Otago Regional Council

Science Programme

Workshop 3: programme presentation structure options and lakes funding

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Purpose

1. LTP science programme and presentation options

2. Deep lakes funding options



SRA1: Review and align science programmes with community and catchment needs, ensuring outputs are accessible, relevant, and support decision-making. Clearly articulate how statutory and discretionary activities contribute to core environmental outcomes and identify any gaps in capability or coverage and how these will be addressed.

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1. LTP science programme and presentation options

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SRA1: Review and align science programmes with community and catchment needs, ensuring outputs are accessible, relevant, and support decision-making. Clearly articulate how statutory and discretionary activities contribute to core environmental outcomes and identify any gaps in capability or coverage and how these will be addressed.

Previous Workshops

Otago Regional Council

Workshop 1

- Programme history
- Statutory requirements and discretion
- Framework introduction
- Information expectation scenarios and feedback



How we think you want us to do it

- **More information** in areas with higher risk of a resource management issue
- **More information** on issues which are specific to ORC
- **Support** the full environmental management cycle
- **More information** where community groups are active
- **Equally interested** in regulatory and non-regulatory effectiveness
- **Desire to partner** with other groups if possible

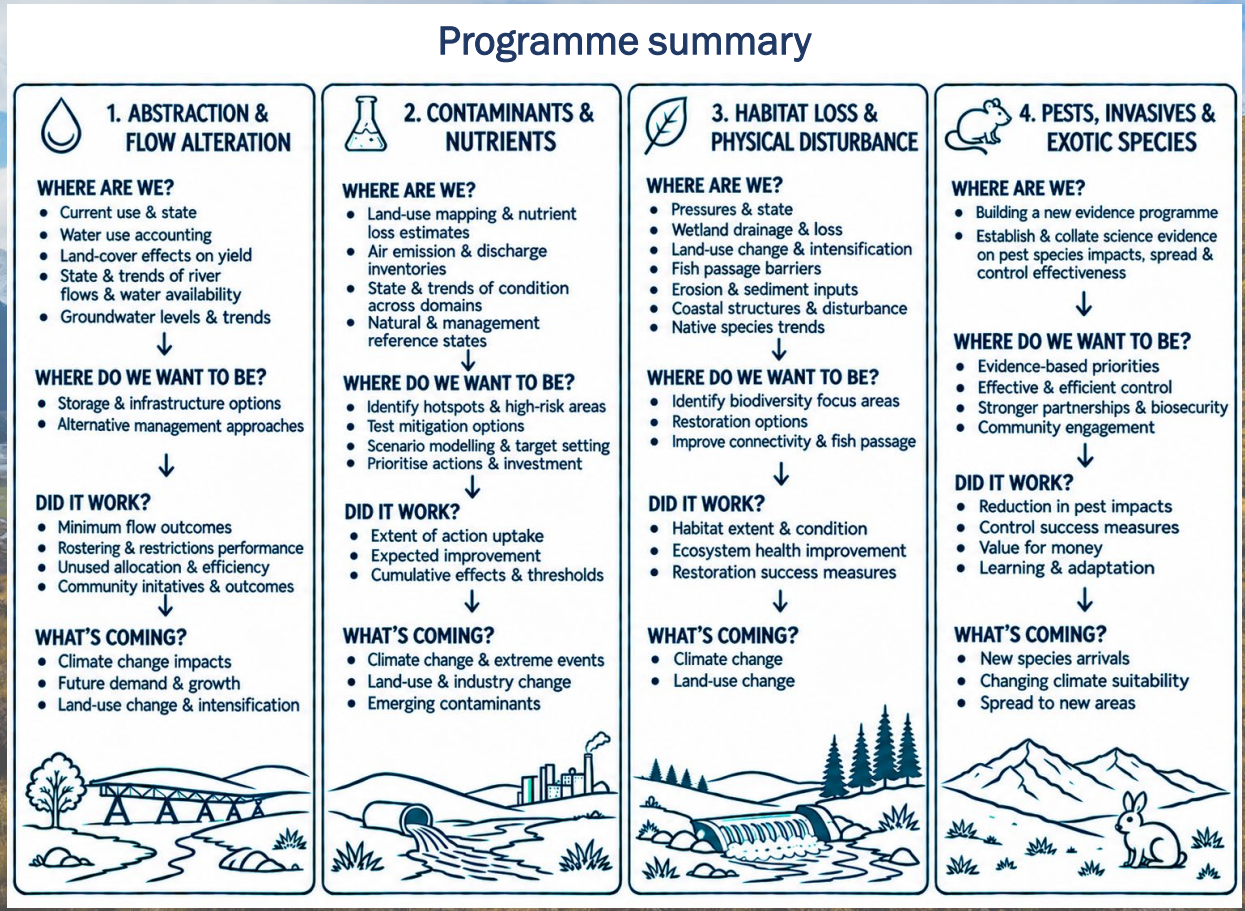
What we think you want

- **Value** for investment
- **Meet the needs** and expectations of Otago's communities
- **Suitable** under multiple policy settings
- **Integrate** across land, air, water, coast, and biodiversity
- **Focused** on aspects and areas ORC can directly influence
- **Robust science** to support limit setting and regulatory processes

Previous Workshops

Workshop 2

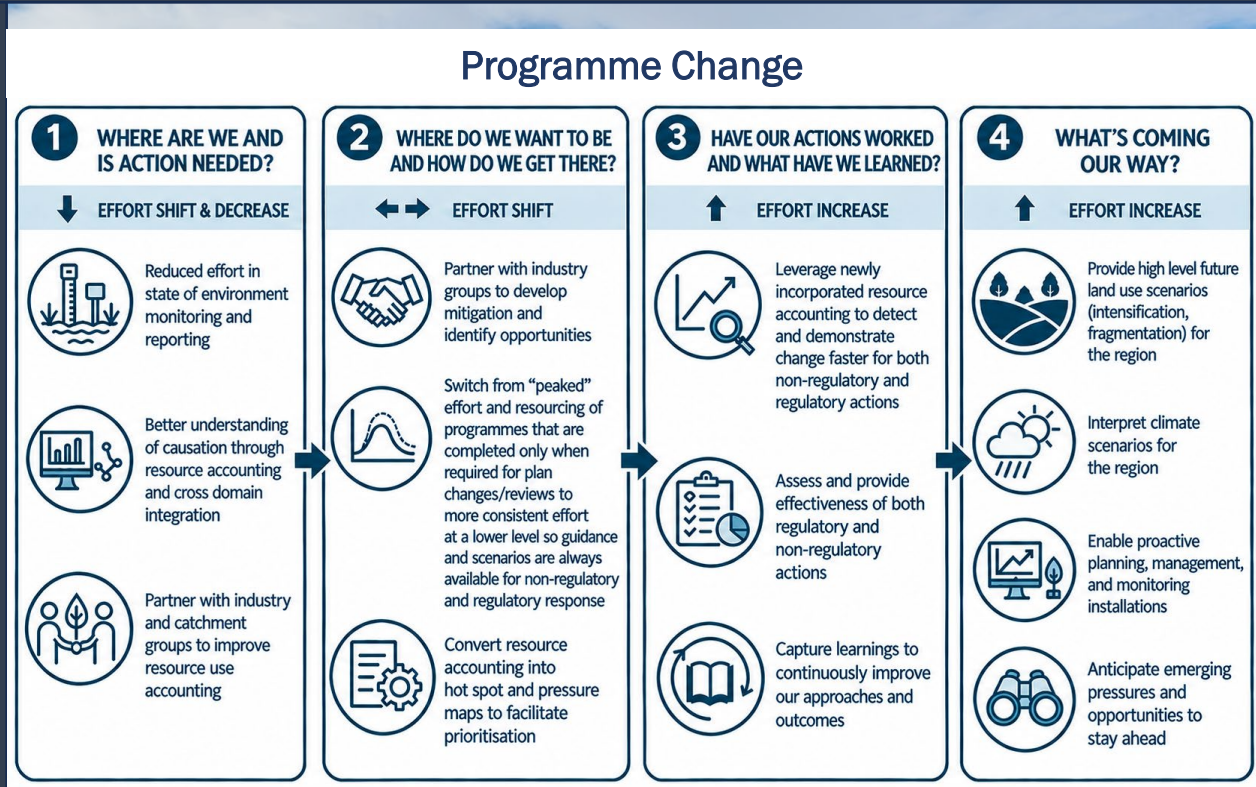
- Draft programme aligned to question framework
- Comparison to existing programme



