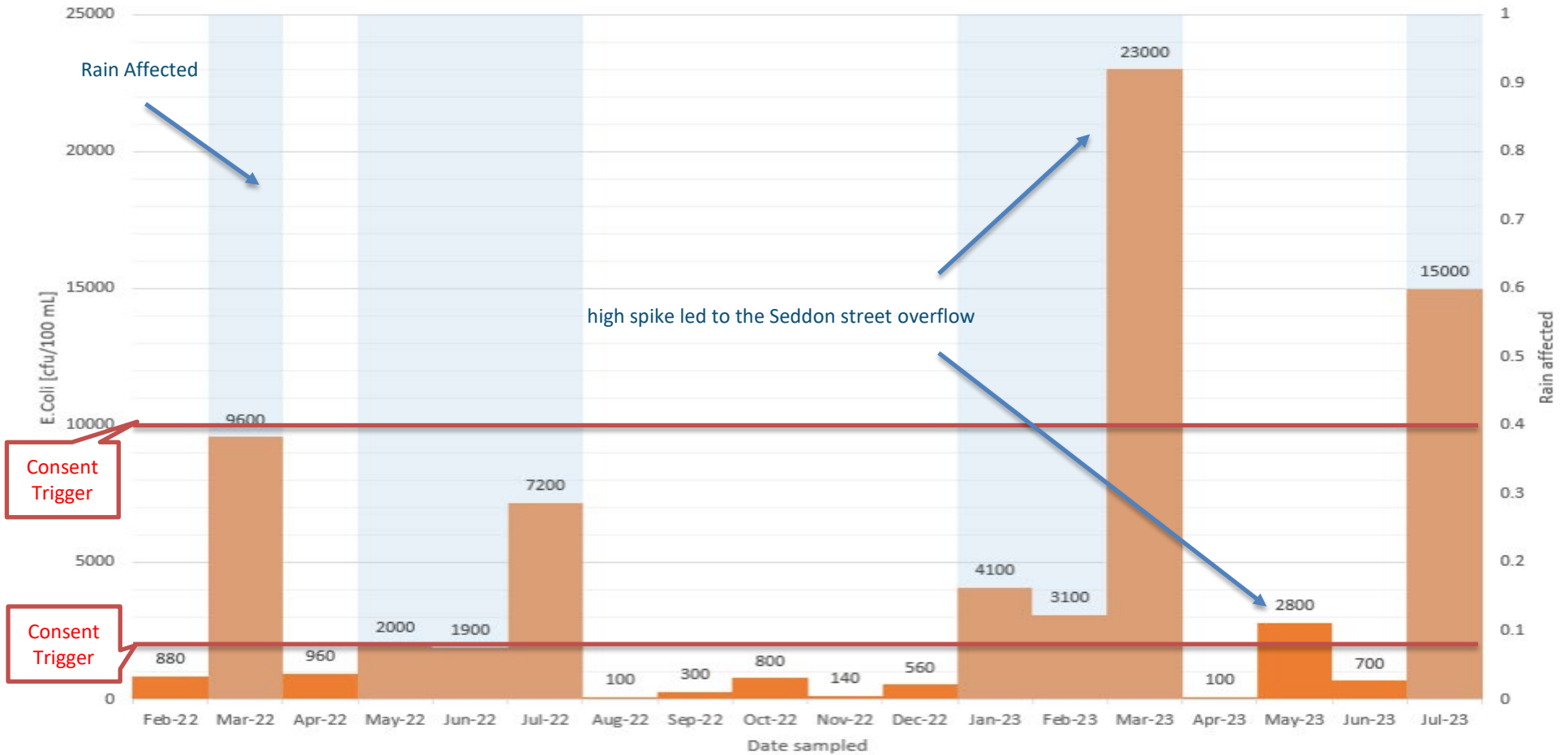
Public Faults

- CCTV 4.8km of public wastewater and stormwater network
- Completed reactive root cutting and pipe flushing
- 163m of re-lined wastewater mains in Seddon Street

