



Hokitika Wastewater Upgrade Project

**Westland District Council
Oversight Subcommittee meeting**

5 April 2022





Agenda

AGENDA ITEM

Purpose and introduction of options assessment framework

Summary of options development

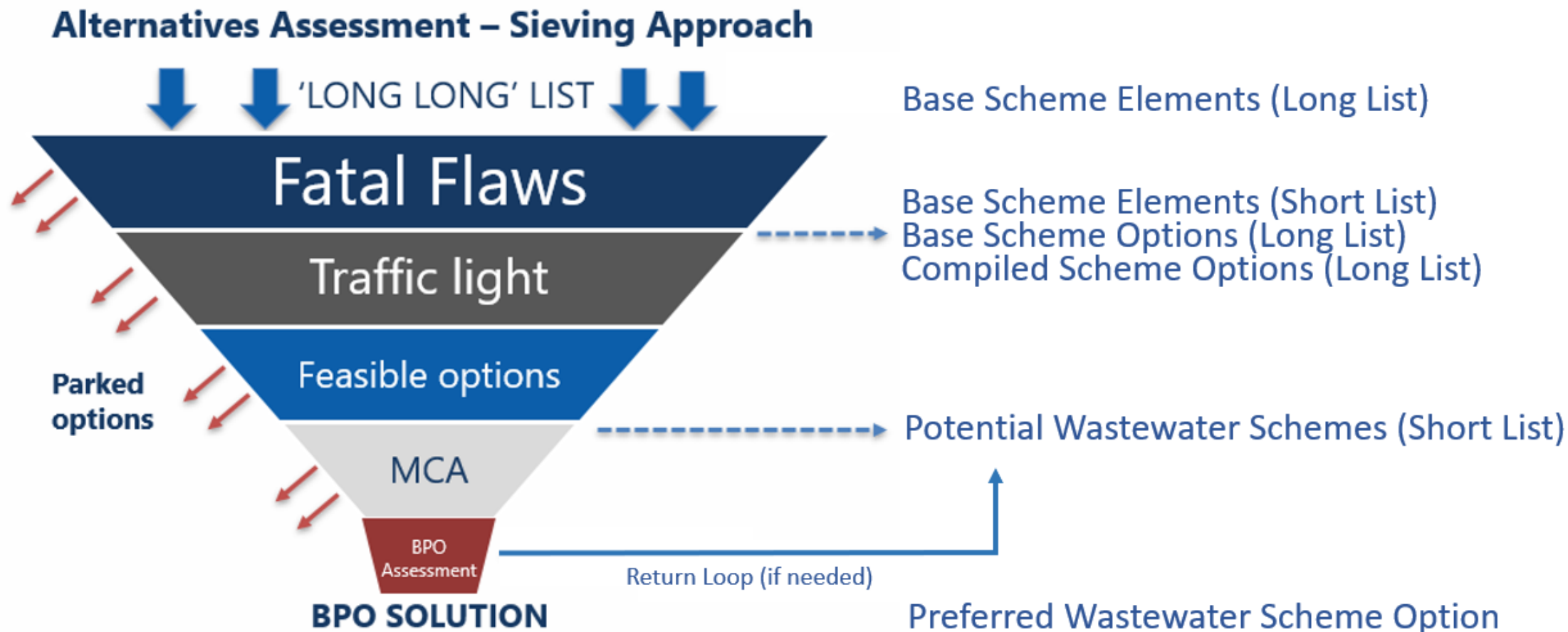
Options assessment process

