

Tauranga City Council's comprehensive stormwater consent monitoring (first 5 years)



Tauranga City

Boffa Miskell

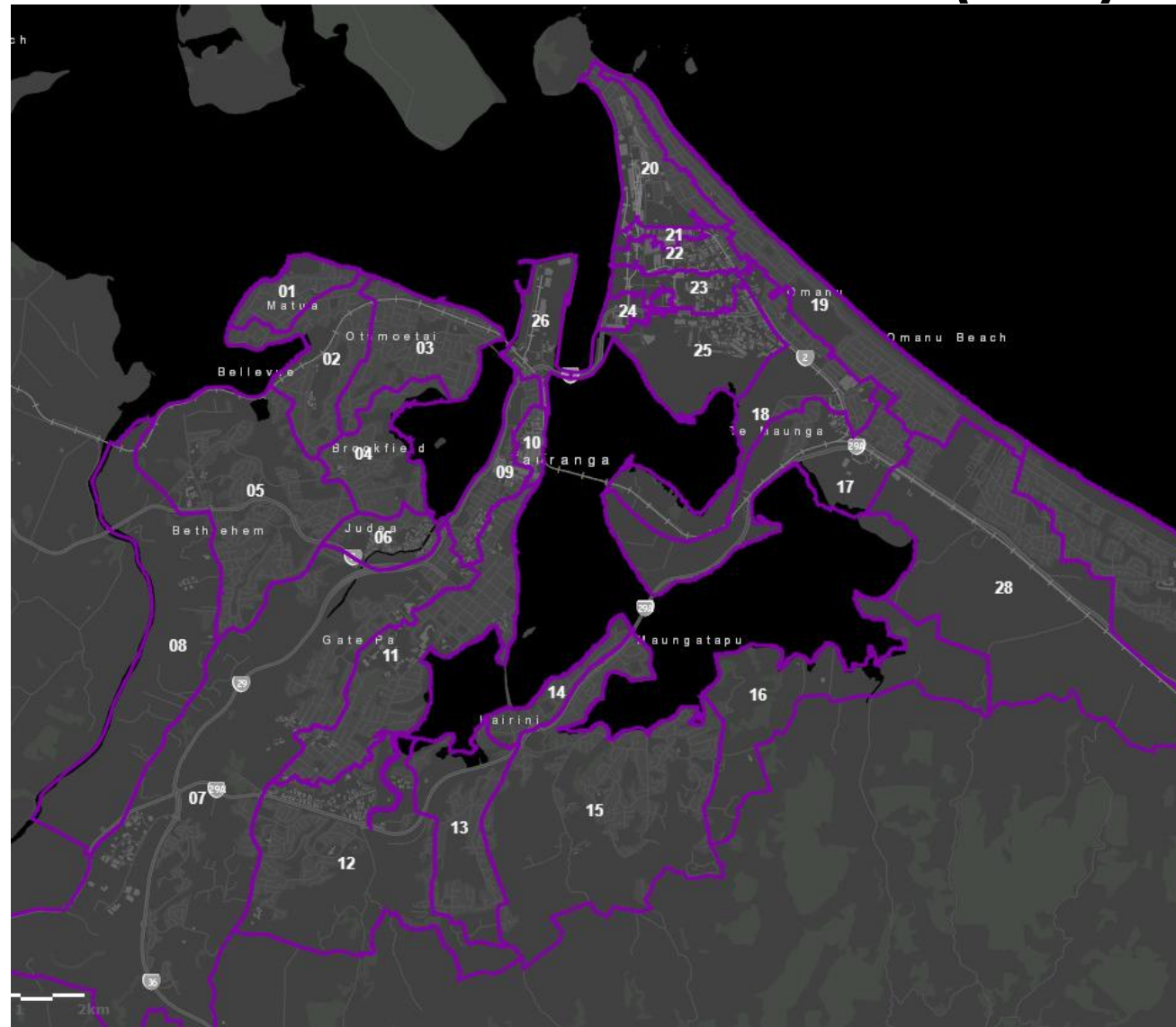


About the project

- CSC granted in 2012
- Numerous conditions
- Stormwater & State Of Receiving Environment (SORE)
- First five years



Sub-catchments (26)