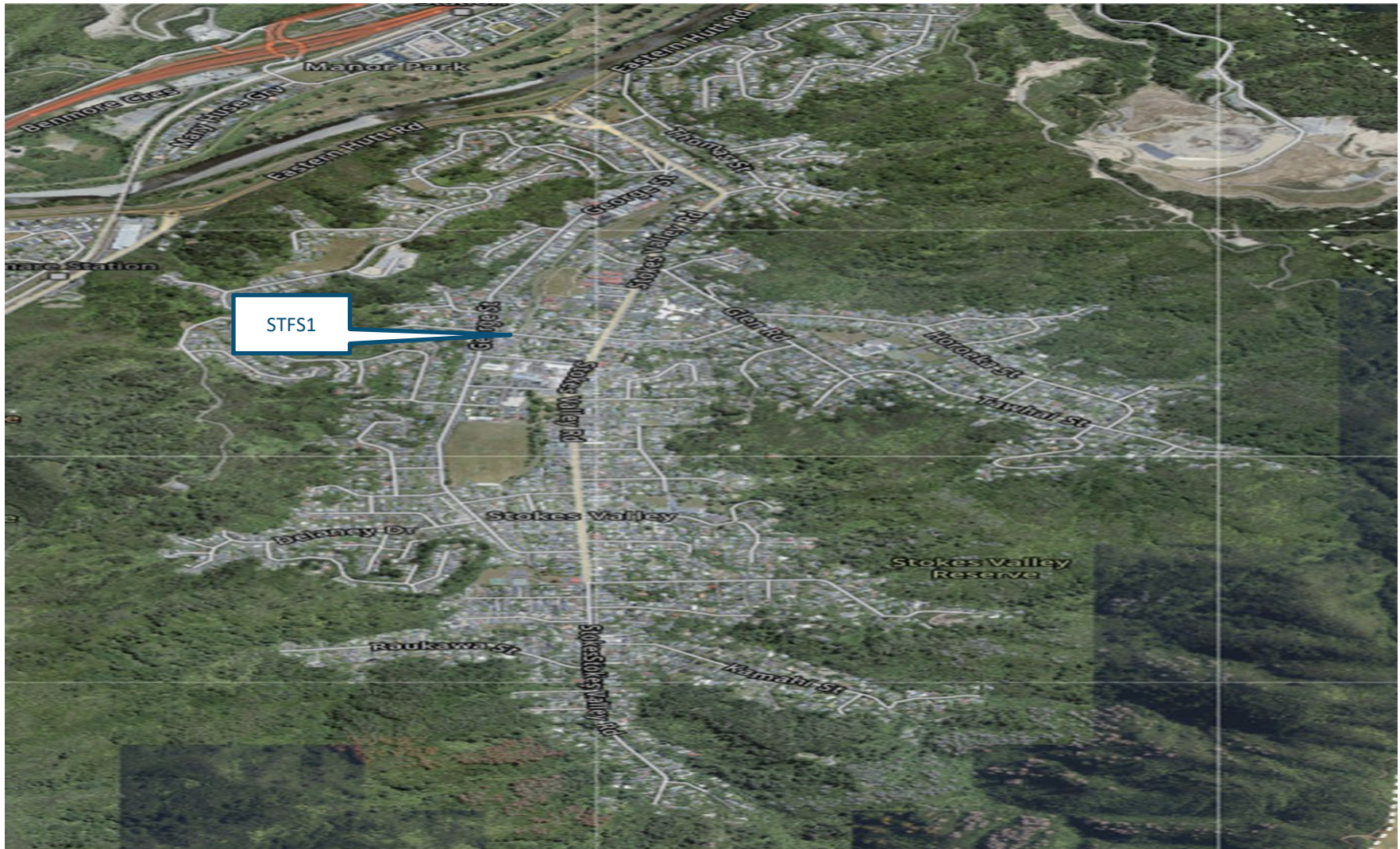
Properties CCTV	130
No Fault found	77
Minor Fault	42
Fault requiring attention	14
Faults Fixed	12
In progress	2
No Response	0

An improvement to receiving water quality

Waiwhetu Stream at Tilbury (WAIWFW1) - E. coli results



Stokes Valley HHMP



Stokes Valley HHMP

Commenced February 2022

In the fault repair phase as well as new investigations

Private Inspections

- Properties smoke tested – 24
- Properties dye tested – 24
- CCTV laterals inspected - 24
- CCTV lateral meterage (m) – 720