Assessment criteria

Estimated timeframe of key milestones



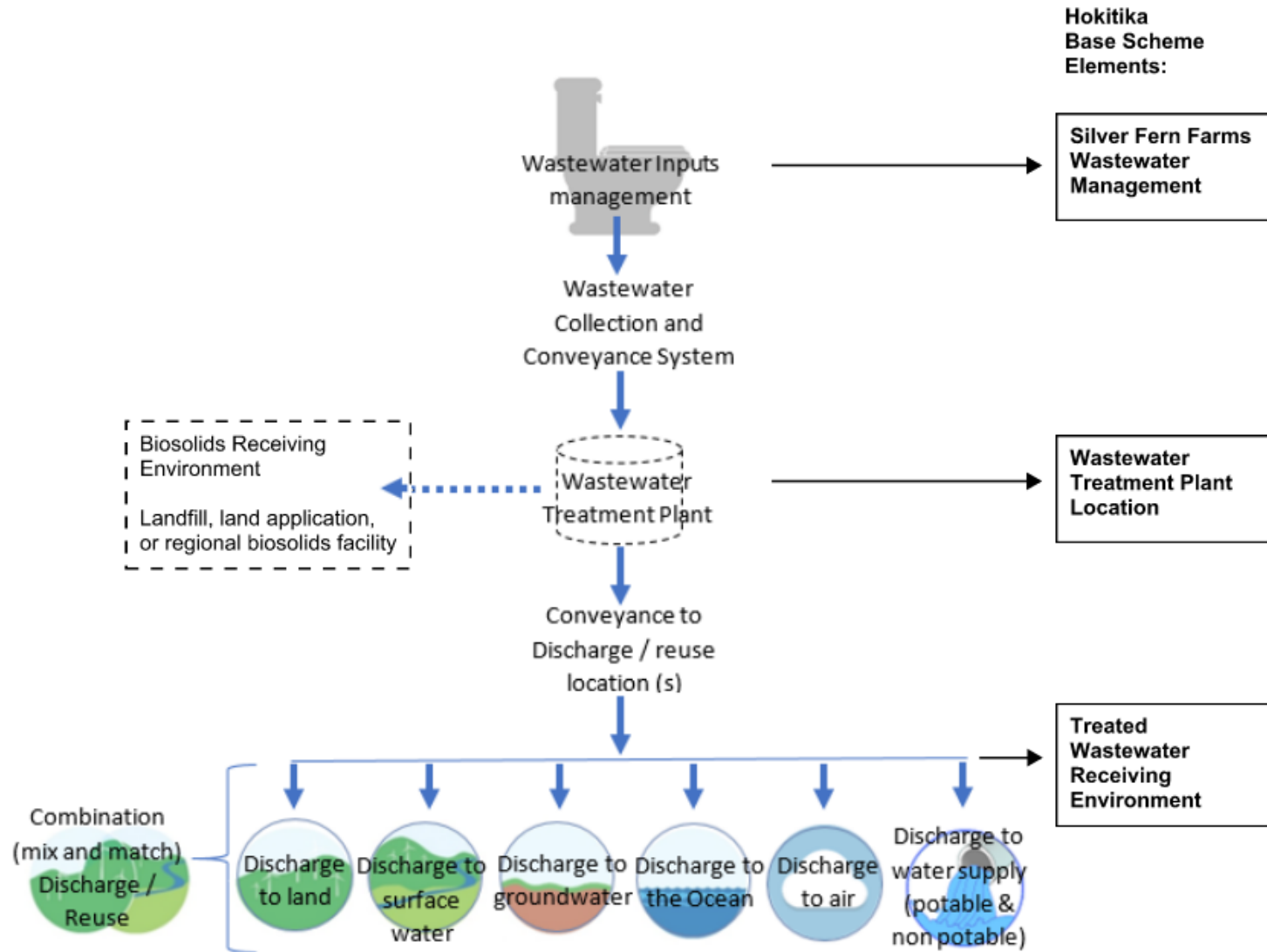
Assessment framework



*Feasible Options are an outcome of the Traffic Light Assessment



Summary of options development phase





Development of options

Hokitika
Base Scheme
Elements:

Silver Fern Farms
Wastewater
Management

Wastewater Inputs
management

Wastewater
Collection and
Conveyance System

Wastewater
Treatment Plant
Location

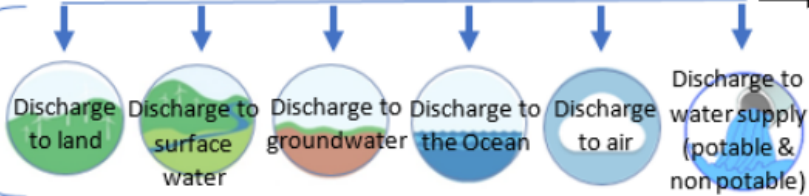
Wastewater
Treatment Plant

Biosolids Receiving
Environment
Landfill, land application,
or regional biosolids facility

Conveyance to
Discharge / reuse
location (s)

Treated
Wastewater
Receiving
Environment

Combination
(mix and match)
Discharge /
Reuse



- Tasman Sea
- Hokitika River
- Land
- Groundwater
- Treated Wastewater Reuse



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Environment
Landfill, land application,
or regional biosolids facility

Combination
(mix and match)
Discharge /
Reuse

Discharge
to land

Discharge to
surface
water

Discharge to
groundwater

Discharge to
the Ocean

Discharge
to air

Discharge to
water supply
(potable &
non potable)

- Existing WWTP Location
- West of Airport
- Airport
- East of Airport
- Blue Spur Area
- Transfer Station
- South side of Hokitika River



Development of options

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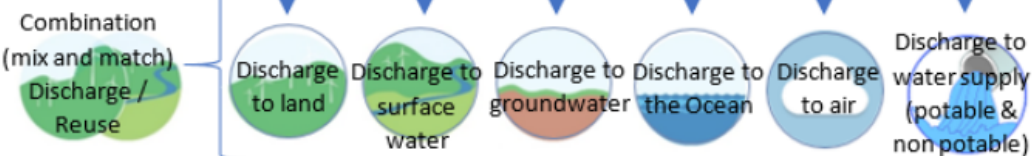
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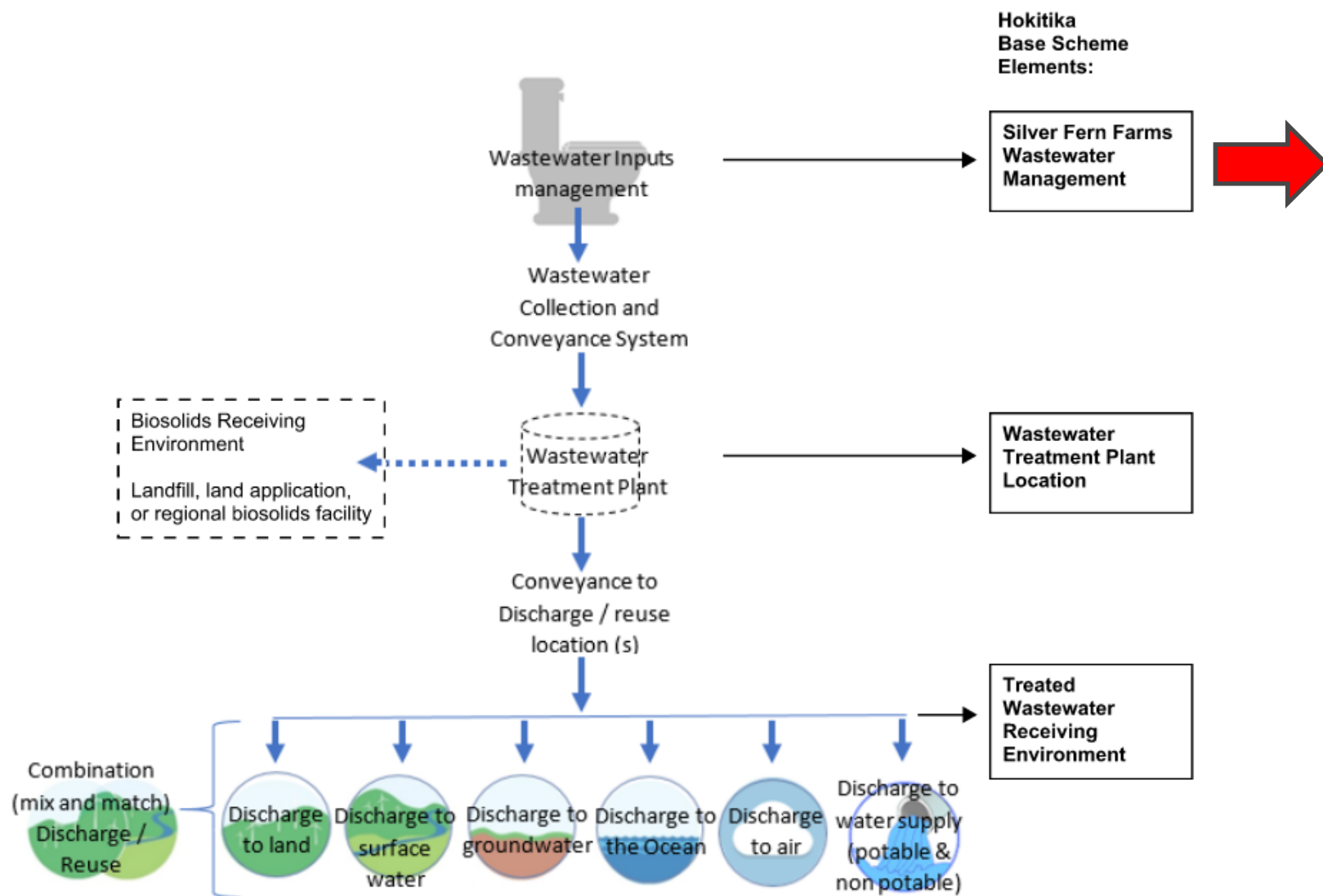
Treatment options

