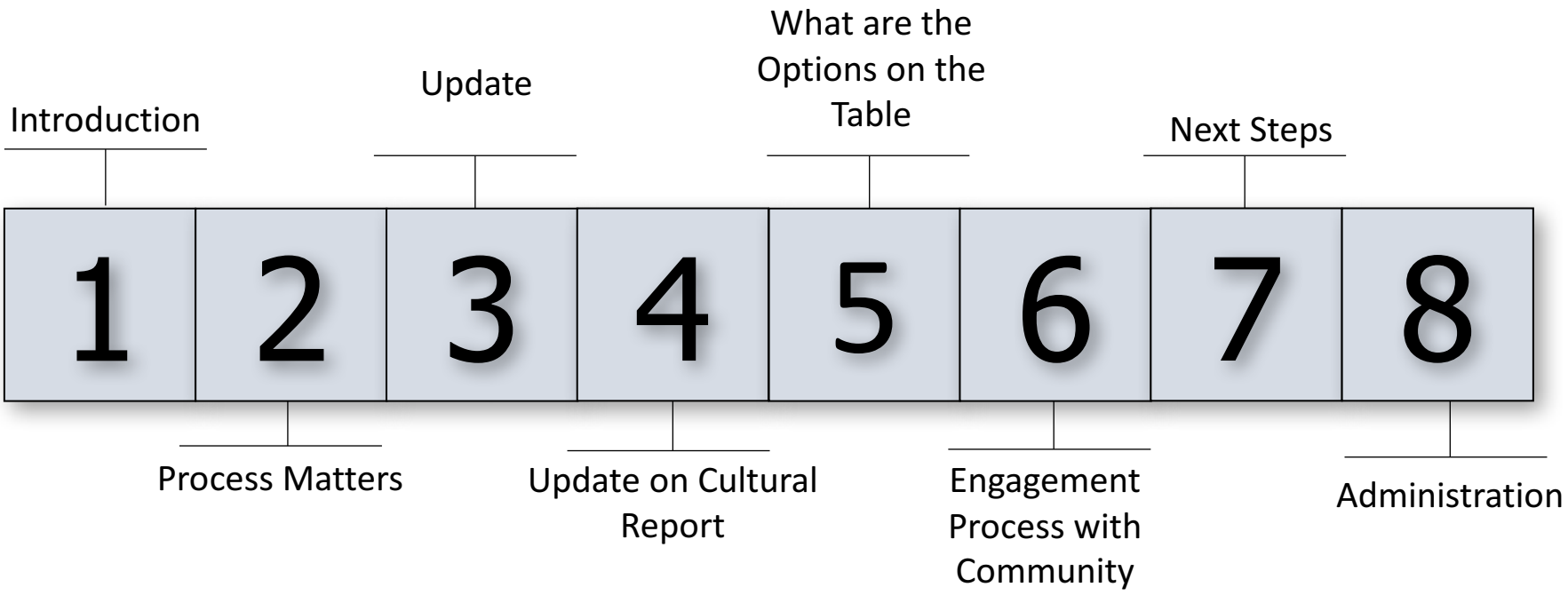
Wairoa Wastewater Scheme Stakeholder Group Meeting

Meeting 8 - 18 October 2017

INTRODUCTION

Outline



PROCESS MATTERS

Stakeholder Group Process

Outstanding Issues

UPDATE - THE JOURNEY

COLLECT BACKGROUND INFORMATION

ESTABLISH DRIVERS

IDENTIFY VALUES
Environmental
Cultural
Financial
Recreational

Stakeholders

INPUT

Technical Advice

Community

REALISTIC ASPIRATIONS

What does the Community want

What can the Community afford

BPO

Select

Narrow down

Modify

Define

OPTIONS

Catchment

Scenarios

WWTP

WHERE SHOULD THE FOCUS BE

THE JOURNEY – HAS THE ROUTE CHANGED

~~BPO~~

Improved Water Quality

BPO

WHAT HAVE WE NEEDED TO DO

Understand current system

Understand environment

Develop options

Solutions need to consider

- Effects
- Preferences
- Limitations
- Big picture

Solutions need to deliver

- Affordable option
- While not what is preferred – is what is needed
- Public health maintained/enhanced
- Environmental impact minimal / enhanced
- Can develop over time
- Contributes to improving catchment

WHAT HAVE WE LEARNT SO FAR

About current system

- Operational challenges
- Minimal/no environmental impacts
- Discharge to river is not what community wants
- Doesn't meet cultural aspirations (not just TW)
- Inconsistent with local, regional and central government policy

About future system

- Affordable
- Mindful of cultural preferences (not just TW)
- Might need to evolve over time
- Should take a holistic view

WHAT HAVE WE DONE

Sought and received community input

Understood immediate environment and limitations

- Managing priorities
- Compliance

Identified option concepts

- Tangata whenua recognition, particularly land passage
- Affordable cost increases
- Can evolve over time

Sought guidance on the role wider catchment should contribute to river water management

Realised solution isn't just discharge:

- Infrastructure
- Impacts on wider community
- Engagement

Identified need for holistic approach

WHAT ARE THE OPTIONS

Status Quo

- 1.
- 1.

Riv

- 2.
- 2.
- 2.
- 2.
- 2.

Oc

- 3.
- 3.

La

- 4.
- 4.
- 4.
- 4.
- 4.5 Land-90 day storage buffer/irrigation rate 2
- 4.6 Land-120 day storage buffer/irrigation rate 2
- 4.7 Land-50% flow/90 day st
- 4.8 Land-50% flow/120 day s
- 4.9 Land-rapid infiltration

Combo

- 5.1 Combo-River/land-HRLP-
- 5.2 Combo-River/land-HRLP-
- 5.3 Combo-50% flow/River/l
- 5.4 Combo-50% flow/River/l

Status quo

River

Ocean

Land

- Low rate (irrigation)
- High rate (land passage)

Combination

WHAT ARE THE OPTIONS

< $2 M

$2 - 5 M

$15 - 20 M

> $20 M

$10 < 20 M

Status Quo

- •1.1 Status Quo
- •1.2 River-low bugs/24-hour continuous discharge

River

- •2.1 River-low bugs
- •2.2 River-low bugs/HRLP-OLF
- •2.3 River-HRLP-OLF
- •2.4 River-50% flow/low bugs/HRLP-OLF
- •2.5 River(new)-low bugs -HRLP-OLF

Ocean

- •3.1 Ocean
- •3.2 Ocean-HRLP-OLF

Land

- ation rate 1
- gation rate 1
- uffer/irrigation rate 1
- buffer/irrigation rate 1
- ation rate 2
- gation rate 2
- uffer/irrigation rate 2
- buffer/irrigation rate 2

Rule of thumb:

$5 M = $200/y = $4/wk

$10 M = $400/y = $8/wk

Combo

- •5.1 Combo-River/land-HRLP-OLF/14 day sto
- •5.2 Combo-River/land-HRLP-OLF/90 day sto
- •5.3 Combo-50% flow/River/land-HRLP-OLF/14
- •5.4 Combo-50% flow/River/land-HRLP-OLF/90 day

WHAT OPTIONS MUST DO

Be affordable <$10m ($400/yr)

Observe tikanga

- Providing land passage/bioremediation
- Avoiding waahi tapu
- Maintain/revitalize water's mauri