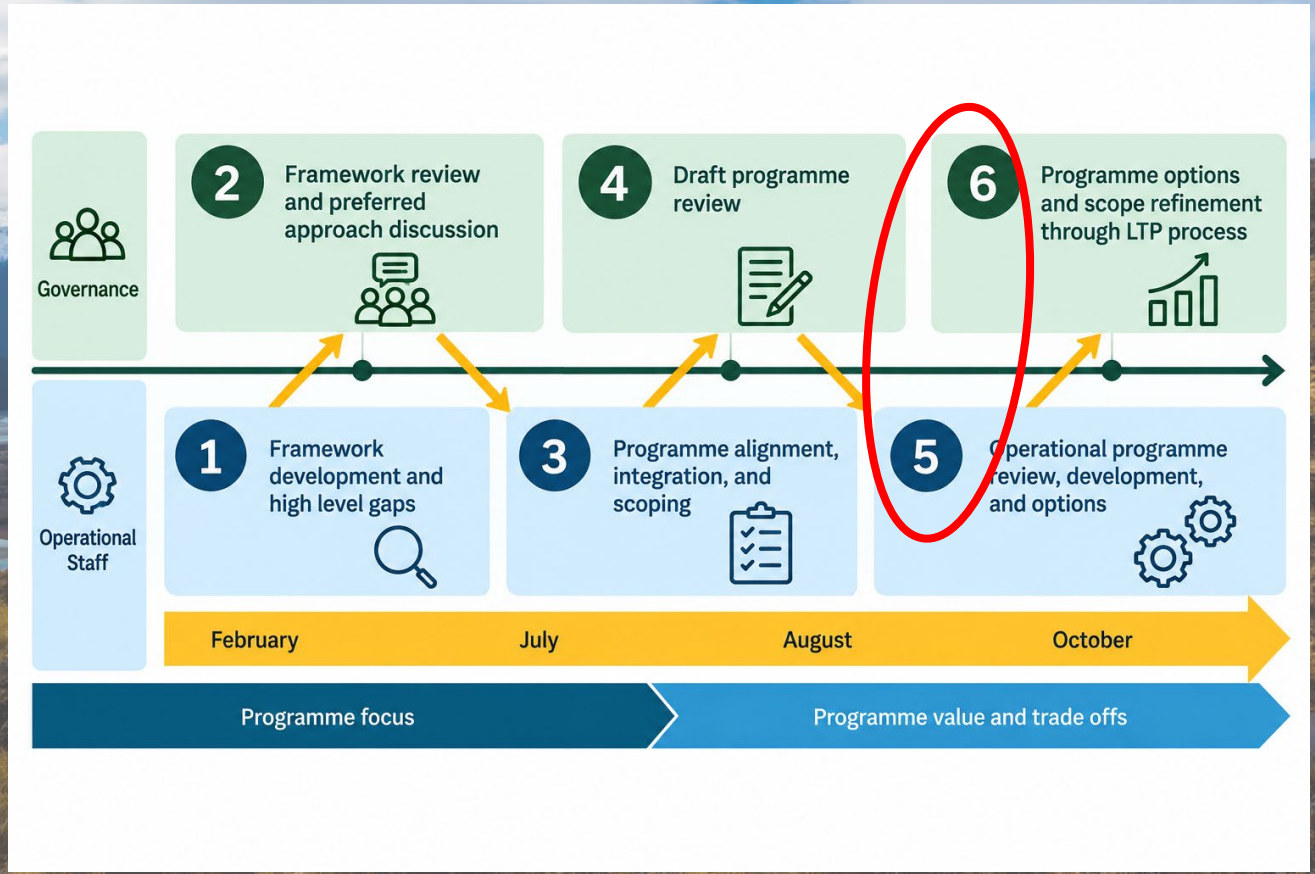
Previous Workshops

Workshop 2

- Draft programme aligned to question framework
- Comparison to existing programme