- Ponds / Lagoons
- Biological
Trickling Filter
(BTF)
- Conventional
activated sludge
- Other options





Development of options



Wastewater inputs management

Industrial (SFF)

- Status Quo
- Enhanced Pre-Treatment
- Diversion to Combined Ocean Outfall
- Diversion to Separate Ocean Outfall

Community:

- Water meters/user pays
- Subsidising water efficient measures e.g., water efficient shower heads
- Infiltration and Inflow reduction programmes
- Pressure control/reduction in the reticulated water supply
- Low pressure wastewater collection schemes.



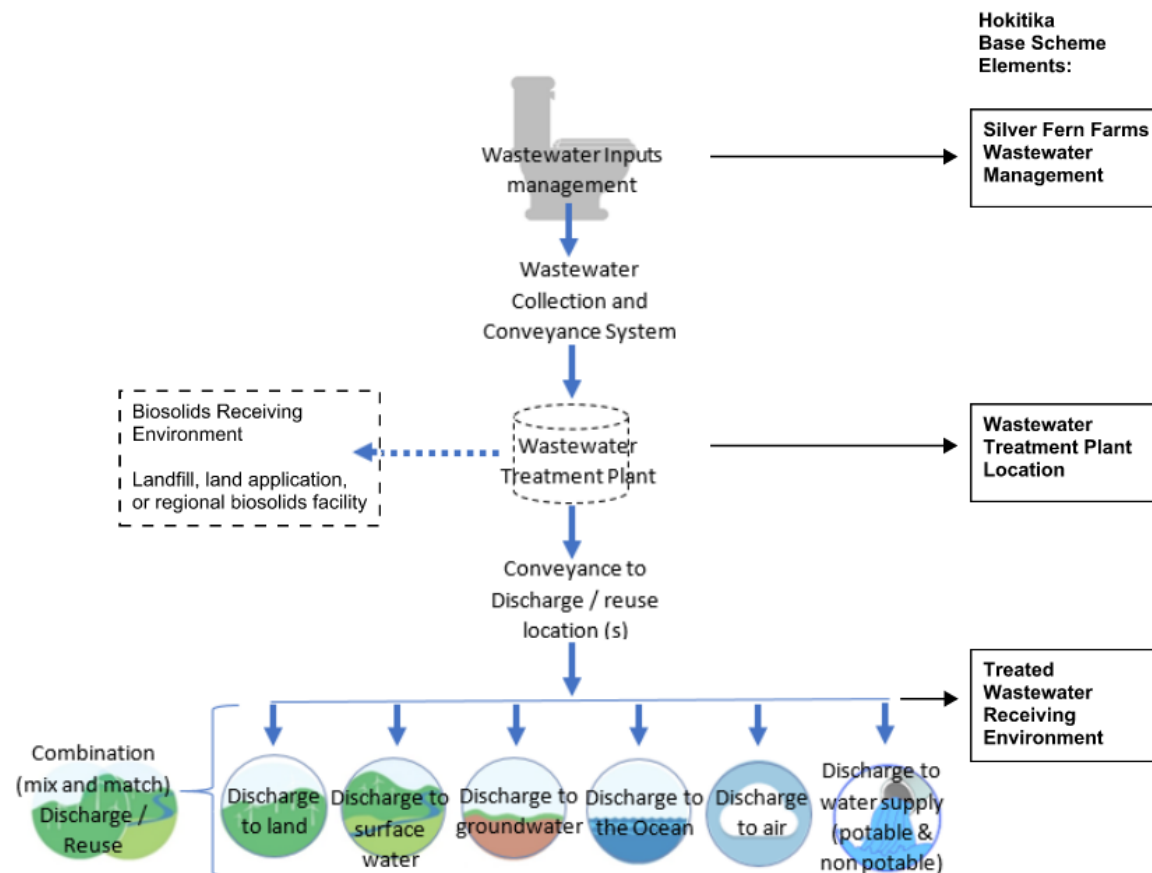
Scheme Enhancements

Enhanced level of wastewater treatment

- Over and above the minimum standards