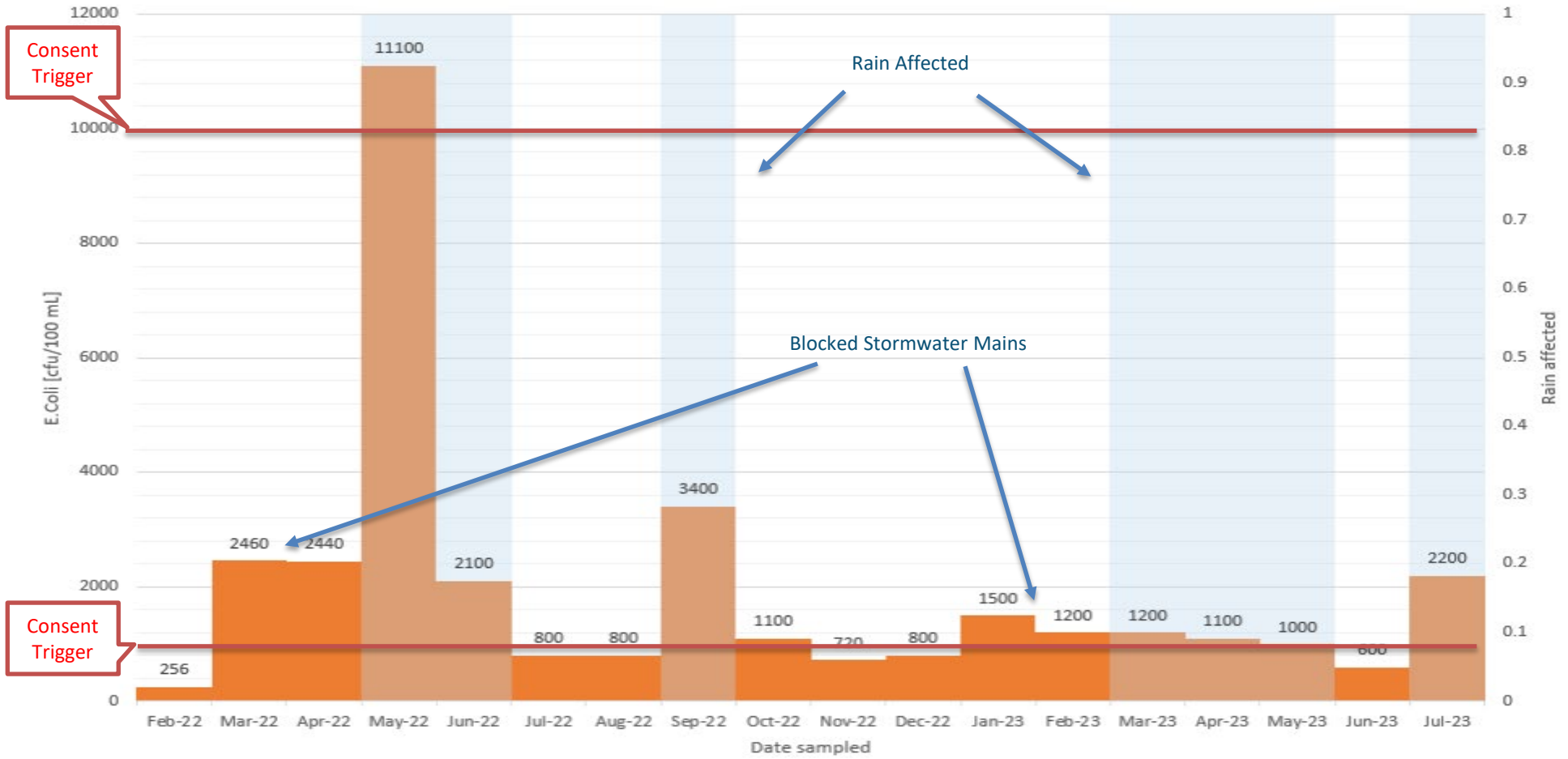
Public Faults

- CCTV of 4.20km of public wastewater / stormwater network
- Flush and clear of debris build up in mains, Roots and grease