Road Map


Governance
2
Framework review and preferred approach discussion
4
Draft programme review
6
Programme options and scope refinement through LTP process
Operational Staff
1
Framework development and high level gaps
3
Programme alignment, integration, and scoping
5
Operational programme review, development, and options
February
July
August
October
Programme focus
Programme value and trade offs

Three Current LTP presentation styles

Otago Regional Council

Infographic summaries

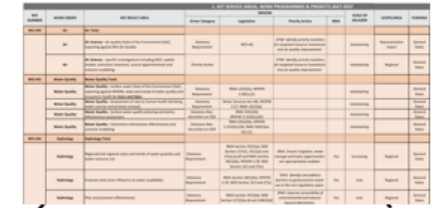
Corporate format (LTP workshop)

- High level
- Links to review framework unclear due to historic discipline specific format of LTP template

Internal team format

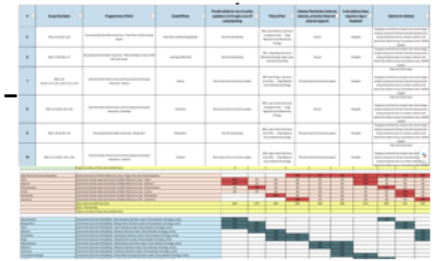
- **Very technical**
  - To support reviews of monitoring programmes
- **Complex**
  - 150+ rows for one discipline with cross links to scope and staging spreadsheets

Corporate budget (LTP workshop 29/10)





High level summary graphics and council presentation (workshop 2 9/9)



Detailed internal scopes and budgets

Internal budgets

Otago Regional Council

Policy Driver	Inclusion in current programme	Purpose/ 'To' statement/Why	How/What	Where	Scale
Where are we and what action is needed?					
Provide long-term trend and state assessments for contaminants in the region's rivers and lakes (5-yearly but lagged a year from land use assessment) representing the types of river/lake in the region AND a spanning a gradient representing U/S land use types land cover)					
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Addresses	To provide a regional picture of the current water quality conditions and identify where action is needed	Analyse timeseries data from a selection of sites which are representative of a land use gradient and river type to model state of water quality indicators (including TN, DIN, NNN,NH4, TP, DRP, E.coli, TSS, Turbidity) across the river network every 5 years	Regional	Regional
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Addresses	To identify extent of heavy metal contamination in urban waterways to understand potential effects on aquatic life	Analyse timeseries data to assess the current state for metals in rivers (Cu, Zn) at urban monitoring sites, updated annually	Horne Creek, Bullock Creek, Kaikorai, Leith, Lindsay's, Oamaru	Catchment
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Addresses	To assess current condition and identify where action is needed in catchments at high risk of contaminant loss to waterways	To evaluate current state in key water quality indicators (including TN, DIN, NNN,NH4, TP, DRP, E.coli, TSS, Turbidity) in higher pressure catchments (based on land use intensity, nutrient and sediment pressures, and proximity to sensitive receiving environments)	Manuherekia, Kakanui, Taieri, Lower Clutha Catchments, Pomahaka	
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Partially addresses	To characterise the current conditon and identify priority areas for action within the Manuherekia catchment	Analyse timeseries data annually, to evaluate current state for key water quality indicators (including TN, DIN, NNN, NH4, DRP, E.coli, TSS, Turbidity) in Manuherekia sub-catchments	Thompsons, Dunstan Creek, Ida Burn, Pool Burn	Sub Catchment
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Partially addresses	To characterise the current conditon and and identify priority areas for action within the Kakanui catchment	Analyse timeseries data annually, to evaluate current state in water quality (including TN, DIN, NNN, NH4, DRP, E.coli, TSS, Turbidity), in Kakanui sub-catchments	Waiareka Creek, Kauru, Island Stream	Sub Catchment
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Partially addresses	To characterise the current conditon and identify priority for action areas within the Taieri catchment	Analyse timeseries data annually, to evaluate current state in water quality (including TN, DIN, NNN, NH4, DRP, E.coli, TSS, Turbidity), in Taieri sub-catchments	Kyeburn, Deep Stream, Sutton Stream, Nenthorn, Silverstream, Waipori River	Sub Catchment
RMA S35 (2) (a)		To characterise the current conditon and identify			