 - Future proofing – future standards
 - Future water reuse
 - Community expectations

Enhanced biosolids management

- Treating sludge to classify as a biosolid
 - More flexibility for disposal/ reuse
 - Reduce GHG emissions or energy recovery
 - New organic waste guidelines





Assessment of options

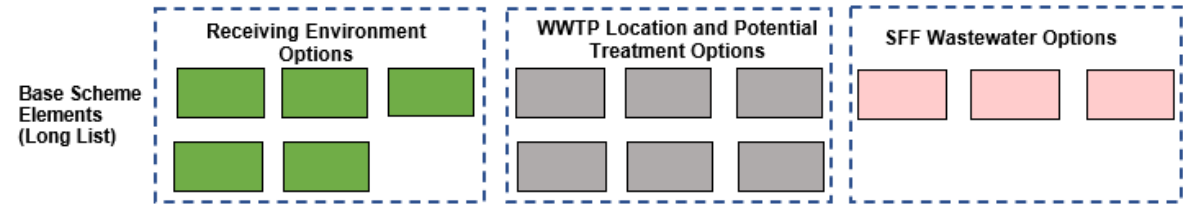
Fatal flaw assessment

- Assessment of WWTP **elements** against criteria
- Based on what we know
- Eliminate non-starters, unfeasible, high-risk options
- Outcome: short list of elements

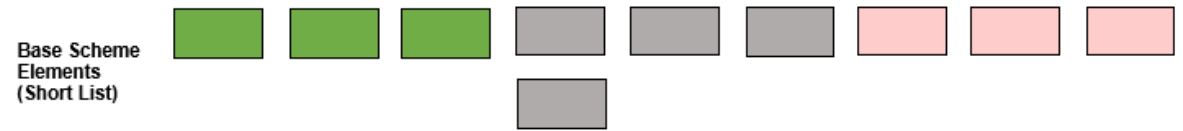
Develop scheme options

- Combine elements to form feasible scheme options
- Addition of scheme enhancements
- Outcome: long list of schemes