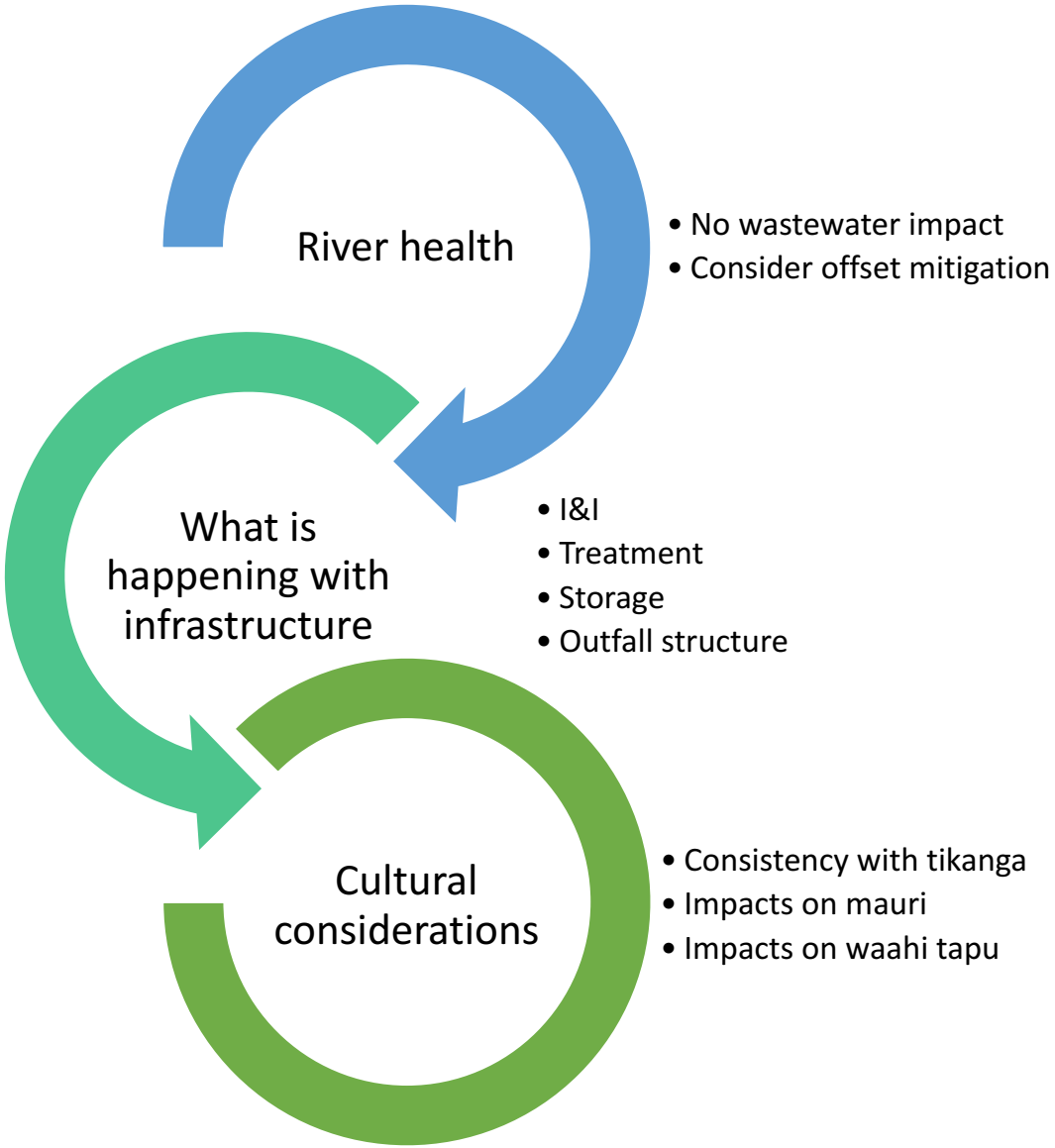
Contribute to health of river by

- Removal
- Reduction
- Offset mitigation

Be technically feasible in longer term

Be legally achievable

WHAT IS IN A HOLISTIC APPROACH

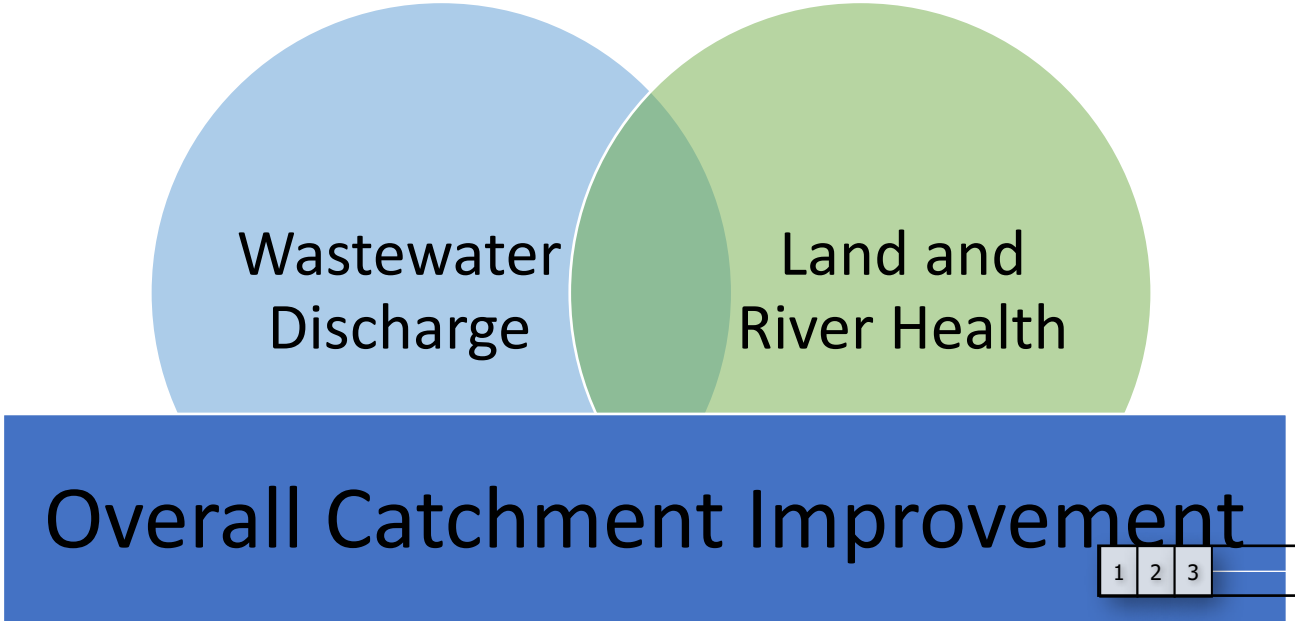


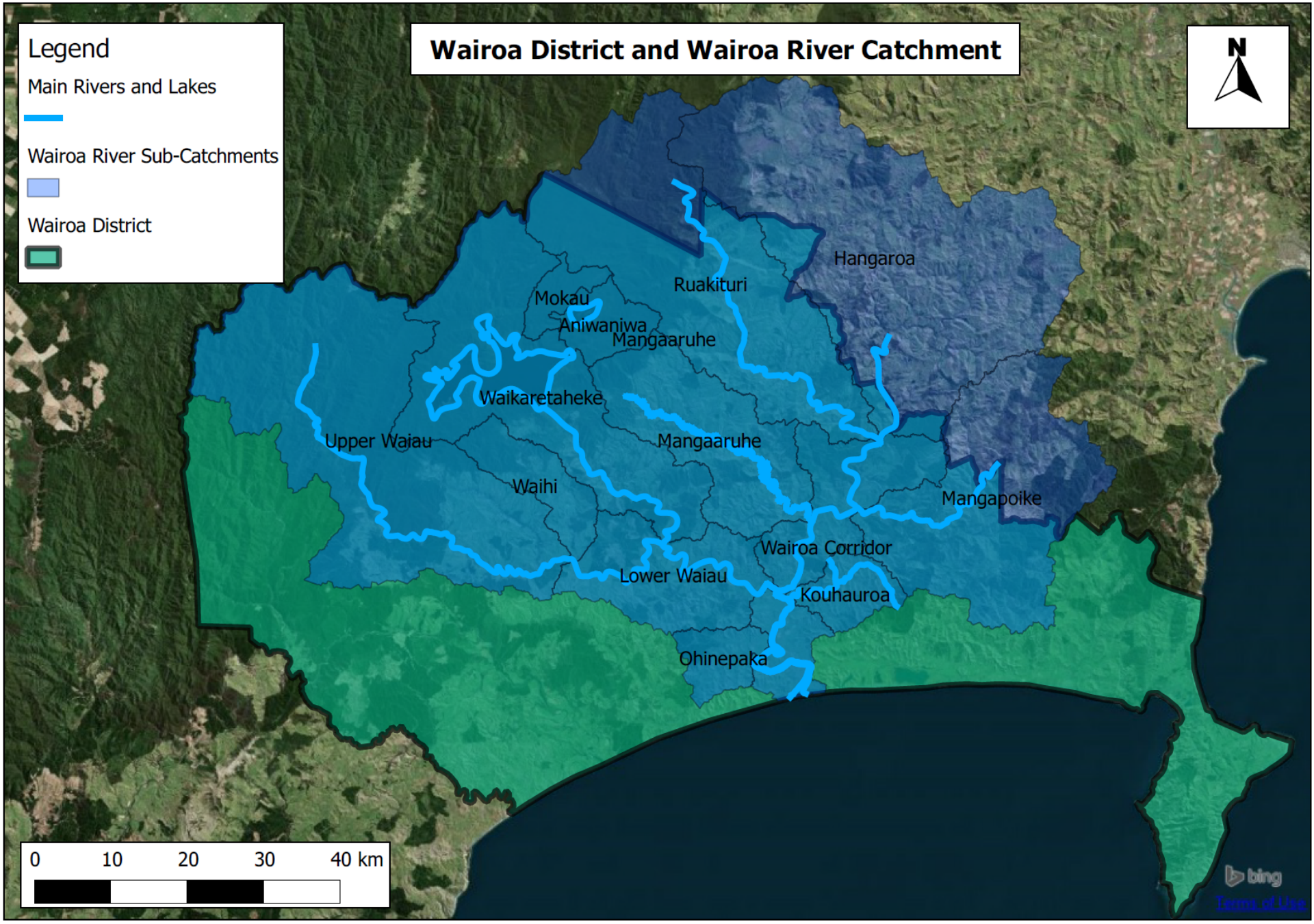
HOW DO WE RELATE TO / INCLUDE THE CATCHMENT

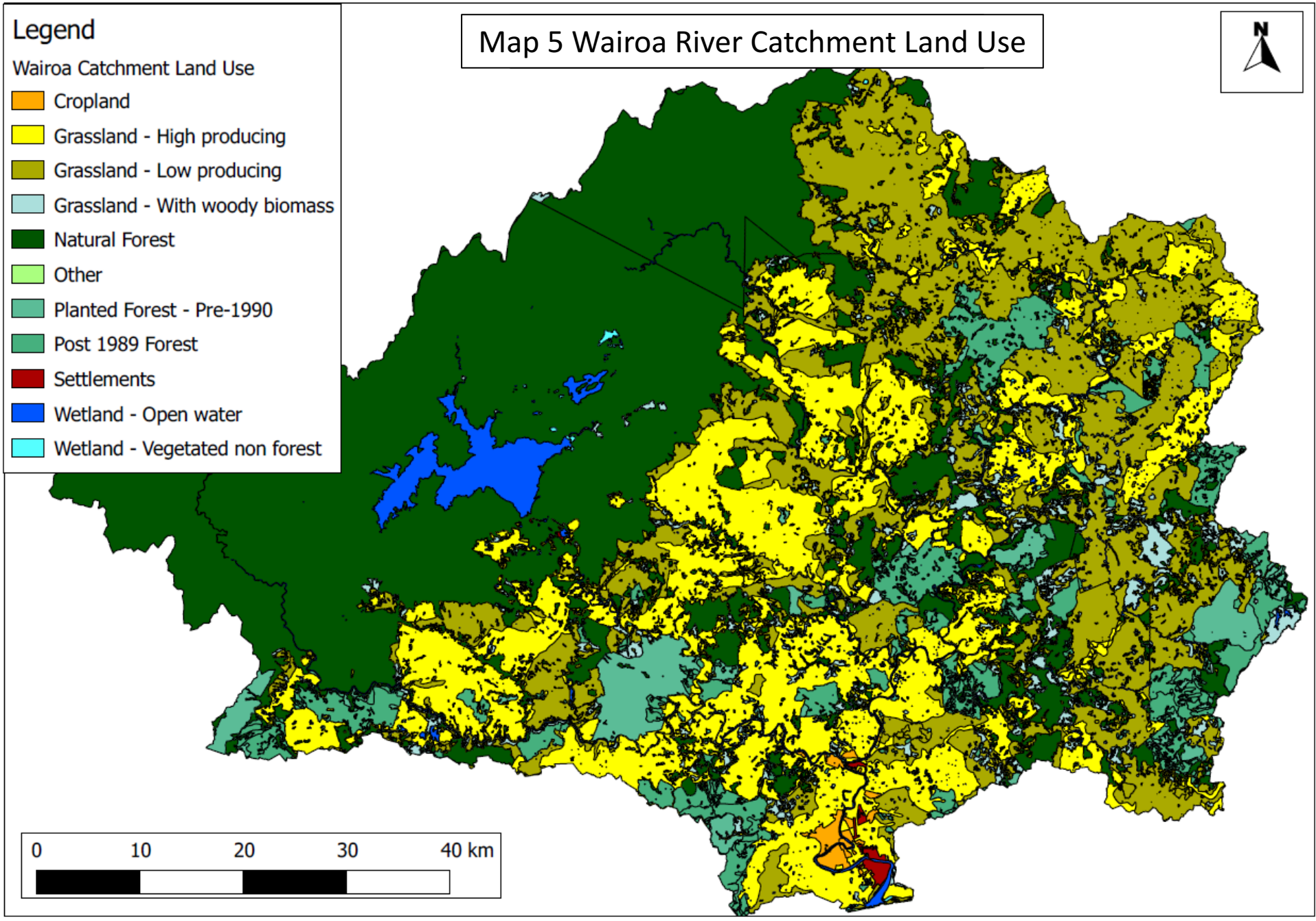
Is clear the community want river water quality improved