Internal budgets

RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Partially addresses	To provide a regional picture of long-term patterns in water quality across different river types and land uses, and to idenify where action is needed	Analyse timeseries data to evaluate directionality and likelihood of trends in key water quality parameter (including TN, DIN, NNN,NH4, TP, DRP, E.coli, TSS, Turbidity) aggregated by river type, and across a gradient of land use at a regional scale over the 10 year time period from 2025-2035	Mountain, Hill, Lowland, Lake	Regional
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Not addressed	To assess long-term water quality patterns, including direction and rate of change, and identify where action is needed in urban environments	Use timeseries data to evaluate directionality, likelihood and magnitude of trends in of metals (Cu, Zn) at urban monitoring sites, at a regional scale over the 10 year time period from 2025-2035	Horne Creek, Bullock Creek, Kaikorai, Leith, Lindsay's, Oamaru	Catchment
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Addresses	To assess long-term water quality patterns, including direction and rate of change, and identify where action is needed in catchments at high risk of contaminant loss to waterways	Analyse timeseries data to evaluate directionality, likelihood and magnitude of trends in key water quality indicators (including TN, DIN, NNN,NH4, TP, DRP, E.coli, TSS, Turbidity) in priority catchments (based on land use intensity, nutrient and sediment pressures, and proximity to sensitive receiving environments) over the 10 year time period from 2025-2035	Manuherekia, Kakanui, Taieri, Lower Clutha Catchments, Pomahaka	Catchment
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Partially addresses	To assess long-term patterns in water quality including direction and rate of change and to identify priority areas for action in the Manuherekia catchment	Analyse timeseries data, to evaluate directionality, likelihood and magnitude of trends in key water quality indicators (including TN, DIN, NNN, NH4, DRP, E.coli, TSS, Turbidity), in Manuherekia sub-catchments over the 10 year time period from 2025-2035	Thompsons, Dunstan Creek, Ida Burn, Pool Burn	Sub Catchment
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Partially addresses	To assess long-term patterns in water quality including direction and rate of change and to identify priority areas for action in the Kakanui catchment	Analyse timeseries data, to evaluate directionality, likelihood and magnitude of trends in key water quality indicators (including TN, DIN, NNN, NH4, DRP, E.coli, TSS, Turbidity), in Kakanui sub-catchments over the 10 year time period from 2025-2035	Waiareka Creek, Kauru, Island Stream	Sub Catchment
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Partially addresses	To assess long-term patterns in water quality including direction and rate of change and to identify priority areas for action in the Taieri catchment	Analyse timeseries data, to evaluate directionality, likelihood and magnitude of trends in key water quality indicators (including TN, DIN, NNN, NH4, DRP, E.coli, TSS, Turbidity), in Taieri sub-catchments, over the 10 year time period from 2025-2035	Kyeburn, Deep Stream, Sutton Stream, Nenthorn, Silverstream, Waipori River	Sub Catchment
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Partially addresses	To assess long-term patterns in water quality including direction and rate of change and to identify priority areas for action in the Pomahaka catchment	Analyse timeseries data, to evaluate directionality, likelihood and magnitude of trends in key water quality indicators (including TN, DIN, NNN, NH4, DRP, E.coli, TSS, Turbidity), in Pomahaka sub-catchments, over the 10 year time period from 2025-2035	Heriot Burn, Crookston Burn, Waipahi	Sub Catchment
RMA S35 (2) (a)		To assess long-term patterns in water quality including	Analyse timeseries data, to evaluate directionality, likelihood and magnitude of		