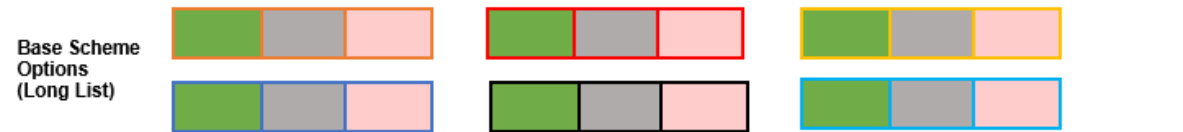
1. Identify Base Scheme Elements Long List



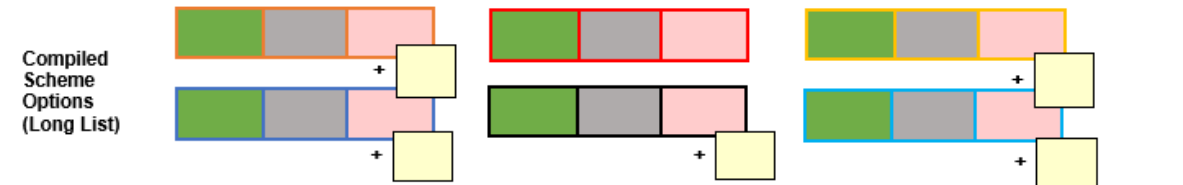
2. Carry out Fatal Flaw Assessment



3. Develop Base Scheme Options Long List



4. Consider additional Base Scheme Enhancements



5. Carry out Traffic Light Assessment



6. Carry out Multi Criteria Analysis (MCA)





Assessment of options

Traffic Light Assessment

- Assessment of WWTP **schemes** against criteria
- Based on what we know
- Eliminate poorly performing schemes
- Outcome: short list of schemes

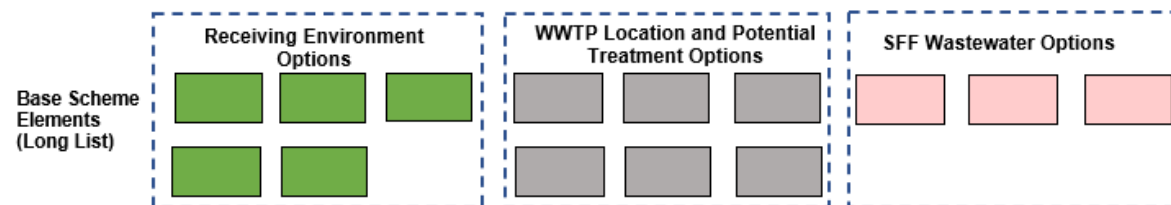
Multi-criteria Assessment

- Assessment of short-listed WWTP **schemes** against criteria
- Based on extensive evaluation and investigation of schemes
- Outcome: preferred scheme option

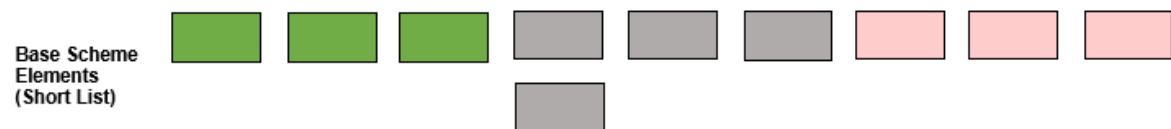
Best Practicable Option Assessment

- Assessment of schemes with an RMA lens

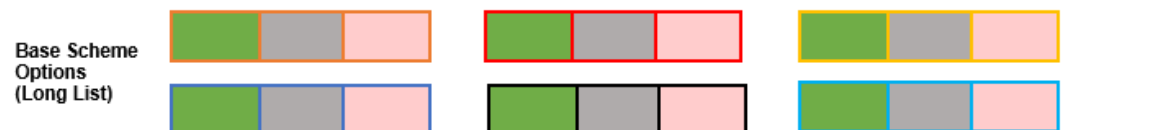
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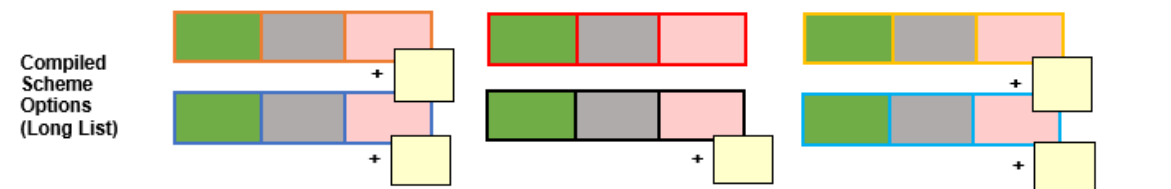
2. Carry out Fatal Flaw Assessment