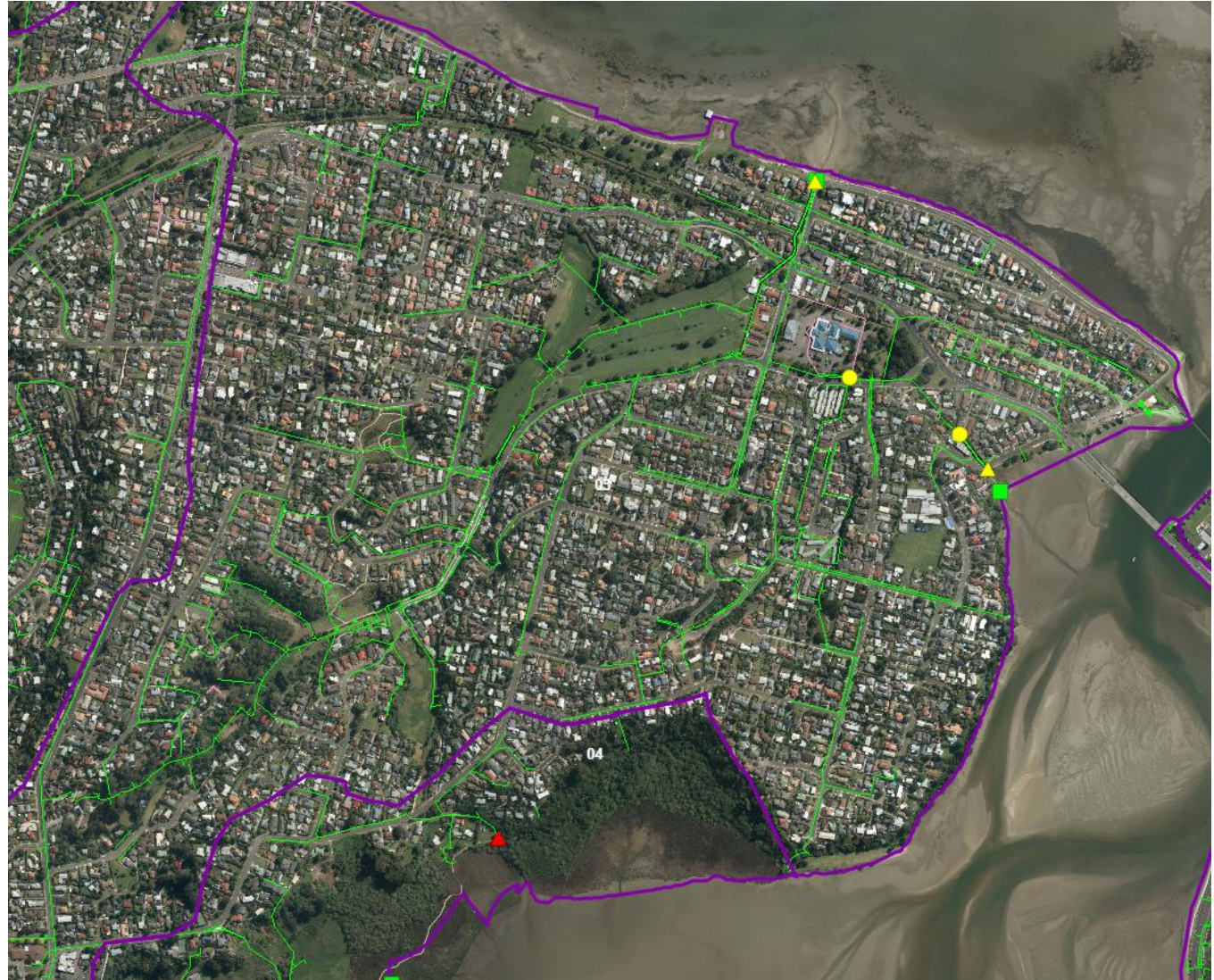
Stormwater monitoring

- Methods
 - 41 sample sites across 26 sub-catchments
 - Quarterly baseline & storm event (5 samples)
 - Heavy metals, hydrocarbons, nutrients, e.coli



SORE monitoring

- Methods
- Priority & non priority
 - Marine (49)
 - Benthic inverts
 - Sed contaminants
 - Grain size
 - Freshwater (28)
 - Water quality
 - Habitat assessment
 - Macroinvertebrates
 - Fish survey
 - TCC boundary