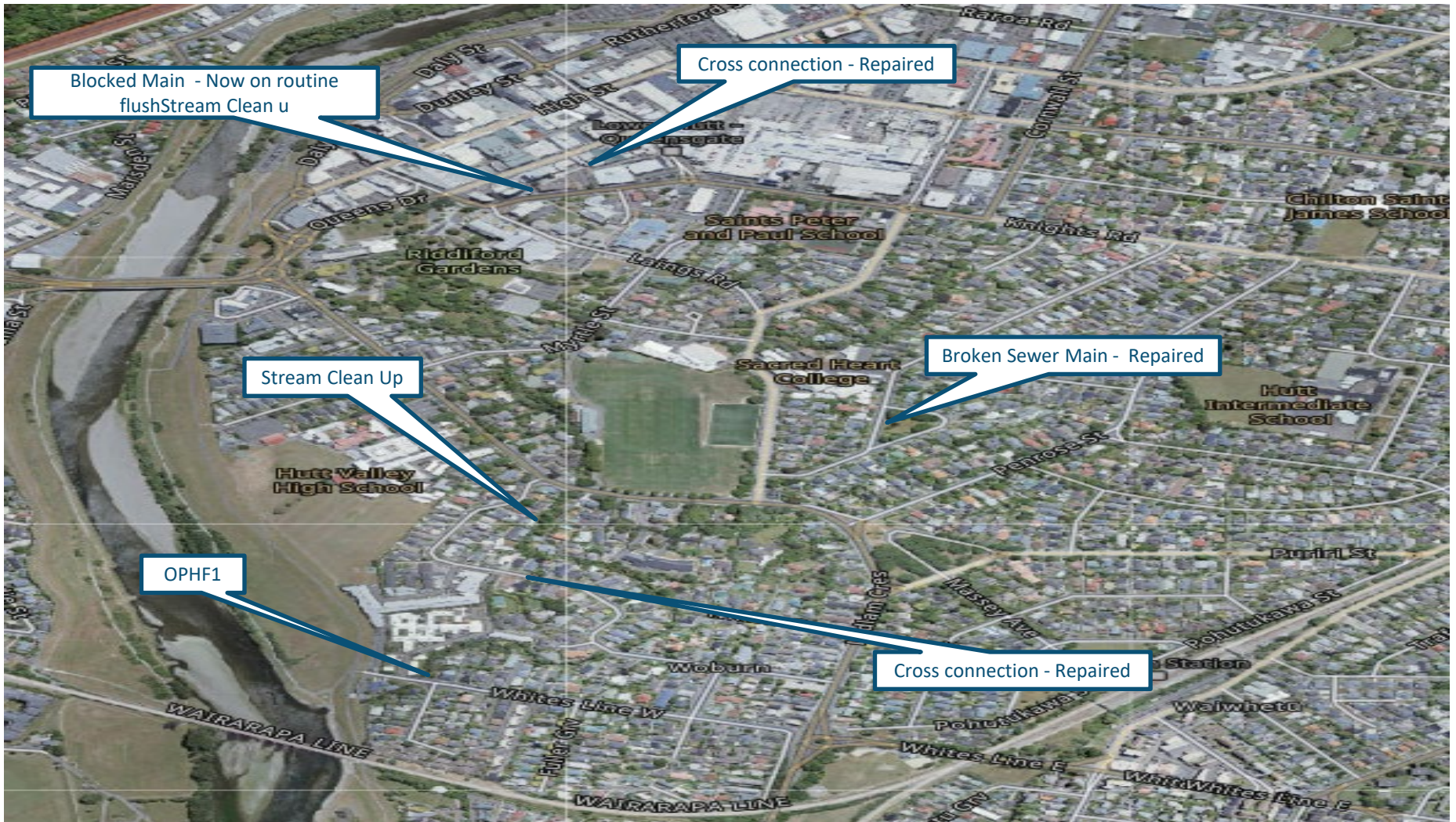
Properties CCTV	24
No Fault found	18
Minor Fault	5
Fault requiring attention	1
Faults Fixed	0
In progress	1
No Response	0