Clear there is limited impact from WWTP discharge

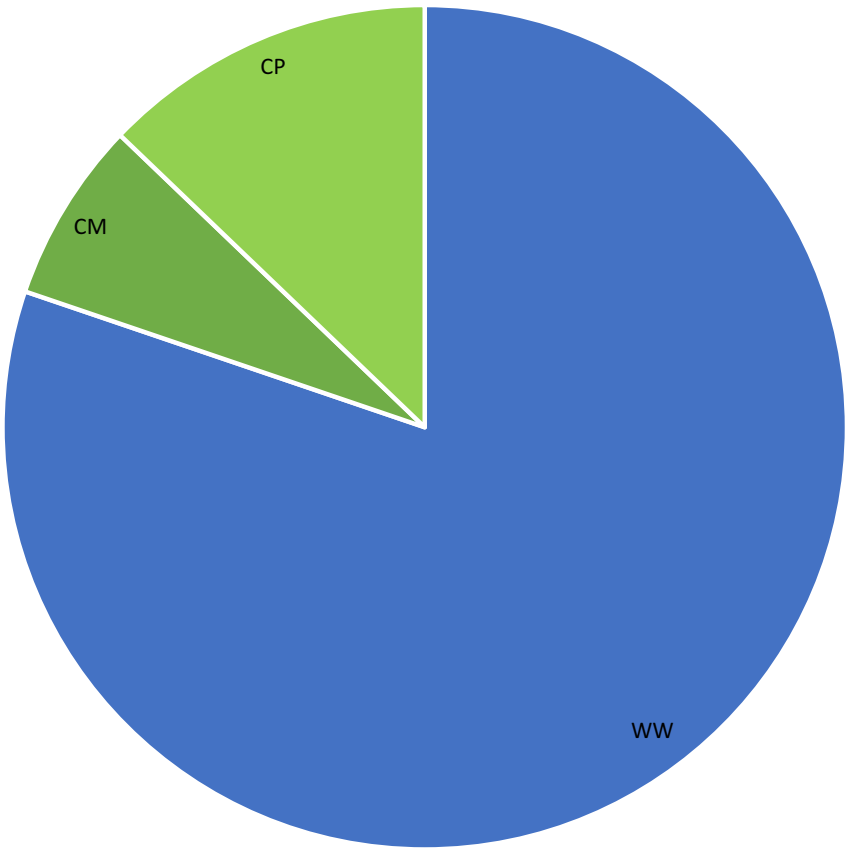
Community associates and connects both

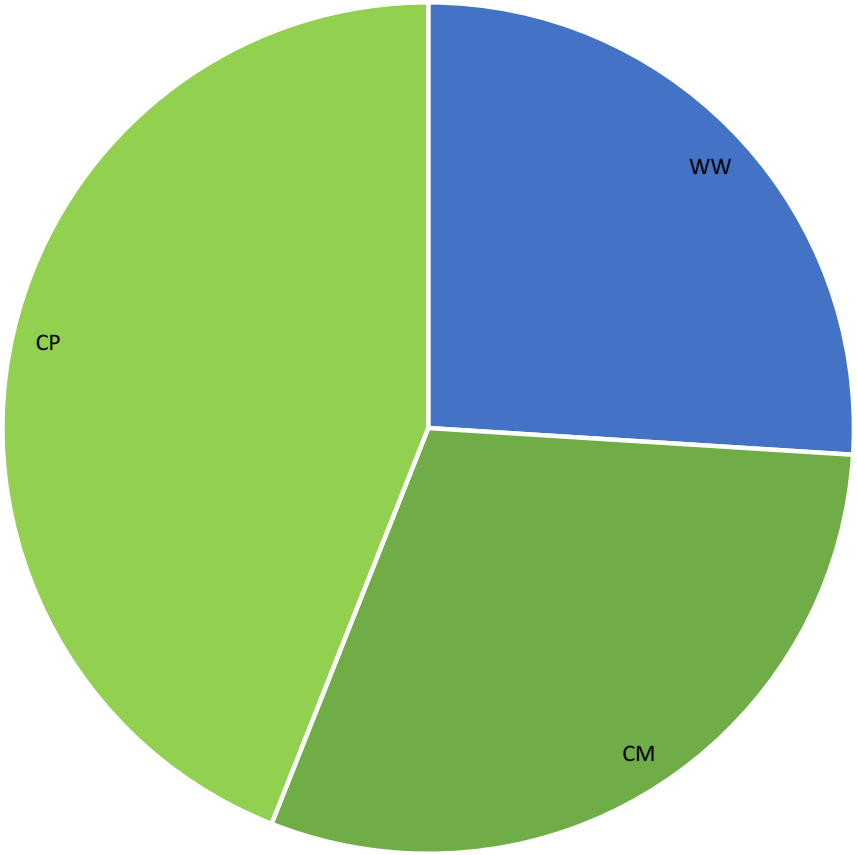


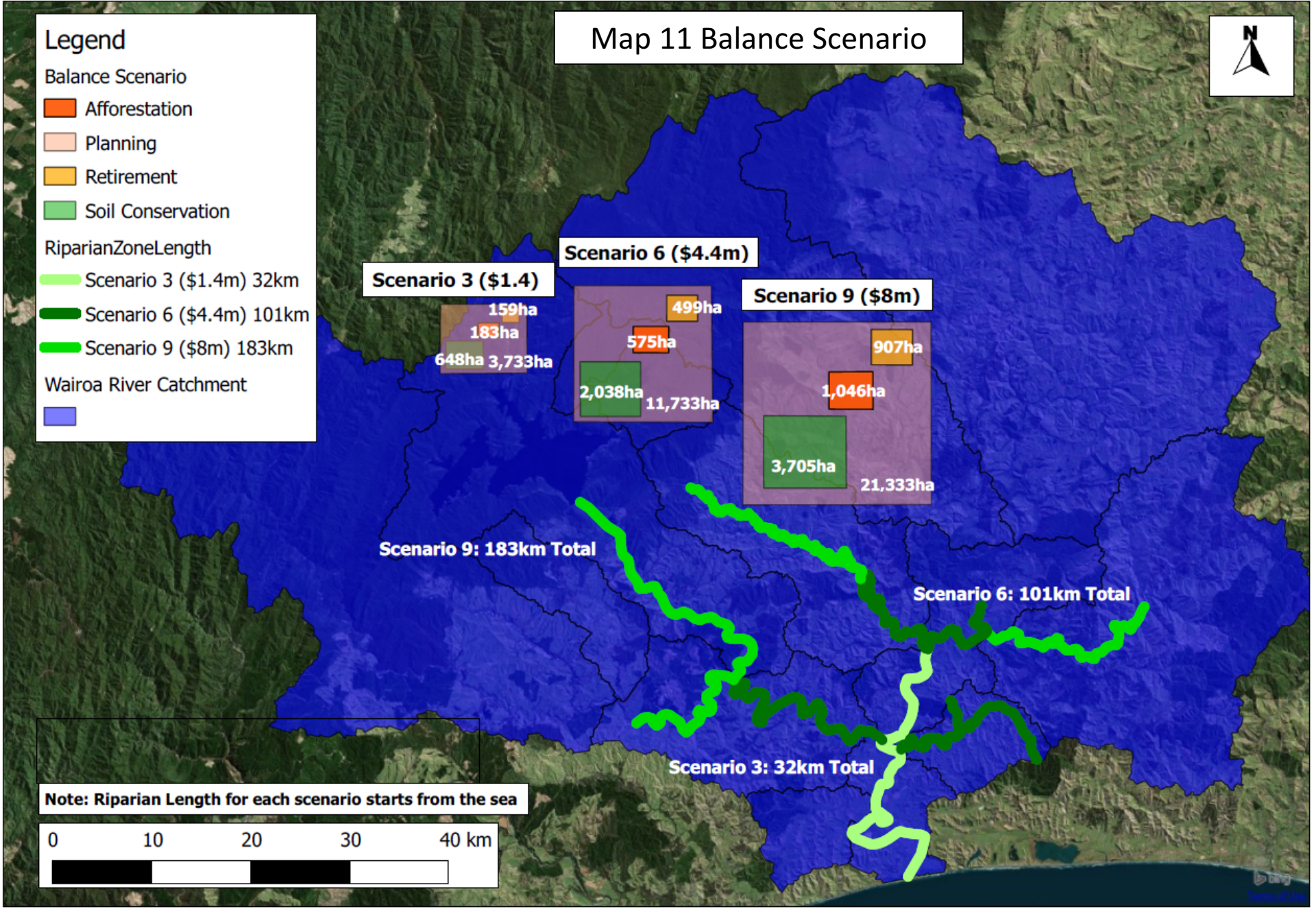

Legend
Main Rivers and Lakes
Wairoa River Sub-Catchments
Wairoa District
Wairoa District and Wairoa River Catchment
N
Hangaroa
Ruakituri
Mokau
Aniwaniwa
Mangaaruhe
Waikaretaheke
Upper Waiau
Mangaaruhe
Waihi
Mangapoike
Wairoa Corridor
Lower Waiau
Kouhauroa
Ohinepaka
0
10
20
30
40 km
bing
Terms of Use


Legend
Wairoa Catchment Land Use
Cropland
Grassland - High producing
Grassland - Low producing
Grassland - With woody biomass
Natural Forest
Other
Planted Forest - Pre-1990
Post 1989 Forest
Settlements
Wetland - Open water
Wetland - Vegetated non forest
Map 5 Wairoa River Catchment Land Use
N
0
10
20
30
40 km