SORE monitoring



SORE monitoring



Stormwater monitoring

- Results
 - Trigger values & Condition 9.7
- 37 sites (90%) recorded at least one exceedance
- 25 sites (60%) required further investigation (condition 9.7)

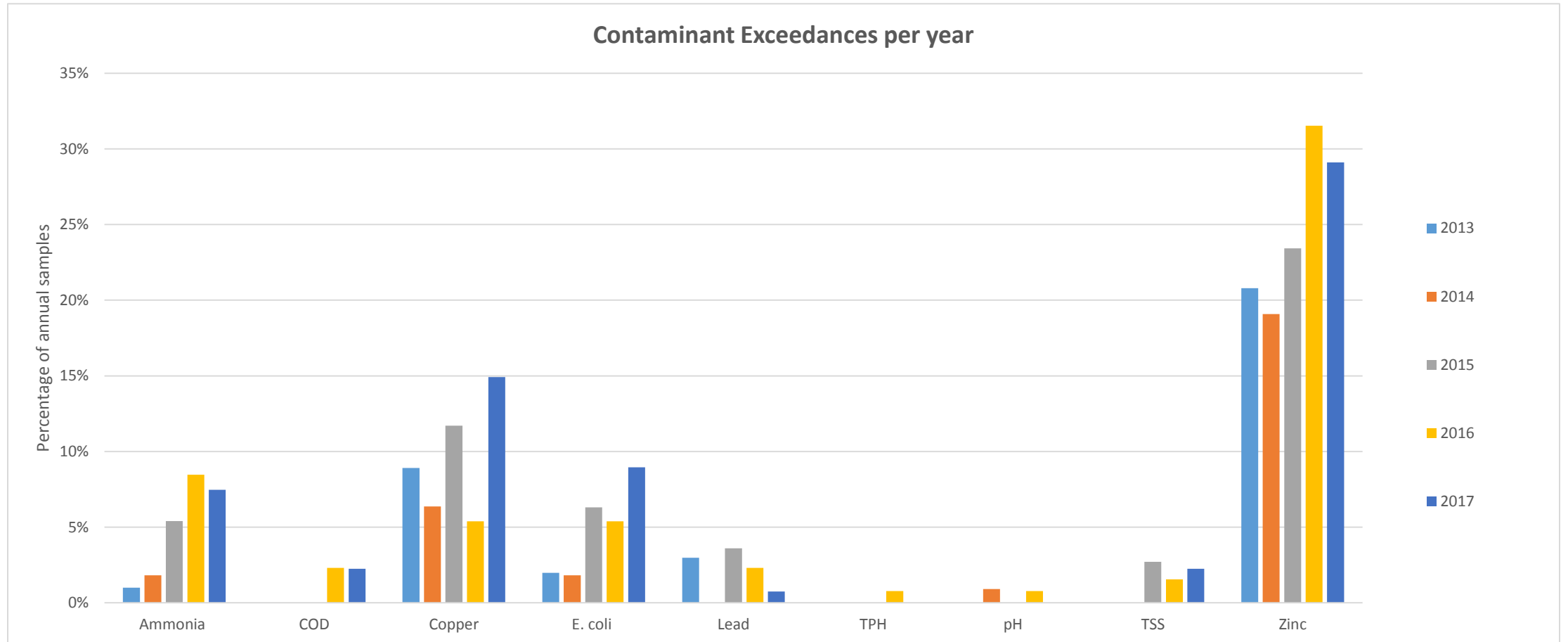
Year 1	1 st Q		
	2 nd Q	E	
	3 rd Q	E	
	4 th Q		E
	Rain event		
Year 2	1 st Q		
	2 nd Q		
	3 rd Q		
	4 th Q		E
	Rain event		