An improvement to receiving water quality

Stokes Valley at Rawhiti Street (STFS1) - E.Coli results



Opahu Stream at Whites Line West SS



Opahu Stream at Whites Line East SS



Commenced May 2021

And is in the process of being closed out

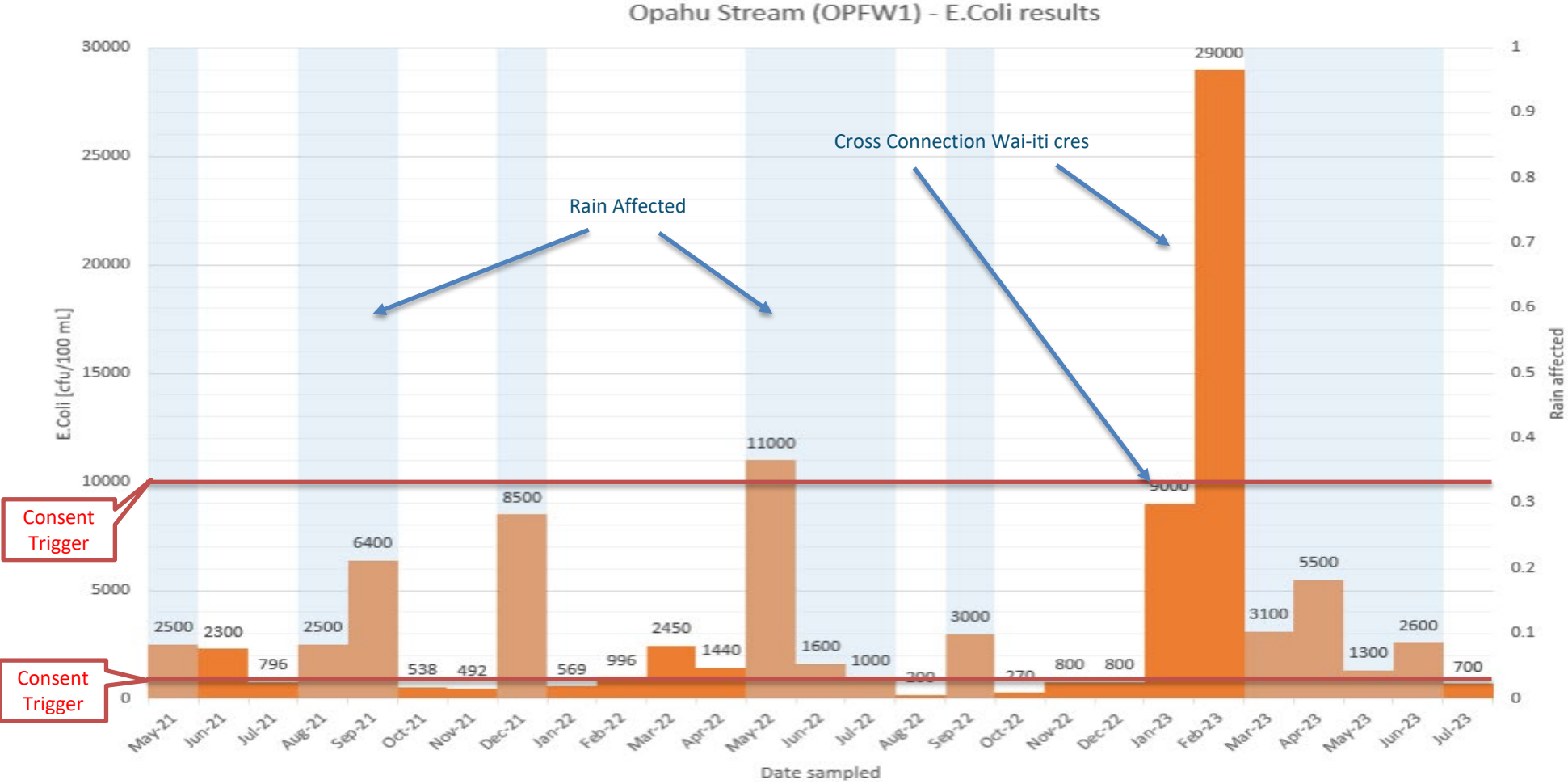
Private Inspections

- Cross connection at Queens drive now repaired
- Broken Sewer main at Hautana Street now repaired
- Cross connection in Wai-iti Crescent now repaired
- Sampling to establish trends and areas affected by high E-coli results