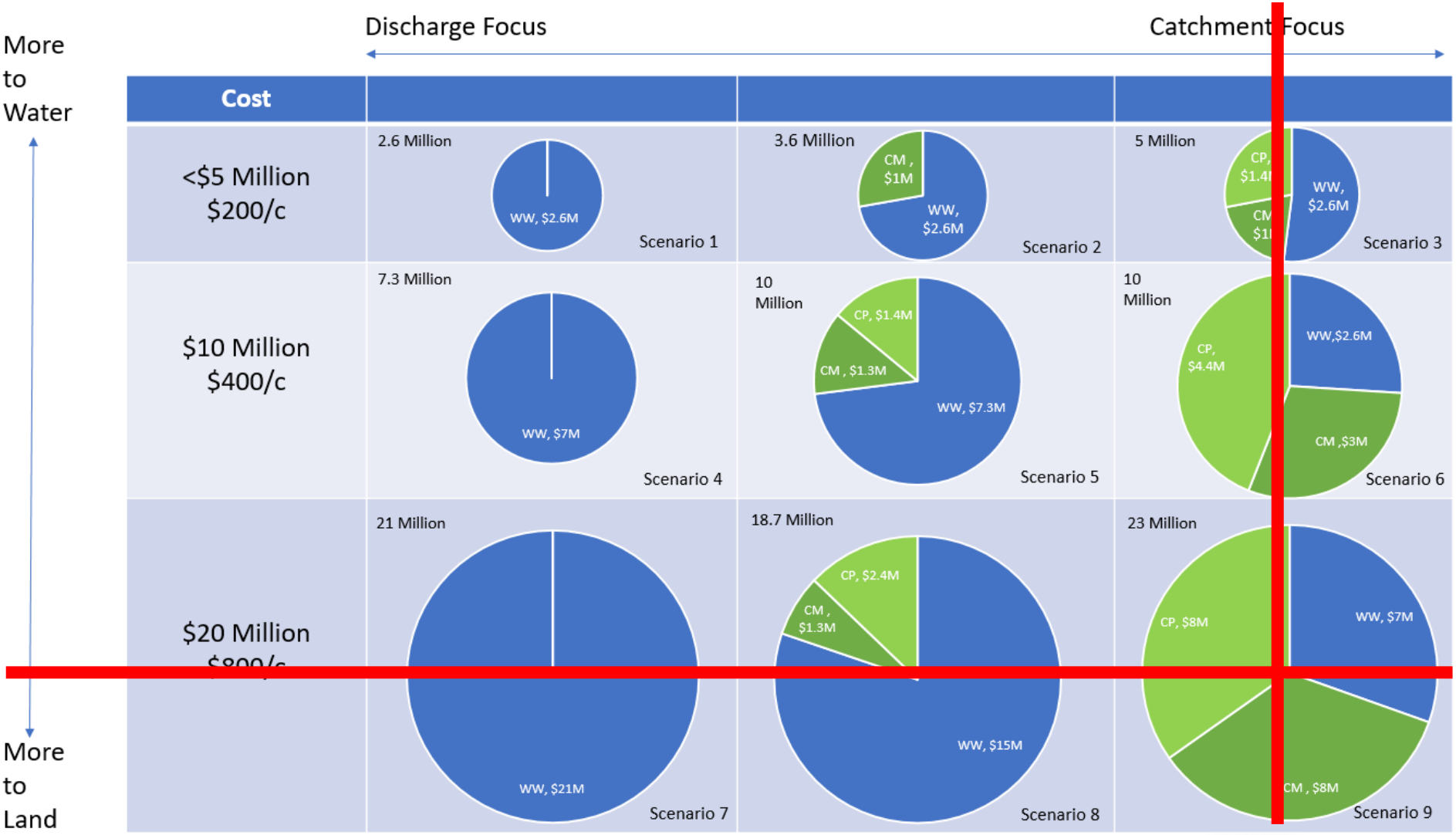
WW AND CATCHMENT SCENARIOS



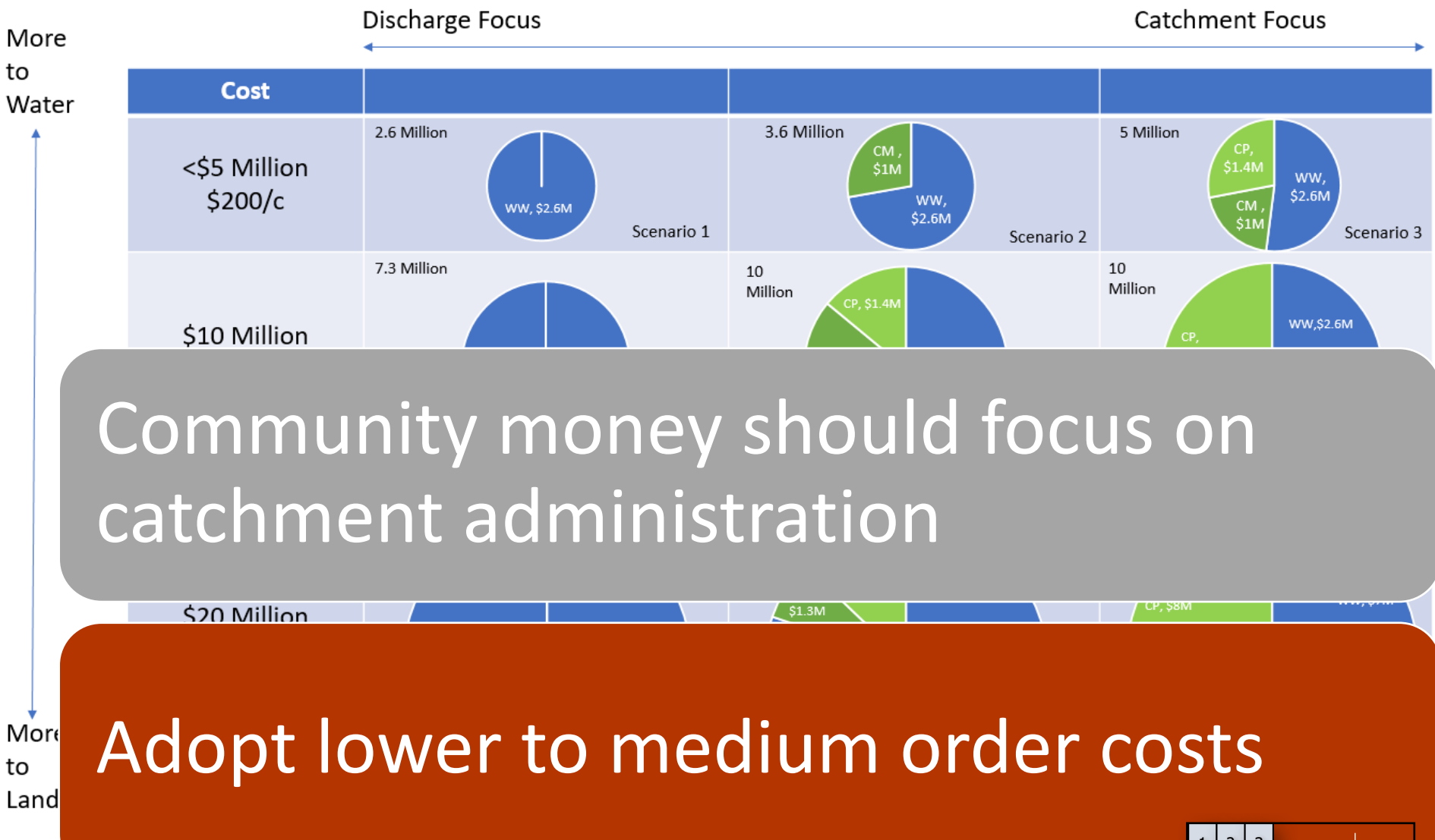



Map 11 Balance Scenario
Legend
Balance Scenario
Afforestation
Planning
Retirement
Soil Conservation
RiparianZoneLength
Scenario 3 ($1.4m) 32km
Scenario 6 ($4.4m) 101km
Scenario 9 ($8m) 183km
Wairoa River Catchment
N
Scenario 3 ($1.4)
159ha
183ha
648ha
3,733ha
Scenario 6 ($4.4m)
499ha
575ha
2,038ha
11,733ha
Scenario 9 ($8m)
907ha
1,046ha
3,705ha
21,333ha
Scenario 9: 183km Total
Scenario 6: 101km Total
Scenario 3: 32km Total
Note: Riparian Length for each scenario starts from the sea
0
10
20
30
40 km

SCENARIOS TO PURSUE



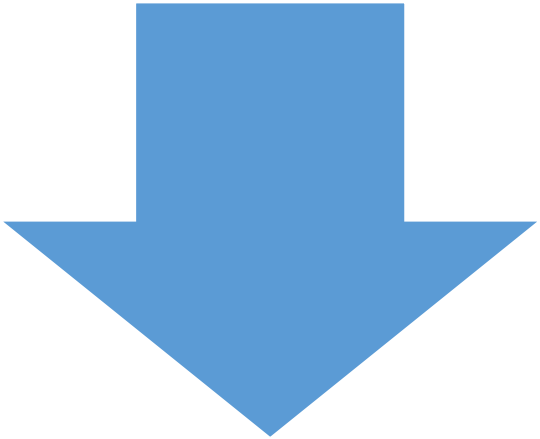
WHAT SCENARIOS ARE RELEVANT



Community money should focus on catchment administration

Adopt lower to medium order costs

KEY THINGS TO CONSIDER



Does more in the river from the WWTP = more effort in the catchment?

- Does nothing from the WWTP = Council does nothing in the catchment

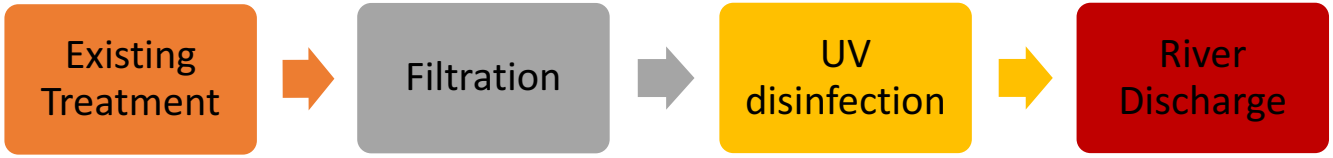
Council will ultimately need to decide on the level of investment in the river

UPDATE ON CULTURAL REPORT

Report Status

WHAT OPTIONS COULD WORK

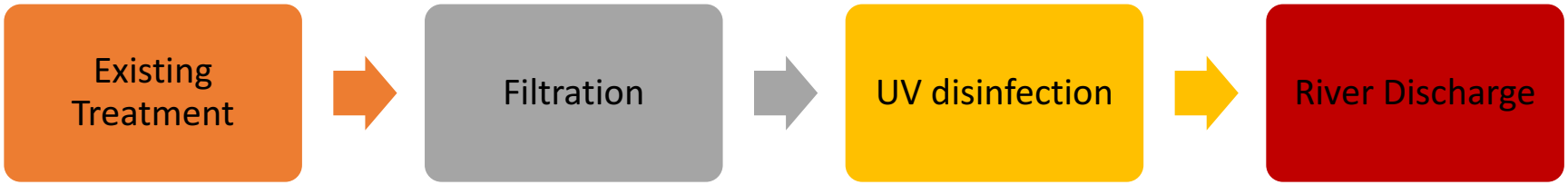
- Option 1a - In River



- Option 1b - In River

- Option 2 - Out of River

OPTION 1a FURTHER TREATMENT AND RIVER DISCHARGE WITHOUT LAND PASSAGE

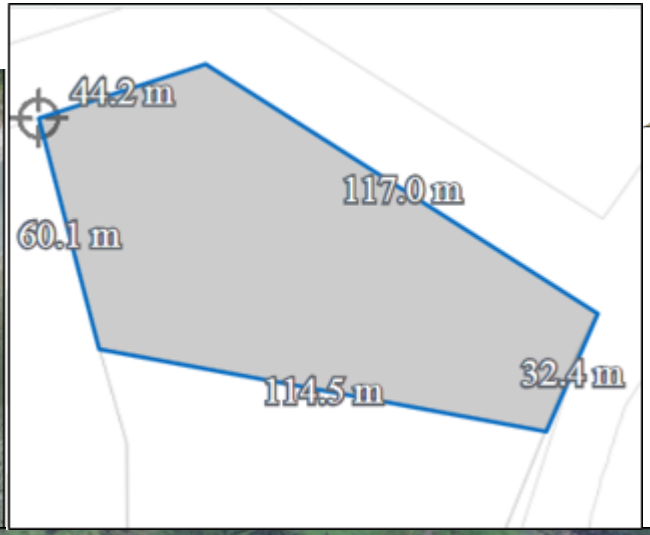


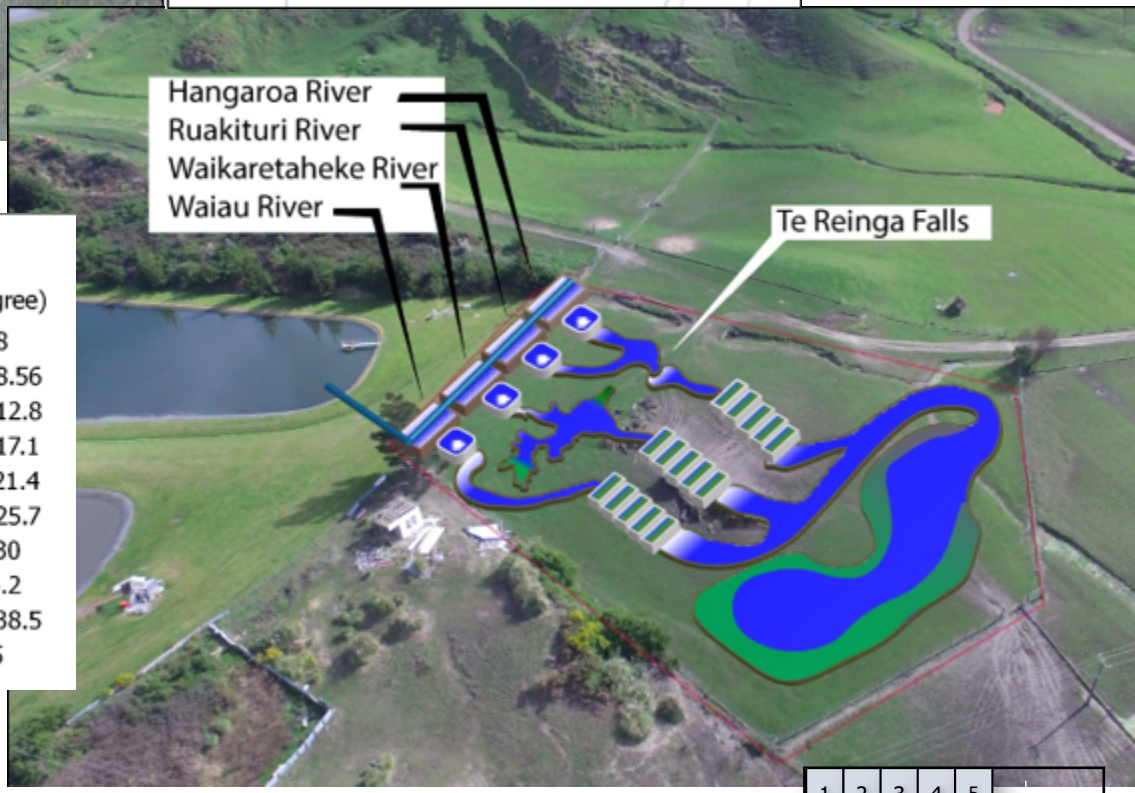
- A new filtration and UV lamp disinfection process will be added to the WWTP outlet prior to the pipeline going down to Fitzroy Street and out into the estuary via the existing or modified outfall diffuser.
- Design concept and features:
  - Filtration system at WWTP outlet
  - Tank or chamber with several UV light tubes mounted inside
  - Wastewater leaving WWTP flows through filters and UV chamber
  - No land passage elements
  - Discharge into Wairoa estuary via existing or modified outfall and diffuser.

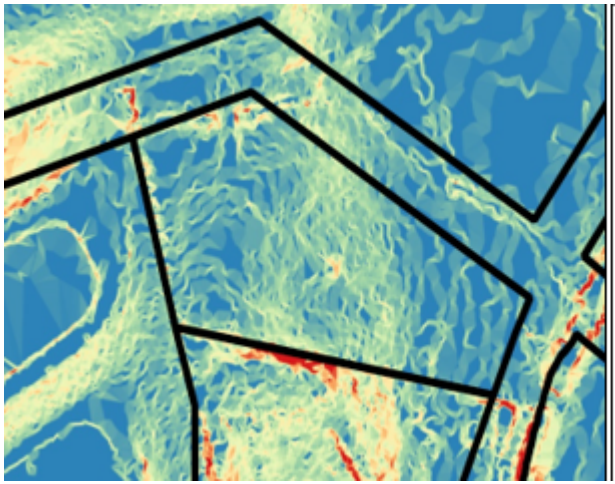
OPTION 1b FURTHER TREATMENT AND LAND PASSAGE BEFORE RIVER DISCHARGE

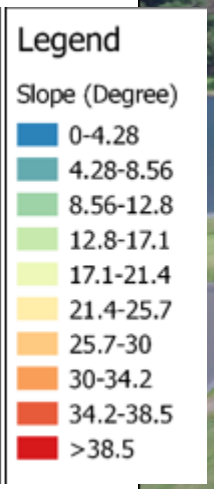
- HRLP systems aim to provide an opportunity for wastewater to pass rapidly over and/or through land on its way to reaching a receiving waterway, whether that be groundwater or surface water.
- Design concept and features:
  - replicate natural systems
  - disperse wastewater as it flows down a slope
  - flow controls for steep slopes (cascading steps or small dykes)
  - vegetated edges and/or swale channels
  - moderate or higher draining soil substrate
  - gravel and boulder substrates
  - often include wetland type environments


1.1.2
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.1.3
1.1.1
1.1.1
6
5
4
2
3