Stormwater monitoring

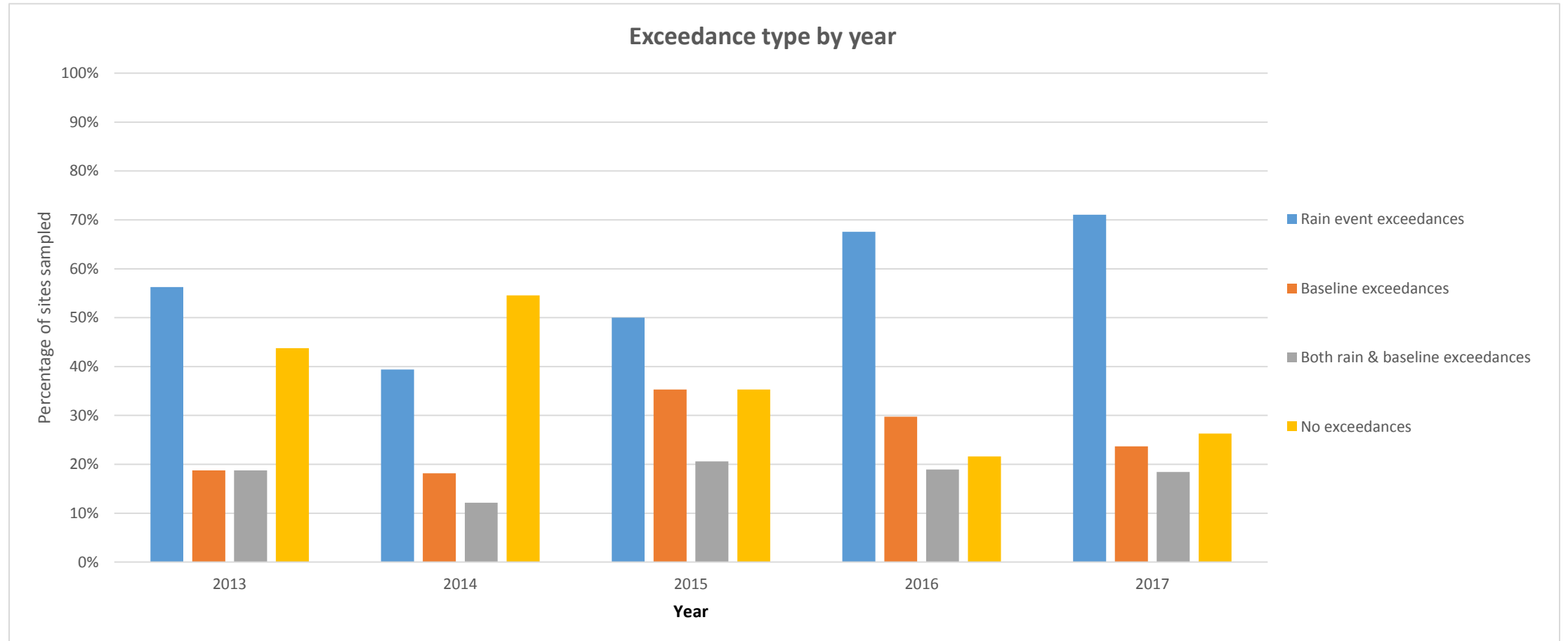
- Results

Parameter/ contaminant	Number of monitoring sites	
	Trigger value exceeded	Further investigation required
Chemical Oxygen Demand (COD)	7	2
Copper	22	6
E. coli	23	4
Lead	9	2
pH	4	0
Total ammonia	5	2
Total Petroleum Hydrocarbons (TPH)	1	0
Total Suspended Solids (TSS)	4	1
Zinc	31	23