3. Develop Base Scheme Options Long List



4. Consider additional Base Scheme Enhancements



5. Carry out Traffic Light Assessment



6. Carry out Multi Criteria Analysis (MCA)



Consider Best Practicable Option (BPO) Criteria



Assessment criteria

Scope	Criterion	Assessment stage		
		Fatal Flaw Assessment	Traffic Light Assessment	MCA
Investment Objectives	Avoid discharge of treated human waste directly to natural water bodies.	Y	Y	Y
	Meet regulatory standards for treated wastewater contaminants	N	Y	
	Minimise risk of climate change impacts on the wastewater system.	Y	Y	
Minimum Service Requirements	Public health risk	Y	Y	Y
	Alignment with the planning framework	Y	Y	Y
	Constructability	Y	Y	Y
	GHG emissions / Carbon footprint	N	Y	Y
	Infrastructure and technology	Y	Y	Y
Four Wellbeings	Māori cultural	Y	Y	Y
	Natural environment	Y	Y	Y
	Social and community	N	Y	Y
	Economic development and growth	Y	Y	Y
Critical Success Factors	Affordability/Financial	N	N	Y
	Technical feasibility	N	N	Y



Sensitivity Analysis

Applies weightings to criteria

- Some criteria more important than others
- Test various weightings scenarios, areas of uncertainty
- MCA provides a 'score'
 - Results are ranked
 - Weightings applied to test how variable ('sensitive') results are
 - Does changing weighting change ranking of results?



Draft Key Project Milestones (for discussion)