44.2 m
117.0 m
60.1 m
114.5 m
32.4 m

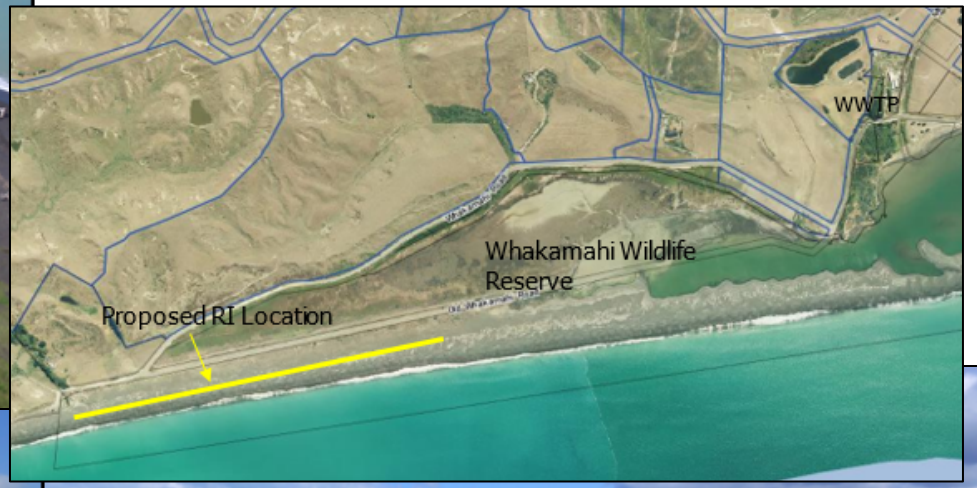

Hangaroa River
Ruakituri River
Waikaretaheke River
Waiau River
Te Reinga Falls




Legend
Slope (Degree)
0-4.28
4.28-8.56
8.56-12.8
12.8-17.1
17.1-21.4
21.4-25.7
25.7-30
30-34.2
34.2-38.5
>38.5

OPTION 2 FURTHER TREATMENT AND RAPID INFILTRATION DRAINING TO OCEAN

- RI systems aim to use well drained soils to rapidly drain wastewater into underlying groundwater bodies.
- Design concept and features:
  - Surface distributors onto shallow basins to impound temporary ponding; or
  - Sub-surface soakage trenches with geotextile or void crate stabilisation.
  - Rapid application rates (200-3,000 mm/d)
  - Minimal soil and plant contact or uptake



1 2 3 4 5

COSTS

Option	Total cost inc. Contingency & Consent		Annual Increase to Rates ($/yr)		Weekly Increase to Rates ($/wk)	
	Lower Range	Upper Range	Lower Range	Upper Range	Lower Range	Upper Range
1a. Status Quo +UV	$2,455,000	$3,260,000	$98	$131	$1.89	$2.51
1b. HRLP + River Discharge	$2,655,000	$5,560,000	$106	$223	$2.04	$4.28
2. Rapid Infiltration	$3,900,000	$6,840,000	$156	$274	$3.00	$5.27

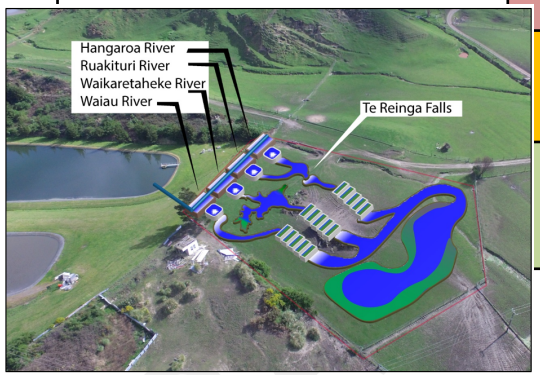
OPTION SUMMARY

Consideration	Option 1a: Status Quo + UV	Option 1b: HRLP + River Discharge	Option 2: RI
Discharge Environment	River	Land passage then River	Sand dunes then sea
Technical -Design Practi		Moderate	
Social/Recreational acceptance		Some	
Environmental – impact			
Environmental – river mitigation needed	Highly recommended		
Cultural – acceptability	Low		
	Moderate		
	Low $2.5 M – $3.3 M $98.30 – $130.53	Moderate $2.7 M – $ 5.6 M $106.31 – $222.63	

- **$2.5 -3.3 M**
  100 – 130/yr

- **$3.9 – 6.8 M**
  $150 - 275

$2.7 – 5.6 M
105 – 220/yr



WHATS THE SOLUTION - PACKAGE?

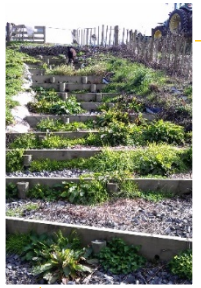
LETS BE BOLD

HRLP as part of a package

A) Provide for land passage	Discharge can pass through land
B) Highlight river health	How do we use the process and structure to draw attention to the river
C) The HRLP is a small part of a bigger picture	Wastewater management and the immediate consent is a small part of the bigger picture

HRLP – WHAT OTHERS ARE DOING

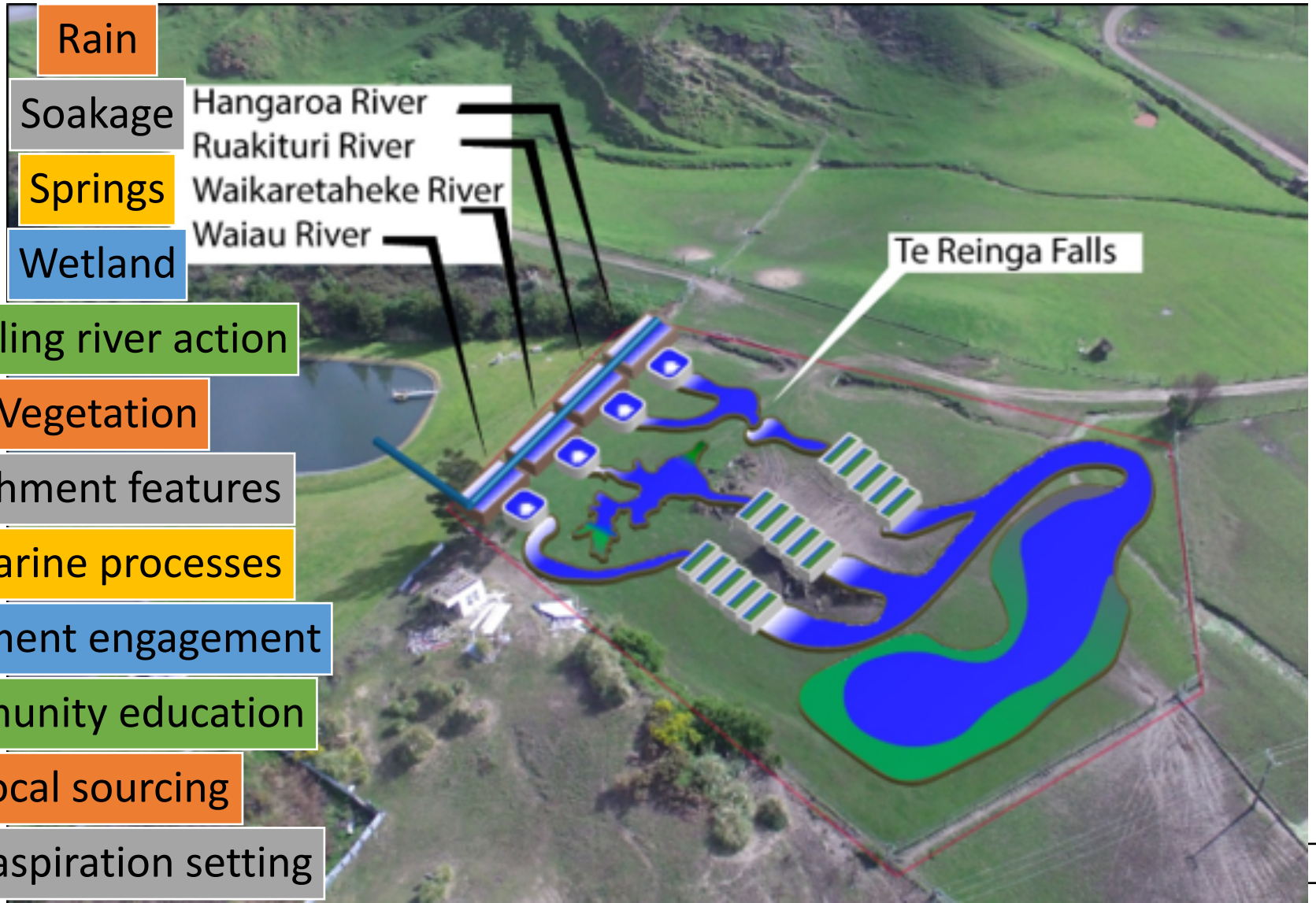
Hastings



Piopio

Rotorua - Short video

HRLP – WHAT COULD IT LOOK LIKE



HRLP – LAND PASSAGE FOR WASTEWATER

Does it observe tikanga?

- Aspects based on what are typical biotransformation and mauri revitalisation processes.

What changes are needed?

- Make bigger, how much bigger, what tweaks to design.

Is it tokenism?

- If so what part? How does this proposal differ from irrigation where drainage occurs?

HRLP – DRAW ATTENTION TO RIVER HEALTH

Can it be used to draw attention to the river.

Is it a starting point to address river health

Can it be used to educate and engage the community

How do we deal with the paradox of opposing mauri transformations

HRLP – PART OF A BIGGER PACKAGE

Consent BPO – only part of the package

Package is

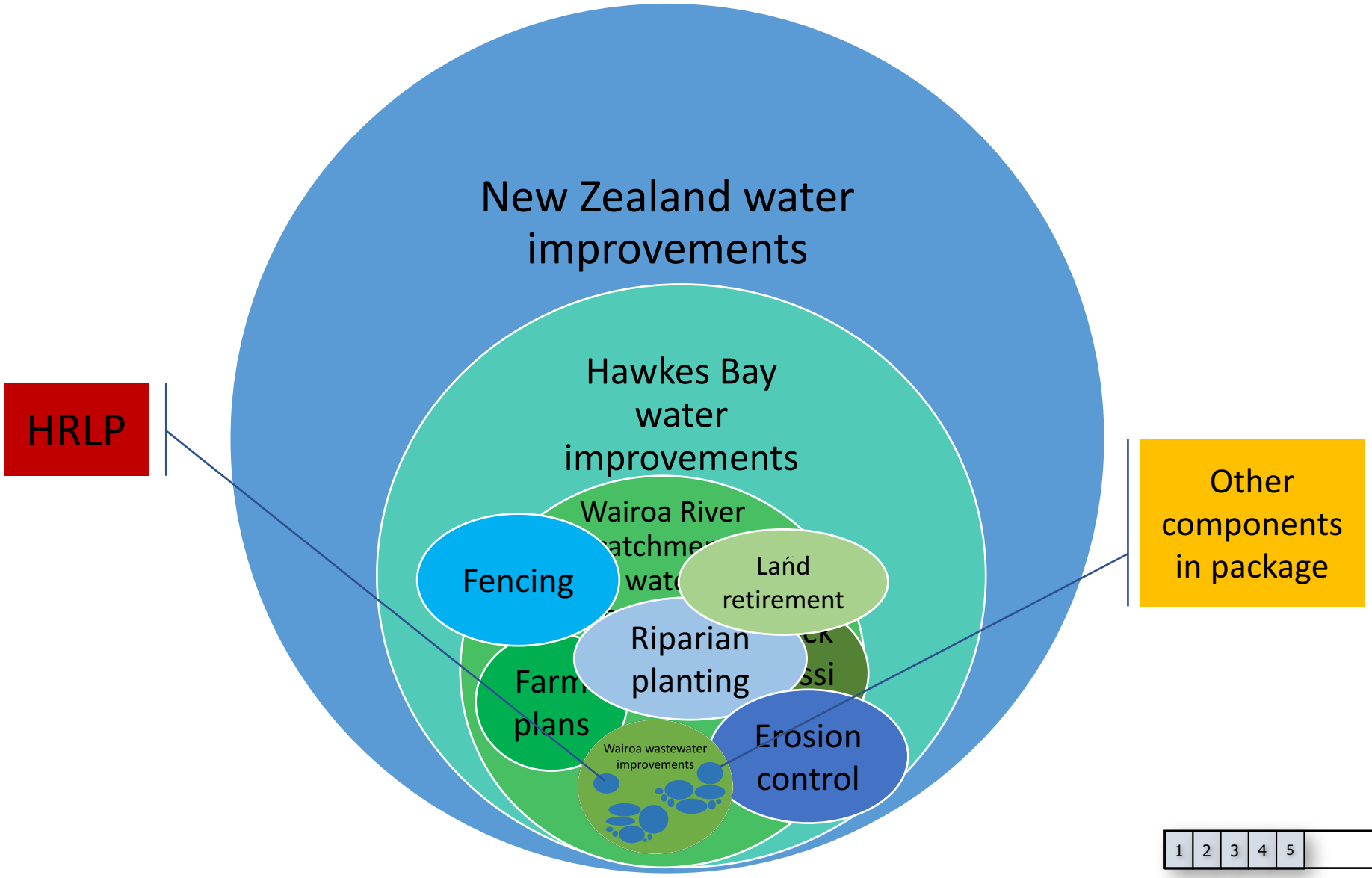
- Basic affordable changes
- Enhance over time with irriga
  - Trial
  - New land areas – farm, landfill
- Reduce I and I – upgrades and renewals
- Cease pump station overflows
- Show leadership and get community involved
- Education