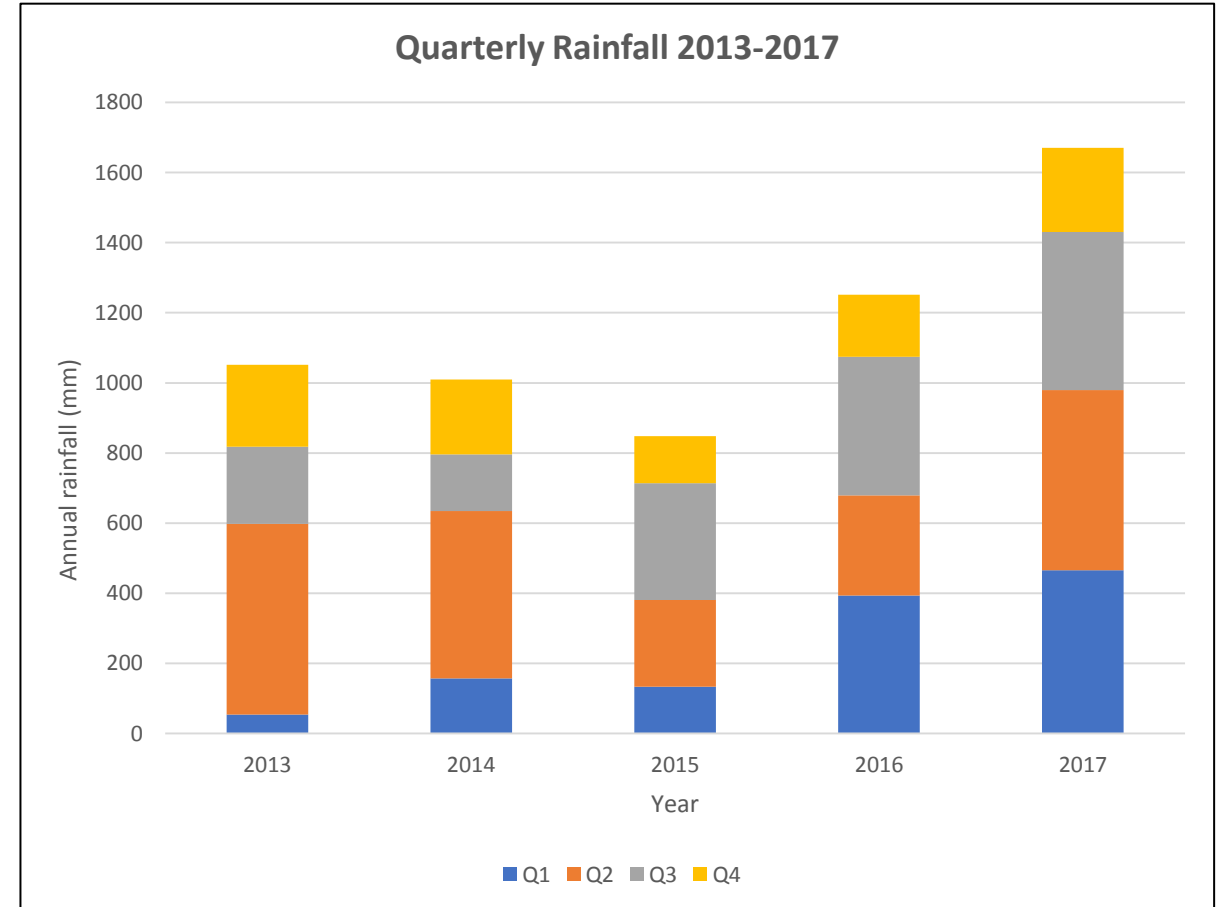
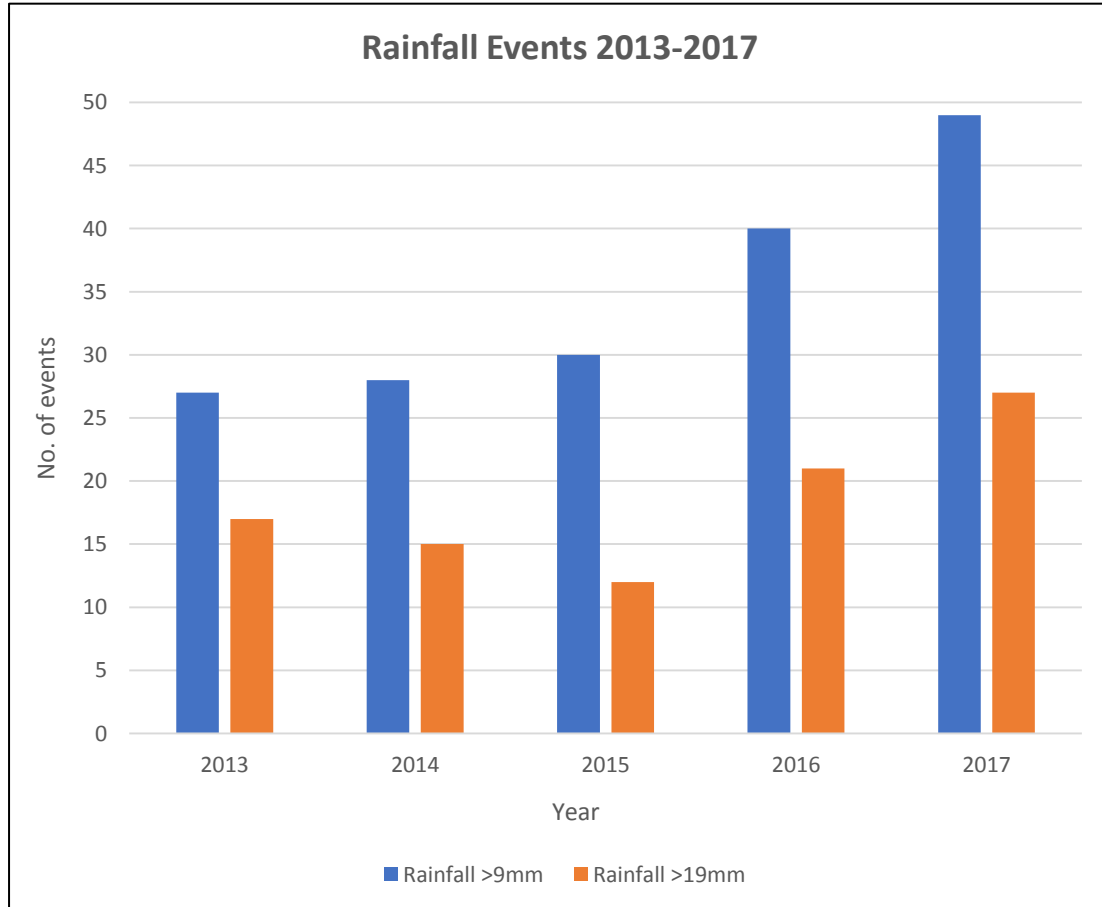
Stormwater monitoring