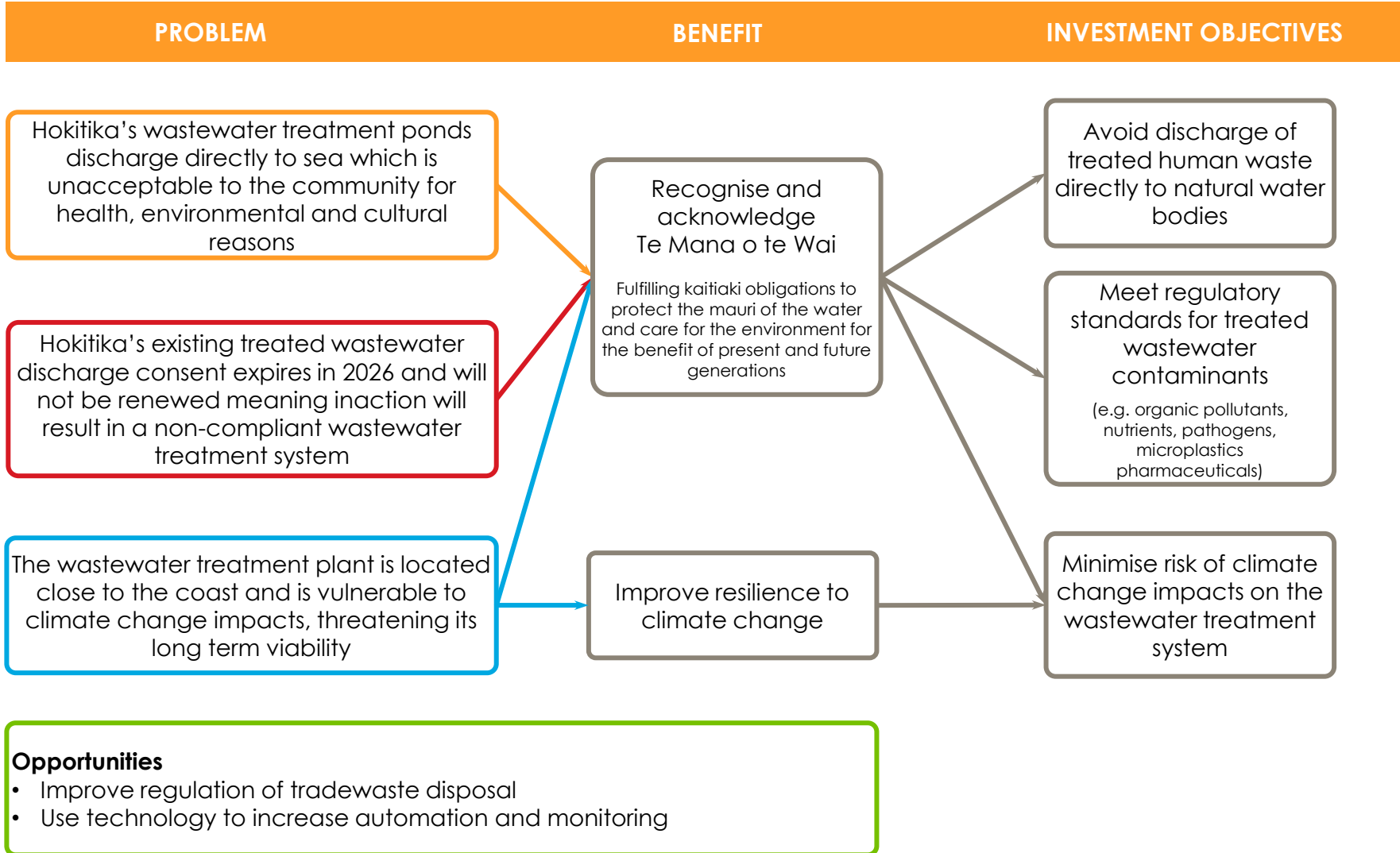
Task	Outcome	Who?	When? (est. date)
Presentation to Oversight Subcommittee	Endorsement of assessment process	Stantec / Oversight Subcommittee	Today
Fatal flaw assessment	List of feasible options for each WWTP element	Project working group (PWG)	April 2022
Develop WWTP system options	Packages of feasible WWTP systems	Stantec	May 2022
Initial evaluation of WWTP schemes	High-level evaluation of each system (e.g., pros/cons/constraints/cost estimates etc.) to guide assessment	Stantec	May 2022
Traffic light assessment	Short list (2-3) of potential WWTP schemes	PWG	June 2022
Presentation to oversight committee	Progress update and endorsement of shortlisted schemes	Stantec / Oversight committee	July 2022
Detailed investigation of shortlisted WWTP schemes	Information to guide MCA analysis	Stantec	6-12 months
MCA analysis	Preferred option	PWG	
Best Practicable Option	Confirmation of preferred option	Stantec	
Presentation to oversight committee	Progress update and endorsement of preferred option for community consultation	Stantec / Oversight committee	
Community consultation of preferred option	Feedback on preferred option	WDC/ Stantec	
Completion of Indicative Business Case		Stantec	



Hokitika Wastewater Treatment Plant Project

Westland District Council

Outcome Statement: *Improving health, environmental and cultural outcomes. By delivering a fit for purpose resilient wastewater treatment system for Hokitika*





Te Mana o te Wai

National Policy Statement for Freshwater Management 2020

1.3 Fundamental concept – Te Mana o te Wai

Concept

- (1) Te Mana o te Wai is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. It protects the mauri of the wai. Te Mana o te Wai is about restoring and preserving the balance between the water, the wider environment, and the community.

- (5) There is a hierarchy of obligations in Te Mana o te Wai that prioritises:
 - (a) first, the health and well-being of water bodies and freshwater ecosystems
 - (b) second, the health needs of people (such as drinking water)
 - (c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.