Greater opportunity can be achieved than could be achieved with consent alone

Promote water quality in general

- Provide for and seed catchment discussions
- Funding
- Be a leader

THE PACKAGE – IN CONTEXT



THE PACKAGE – WASTEWATER COMPONENT

WASTEWATER PACKAGE

Progress

2 years (2019)

Decide Options

HRLP	Construction	Use
RI	Construction	Use

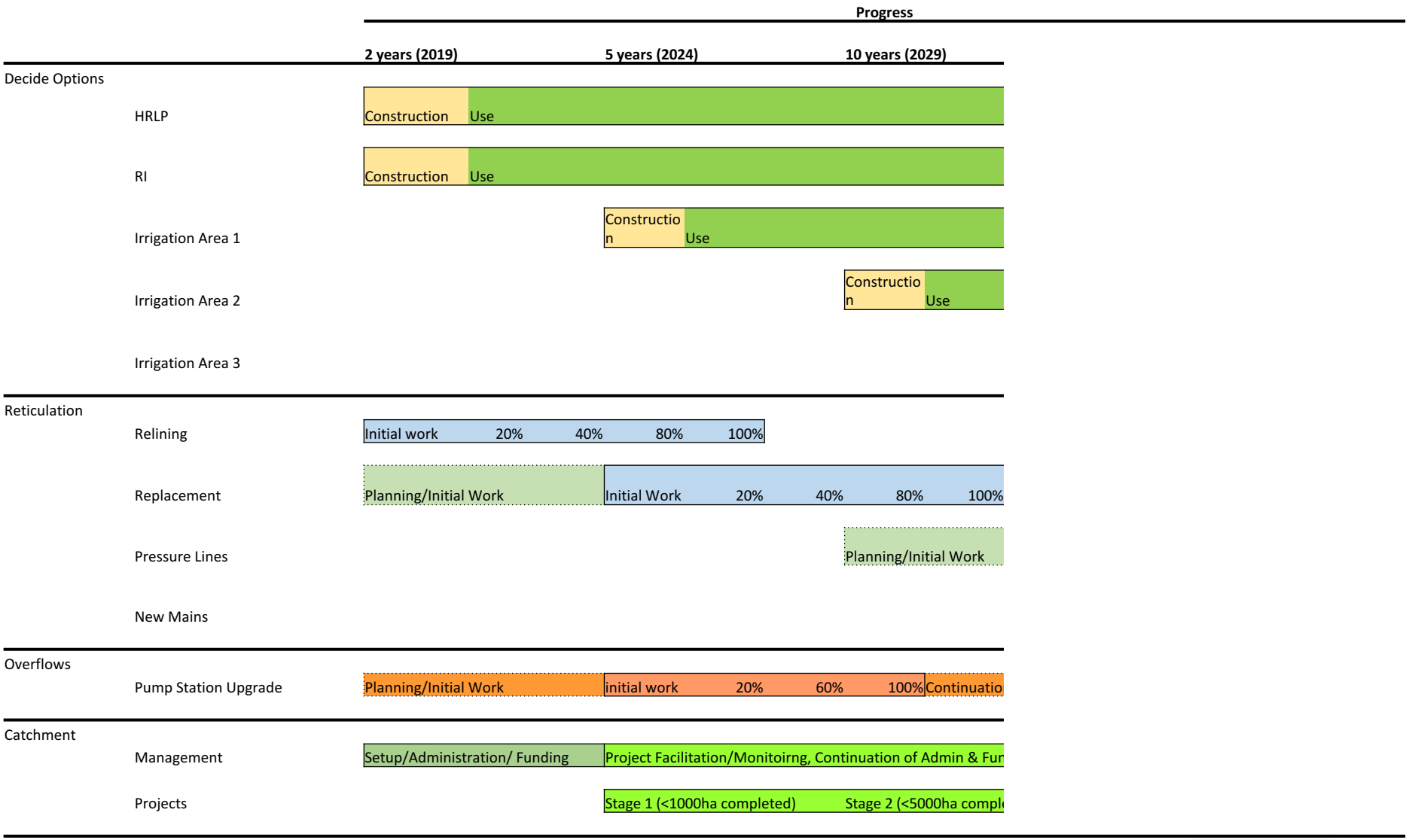
WASTEWATER PACKAGE

		Progress
		2 years (2019)
Decide Options		
	HRLP	Construction / Use
	RI	Construction / Use
	Irrigation Area 1	
	Irrigation Area 2	
	Irrigation Area 3	
Reticulation		
	Relining	Initial work 20%
	Replacement	Planning/Initial Work
	Pressure Lines	
	New Mains	
Overflows		
	Pump Station Upgrade	Planning/Initial Work
Catchment		
	Management	Setup/Administration/ Fundin
	Projects	

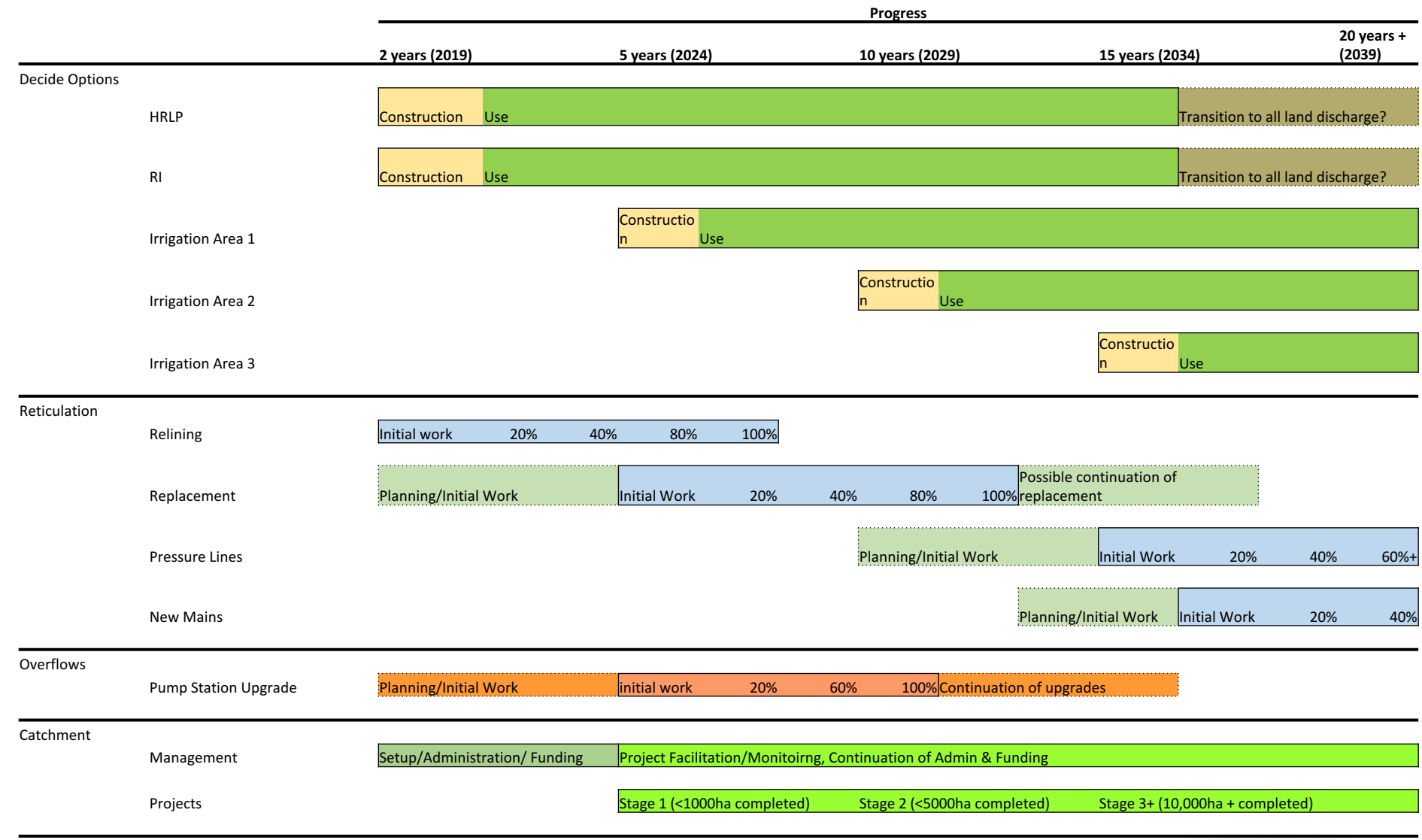
WASTEWATER PACKAGE

		Progress	
		2 years (2019)	5 years (2024)
Decide Options			
	HRLP	Construction	Use
	RI	Construction	Use
	Irrigation Area 1		Construction / Use
	Irrigation Area 2		
	Irrigation Area 3		
Reticulation			
	Relining	Initial work 20% 40%	80% 100%
	Replacement	Planning/Initial Work	Initial Work 20%
	Pressure Lines		
	New Mains		
Overflows			
	Pump Station Upgrade	Planning/Initial Work	initial work 20%
Catchment			
	Management	Setup/Administration/ Funding	Project Facilitation/Monitoirn
	Projects		Stage 1 (<1000ha completed)

WASTEWATER PACKAGE



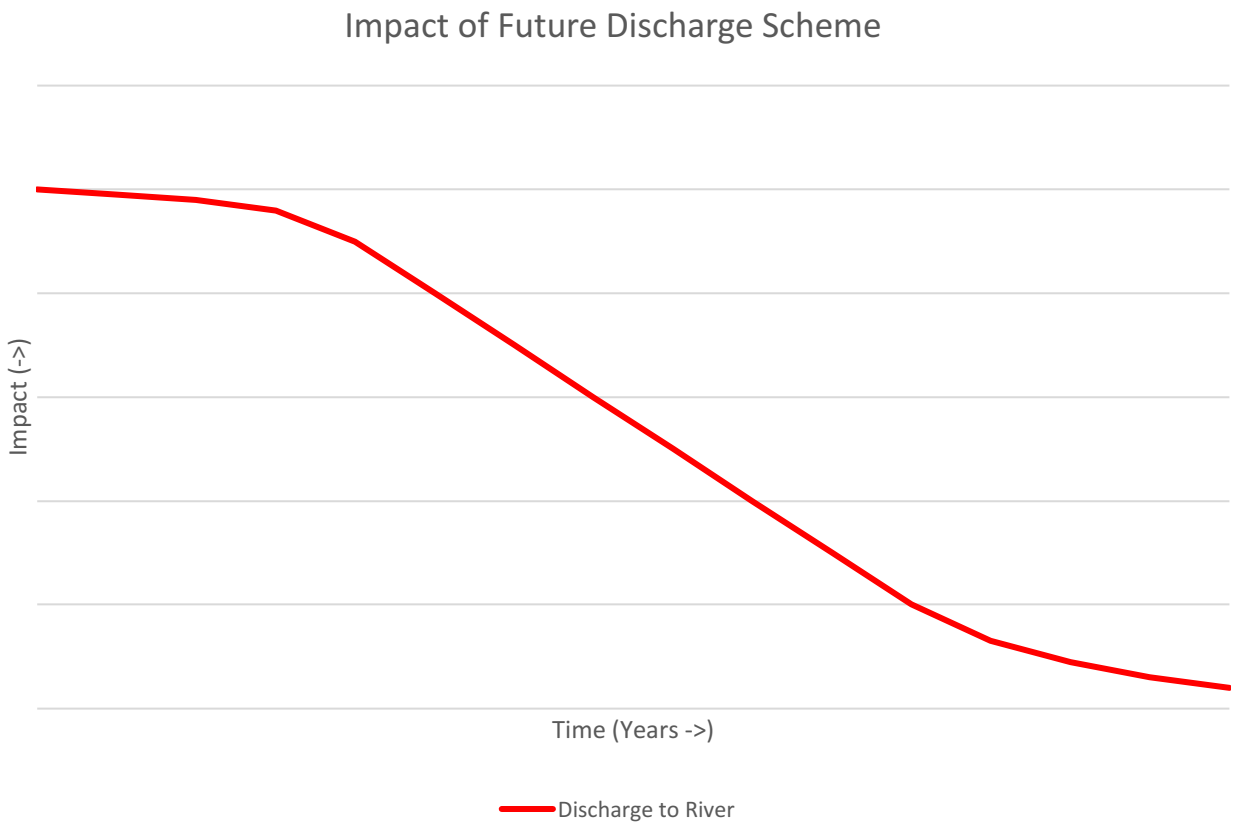
WASTEWATER PACKAGE



WASTEWATER PACKAGE

Impact of future discharge

- Reducing discharge to water
- Increasing discharge to land
- Reducing I&I impact on reticulation