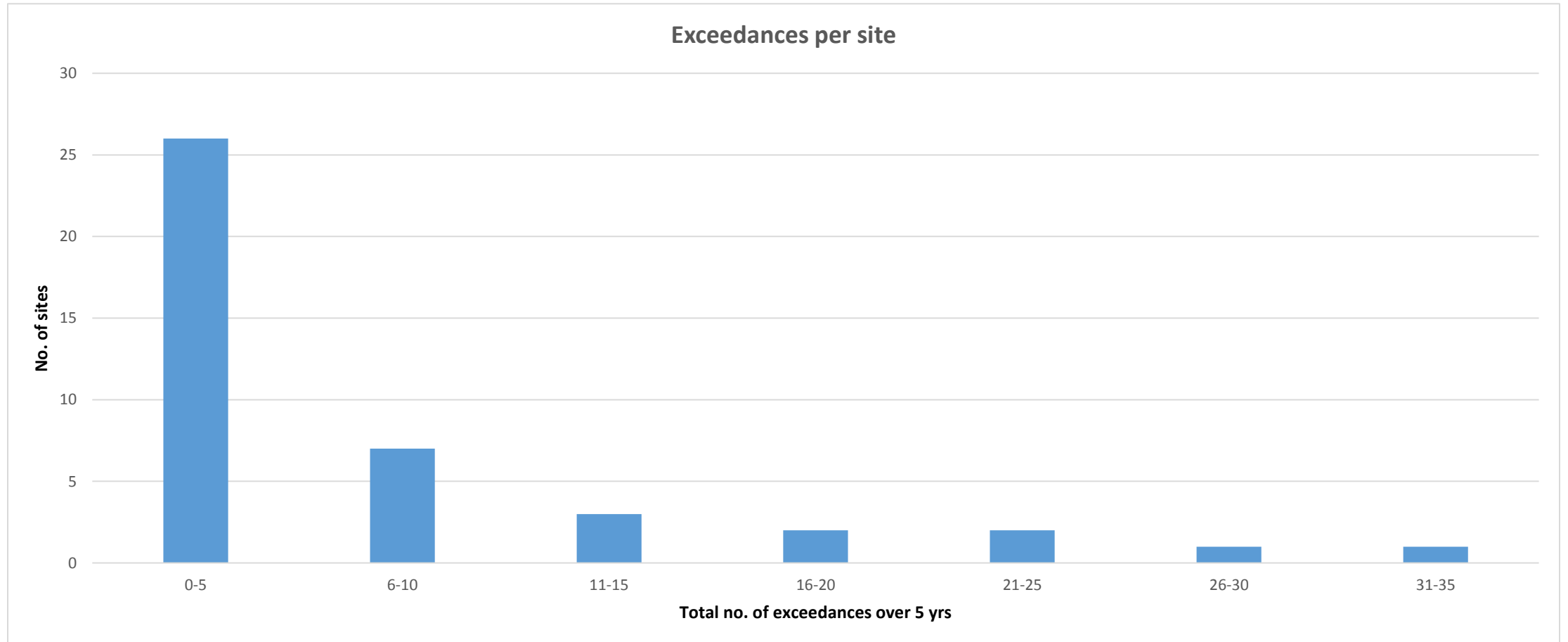
Stormwater monitoring



Stormwater monitoring



Stormwater monitoring



SORE monitoring

- Freshwater
 - 13 sites (of 28) recorded a contaminant exceedance
 - Zinc (8 sites), Copper (5 sites)
- Marine
 - 3 sites (of 49) recorded a contaminant exceedance
 - Zinc (3 sites), Copper (1 site)