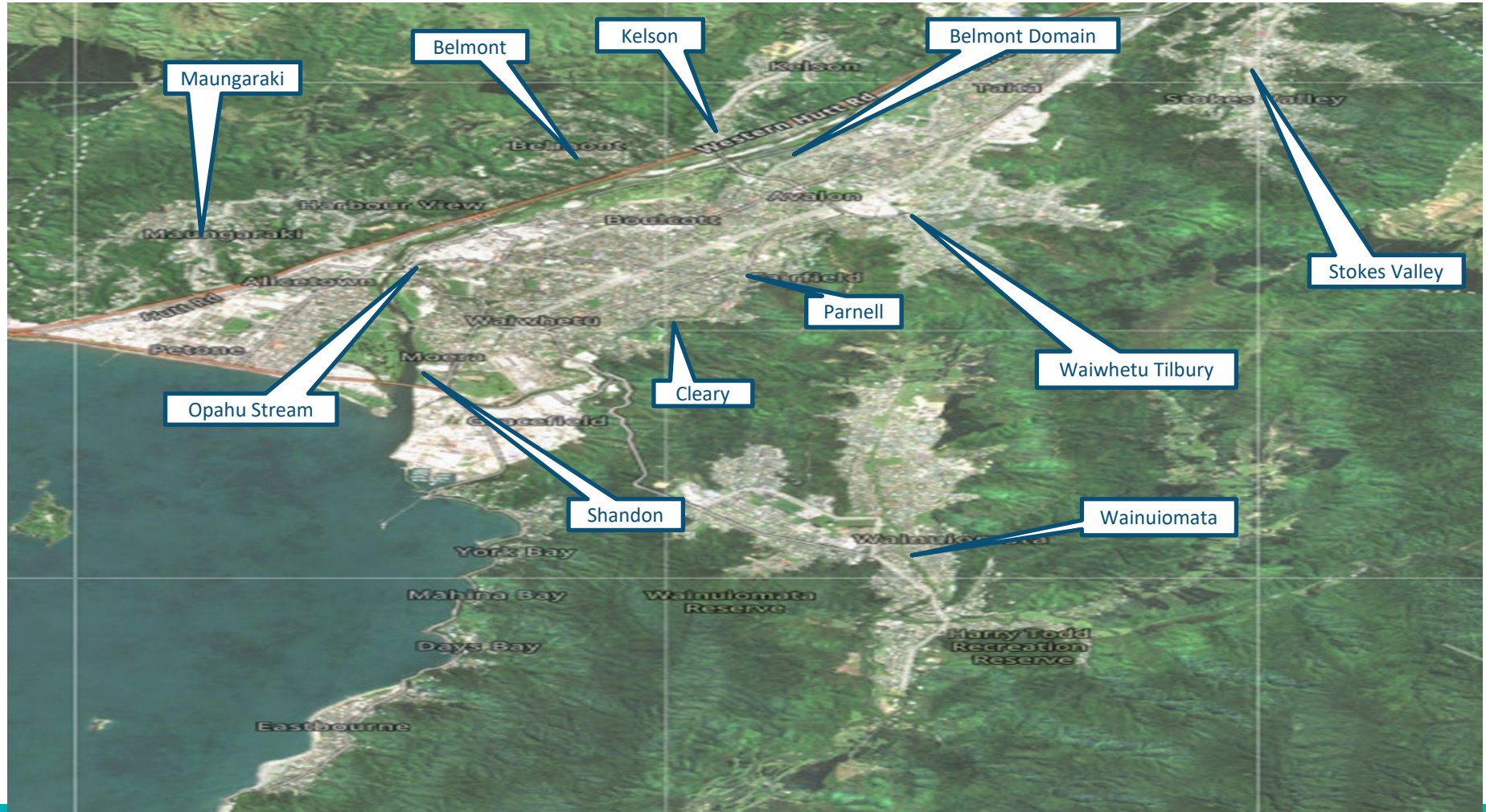
Public Faults

- Blocked wastewater main from fat blockages now on a maintaince flushing programme
- CCTV of wastewater an stormwater mains to establish pipe integrity
- Manhole lids replaced
- Pipes flushed of fat and root intrusions

An improvement to receiving water quality



Monthly Routine Sampling Programme



Questions?

**KNOWING
YOUR PIPES**