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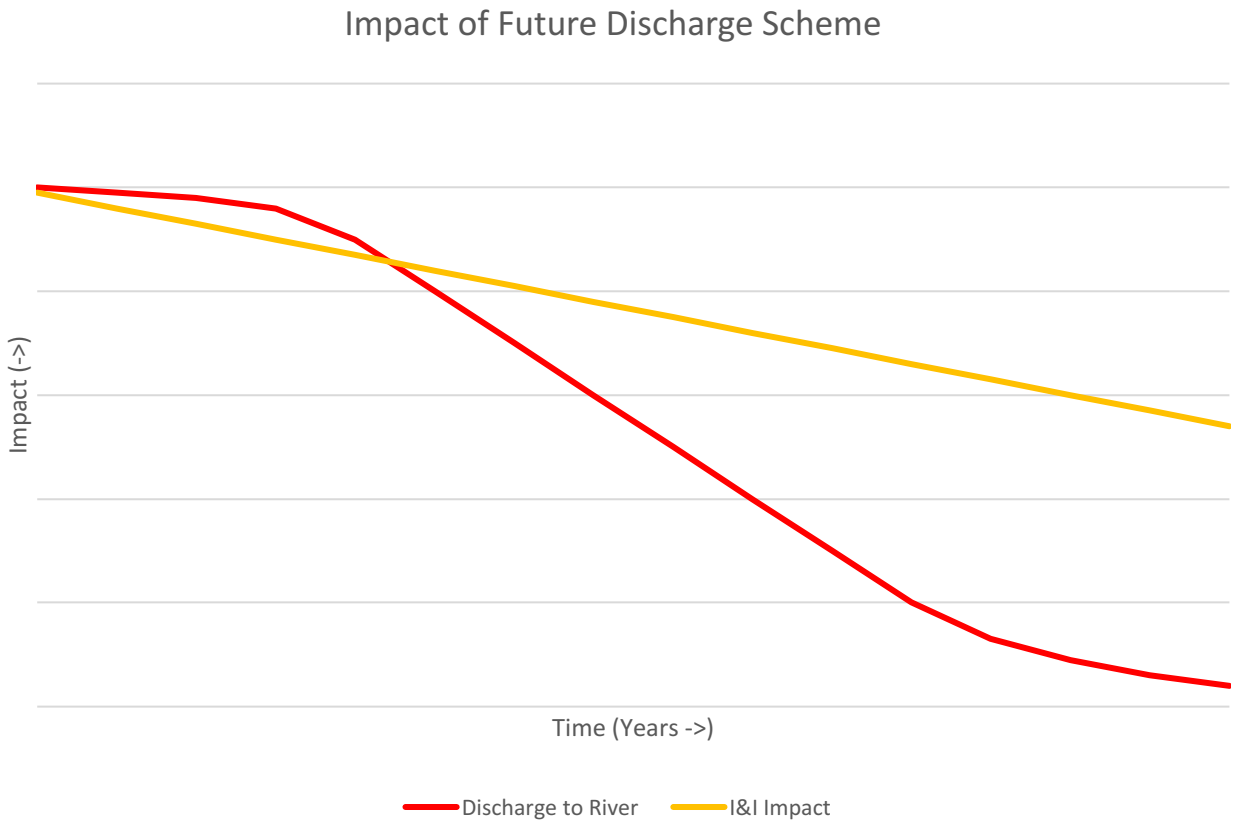

WASTEWATER PACKAGE

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- Increasing discharge to land
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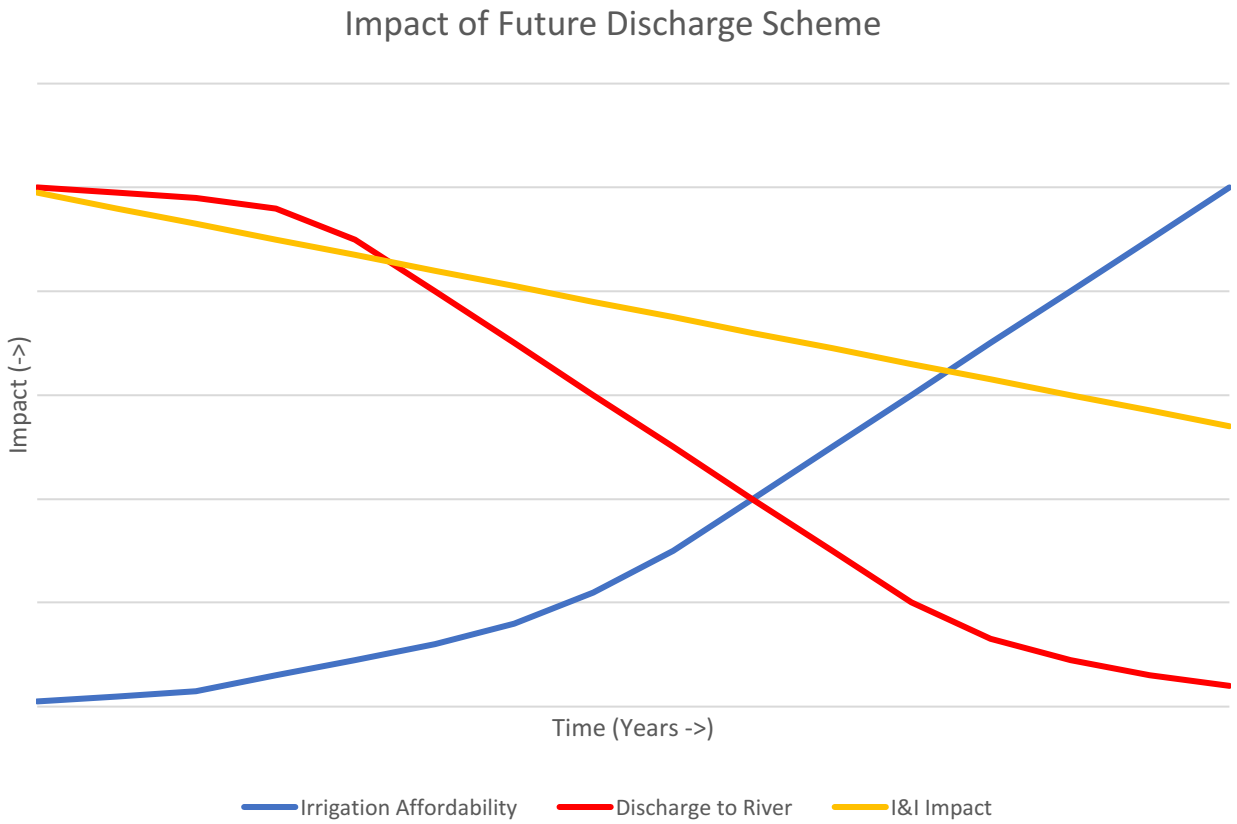
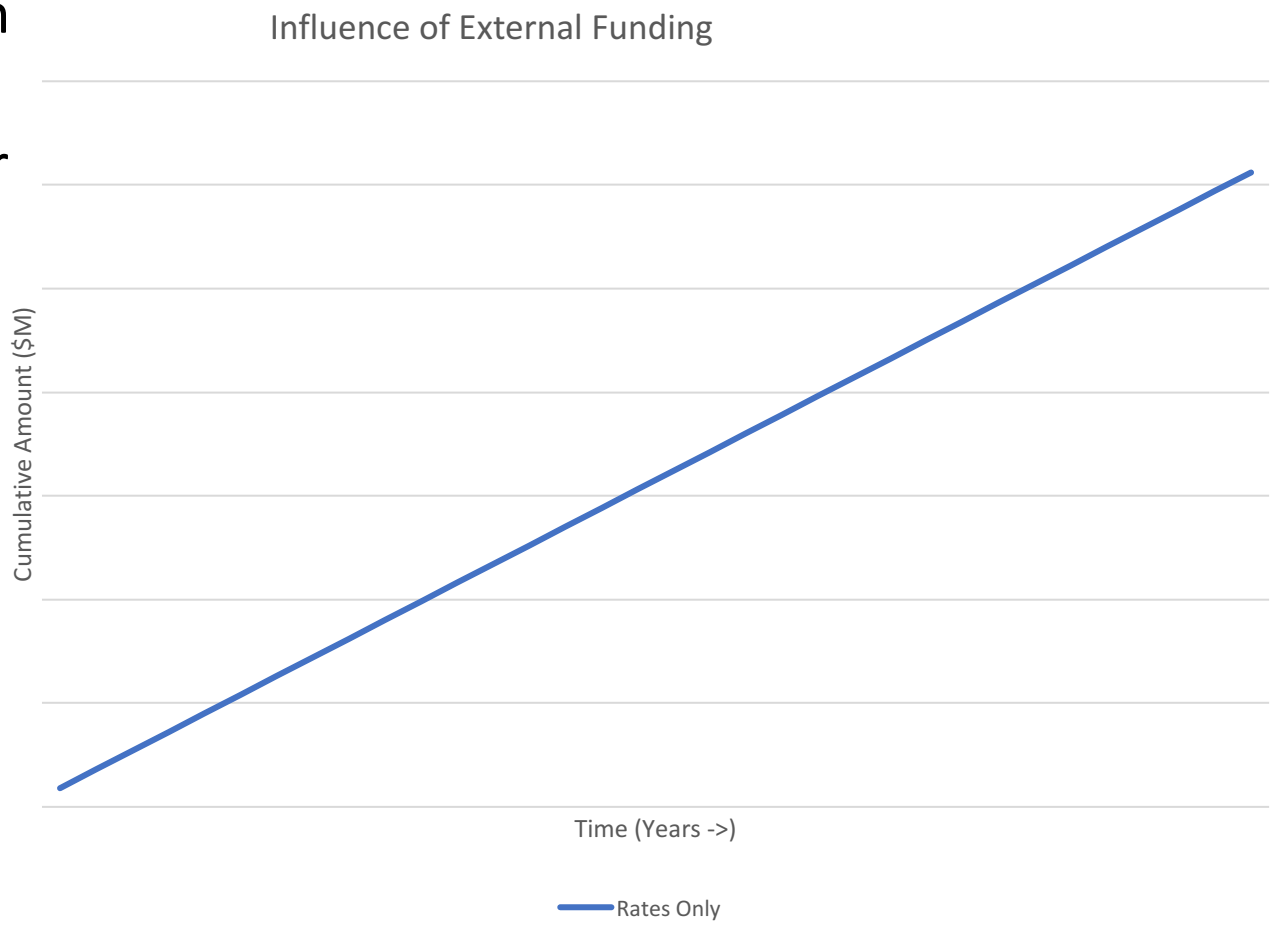


WASTEWATER PACKAGE

Affordability

- Assistance through external funding
- Get to goal quicker
- No discharge to water sooner