SORE monitoring

- Freshwater
 - 9 sites scored poorly in at least two of
 - Habitat score <60
 - MCI score <80
 - Native fish diversity <4 sp

MCI categories	MCI – No. of sites	QMCI – No. of sites
Excellent	0	0
Good	1	2
Fair	11	3
Poor	15	22

SORE monitoring

- Freshwater
 - 13 native sp.



SORE monitoring

- Freshwater Fish species

No. of native species	No. of sites
8	2
7	2
6	4
5	7
4	3
3	5
2	1
1	3

SORE monitoring

- Marine
 - 3 sites scored poorly in both
 - Number of taxa present (<5)
 - Shannon Weiner diversity (<1)
- Marine & freshwater sites
 - Monitoring for trends:
 - Contaminants
 - Ecological issues
 - Limitations

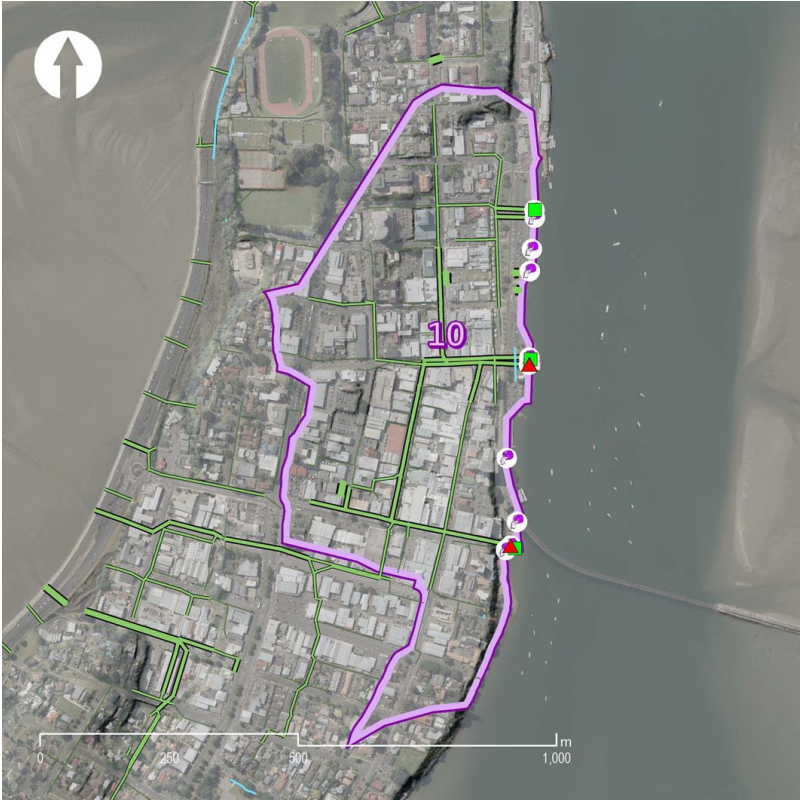


So what does IT mean?

- Focus and prioritise
 - Refine the monitoring programme
 - Investigative sampling
 - Pollution prevention audits
 - Stormwater devices
 - Riparian enhancement



Tauranga CBD



- Exceedances in Zinc & Copper
- Increased monitoring of discharges
- Catchment management plan
- Collaborating on streetscape upgrades
 - Raingardens for street runoff
 - Options for treatment of light industrial areas

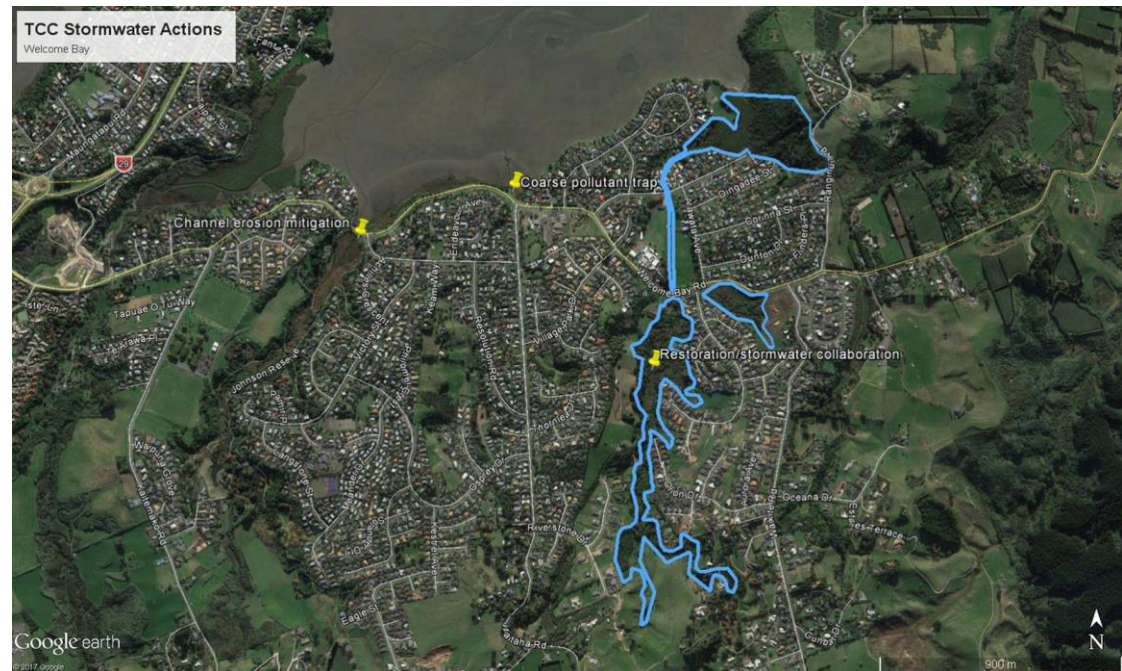
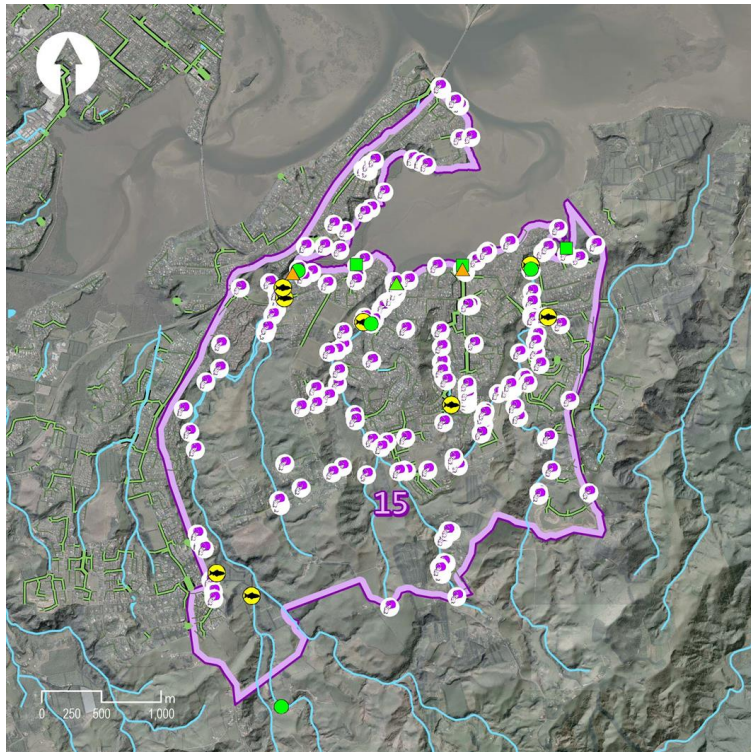
Mount Industrial – Te Maire

- Exceedances in Zinc, Total Ammonia & Copper
- Floating & planted wetlands
- Port of Tauranga SW discharge consent
- Investigative sampling
- Riparian planting



Welcome Bay

- Mainly E. coli exceedances
- Upper catchment waterways
- Gross pollutant traps
- Improved aquatic habitat



Any questions?



Tauranga City



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