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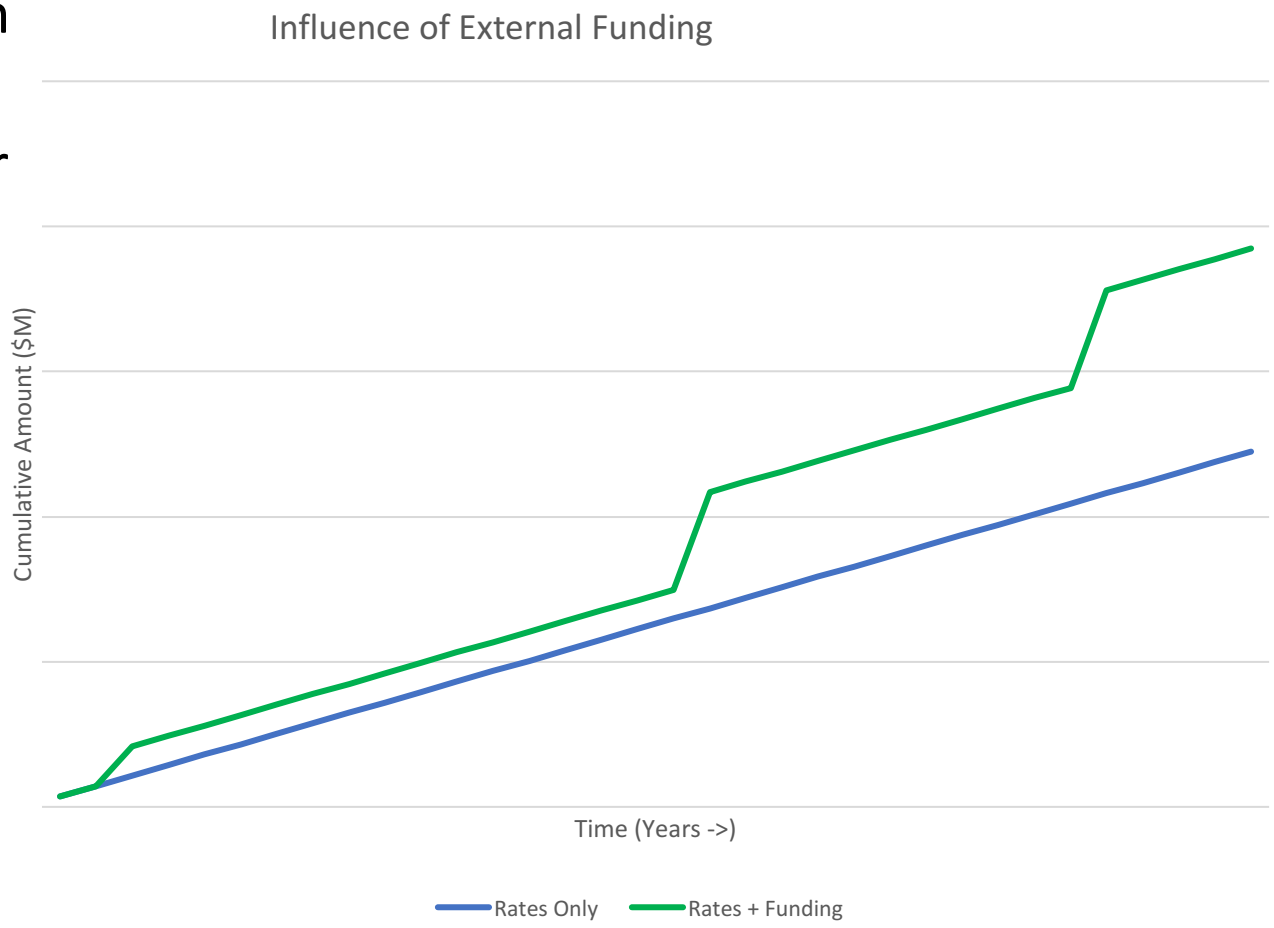

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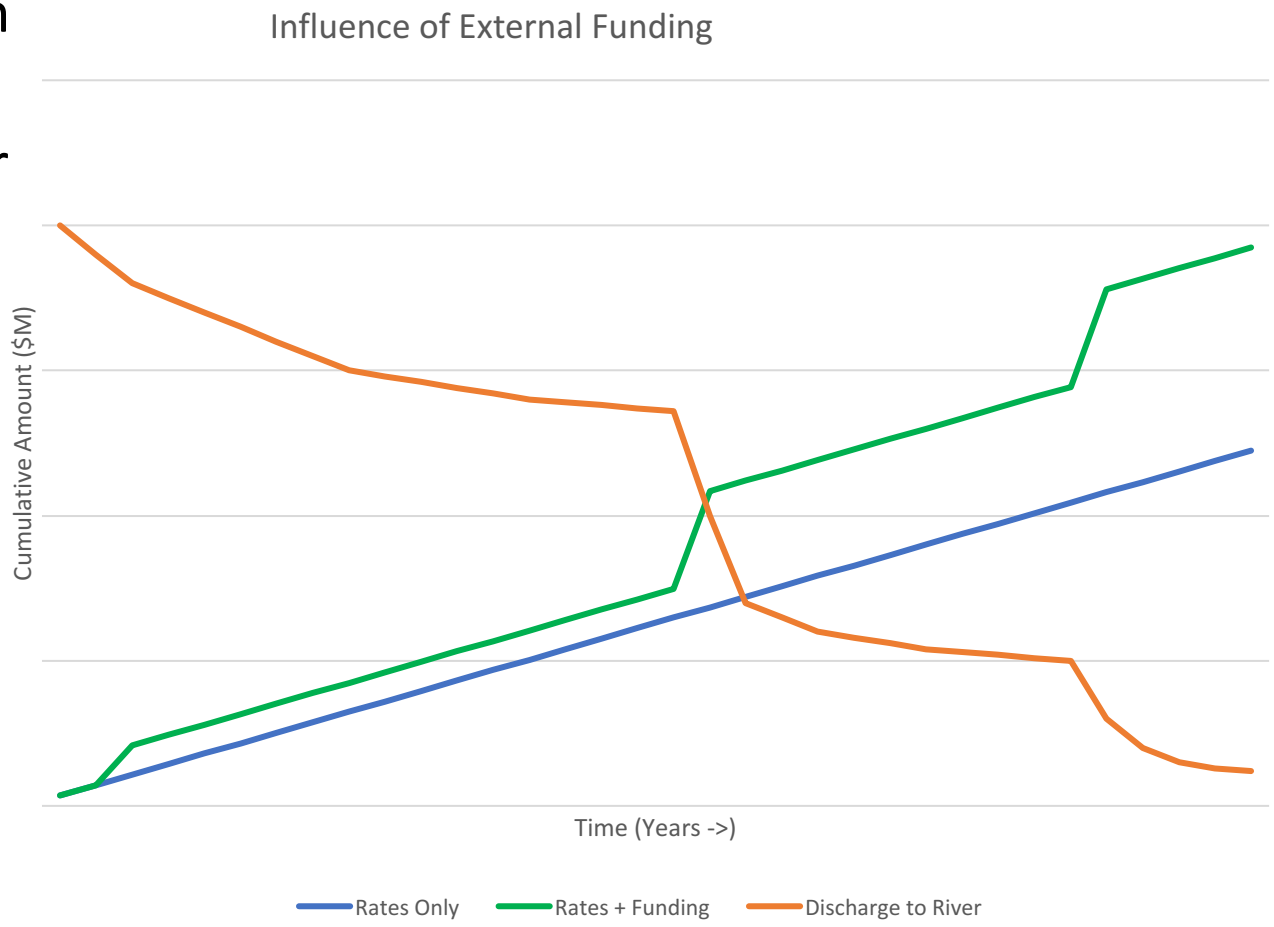
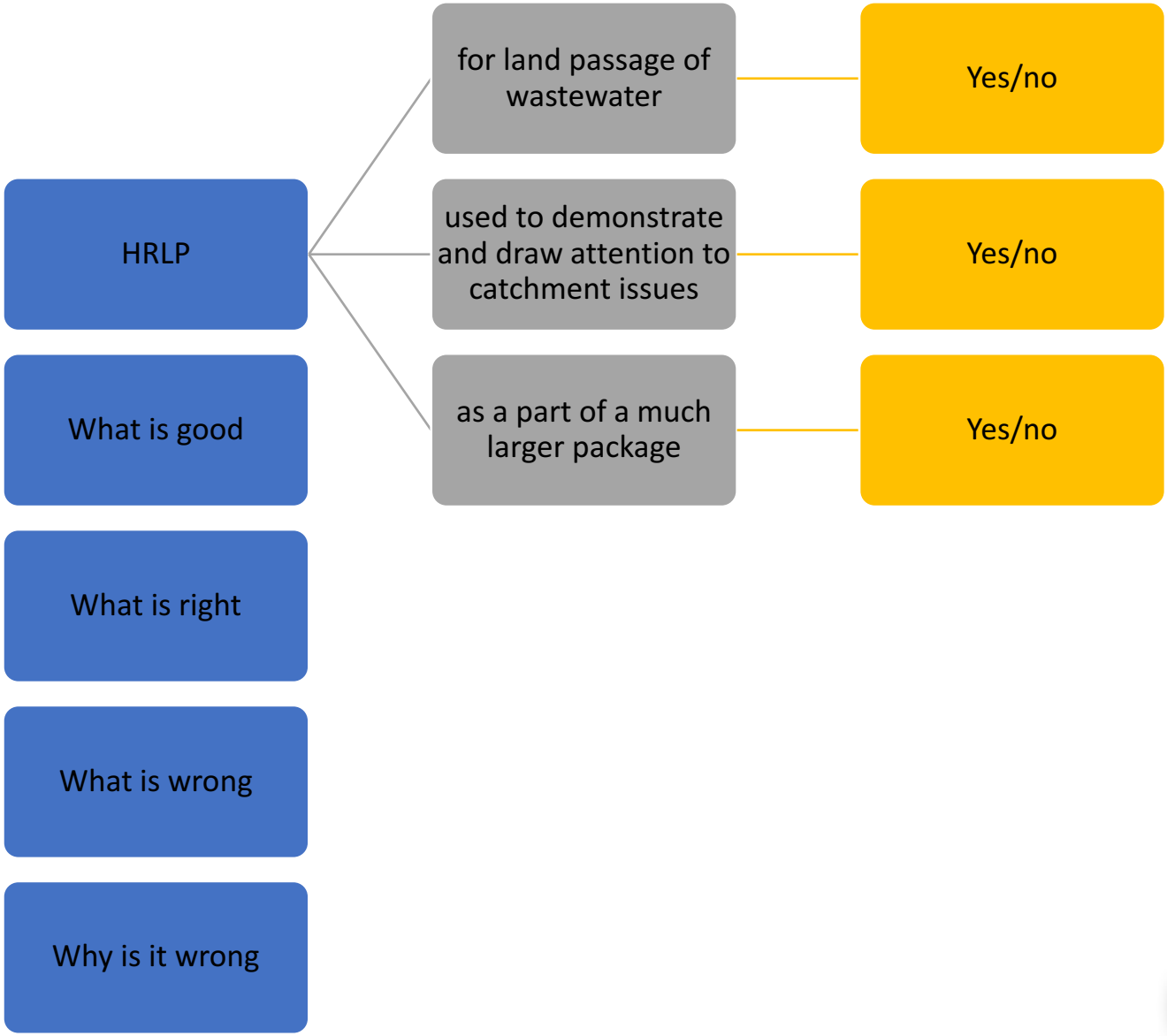


WHAT DO YOU THINK?



ENGAGEMENT PROCESS WITH THE COMMUNITY

Discuss process of looking at options

Discuss process of looking at catchment

Present options

- Status quo to river (Option 1a)
- HRLP to river (Option 1b – or variant of)
- RI to sea (Option 2)
- Irrigation only
- Irrigation and status quo
- Ocean outfall

Us nominate a preference

Have community suggest alternatives

Emphasize there is a package

WHAT ARE THE NEXT STEPS

Enhance options and create variants

Develop linkage to wider issues (bigger picture)

Nominate BPO

Seek views of wider community on BPO

Have Council approve BPO

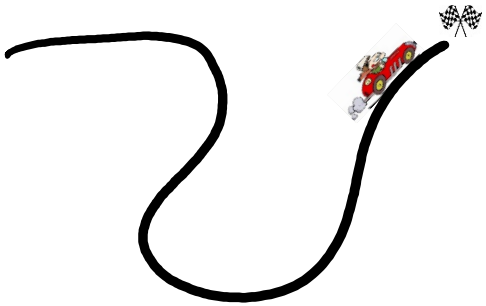
Undertake investigations

Prepare designs

Prepare consent

Consult on consent

Lodge consent



ADMINISTRATION

Catch up of material

Next meeting Focus

Meeting date and time