Internal budgets

Policy driver	Inclusion in current programme	Resource change	Purpose/ 'To' statement/Why	How/What	Where	Scale
Where do we want to be and how do we get there						
Provide and maintain region wide scenario modelling to inform decision-making						
RMA S35 (2) (a) NPSFM 3.30 (1) (2) NEB 227 (1), 57 (a) (c)	Partially addresses		To evaluate land use and land management practice scenarios regionally to idenitfy relative scale of mitigation required to meet water quality outcomes and inform catchment prioritisation and region-wide plan direction	Use typology-based model farm estimates of relative change (under e.g. GMP/GMP+) applied to regional land use baselines and region-wide land use change scenarios (e.g. conversion to forestry/dairy at defined regional rate) routed through the REC network to comapre outcomes with estimated requirements to meet TAS/desired water qualtiy outcomes, with updates every 5-10 years (aligned wtih land use mapping and model farm updates)	Regional	Regional
RMA S32 NPSFM 1.6	Partially addresses		To inform catchment planning and regulatory activities (consenting) of current best practice for instream mitigation to manage contaminant loss	Evaluate and disseminate knowledge on in-instream contaminant mitigation by maintaining an up-to-date evidence based on current best practice for in-stream contaminant mitigation measures, drawing on national and internation research, guidance and montioring outcomes.	Regional	Regional
Provide scenario analyses in catchments to assess impacts of land use and land management practice						
RMA S30(1)(a), S32 (1) NEB 56	Partially addresses		To determine impacts of land use and land management practice (e.g. GMP, GMP+) on water quality in priority catchments (high risk of contaminant loss) and inform scale of change required to reach target outcomes	Use model farms estimates of relative change in contaminant loss including TSS, TP and TN (from land programme) to determine likely outcomes for water quality in the Kakanui catchment (Farm-scale model outputs aggregated to estimate catchment scale loads, assess potential contributions of management/mitigations toward achieving target outcomes)	Kakanui Catchment	Catchment
RMA S30(1)(a), S32 (1) NEB 56	Partially addresses		To determine impacts of land use and land management practice (e.g. GMP, GMP+) on water quality in priority catchments (high risk of contaminant loss) and inform scale of change required to reach target outcomes	Use model farms estimates of relative change in contaminant loss including TSS, TP and TN (from land programme) to determine likely outcomes for water quality in the Manuherekia catchment (Farm-scale model outputs aggregated to estimate catchment scale loads, assess potential contributions of management/mitigations toward achieving target outcomes)	Manuherekia	Catchment
RMA S30(1)(a), S32 (1) NEB 56	Partially addresses		To determine impacts of land use and land management practice (e.g. GMP, GMP+) on water quality in priority catchments (high risk of contaminant loss) and inform scale of change required to reach target outcomes	Use model farms estimates of relative change in contaminant loss including TSS, TP and TN (from land programme) to determine likely outcomes for water quality in the Taieri catchment (Farm-scale model outputs aggregated to estimate catchment scale loads, assess potential contributions of management/mitigations toward achieving target outcomes)	Taieri	Catchment
RMA S30(1)(a), S32 (1) NEB 56	Partially addresses		To determine impacts of land use and land management practice (e.g. GMP, GMP+) on water quality in priority catchments (high risk of contaminant loss) and inform scale of change required to reach target outcomes	Use model farms estimates of relative change in contaminant loss including TSS, TP and TN (from land programme) to determine likely outcomes for water quality in the lower Clutha catchment (Farm-scale model outputs aggregated to estimate catchment scale loads, assess potential contributions of management/mitigations toward achieving target outcomes)	Pomahaka	Catchment

Internal budgets

Otago Regional Council

Delivery Package	Policy Driver	Delivery Mechanism Internal/External	Timeframe	Inclusion in current programme	Resource change	Purpose/ 'To' statement/Why	How/What	Where	Scale
Q3: Did anything work and what have we learned									
Catchment mitigation effectiveness report	RMA S35(2)(b) NPSFM 3.15(3)(c)/(6) NEB 227(2)(a)	**Internal and/or external**	**Floatable**	Not addressed		To evaluate the effectiveness of mitigation and management interventions in catchments where there has been significant recent investment in mitigation activities and/or land practice or use change	Quanitfy water quality trends for key parameters (water quality/ecological inidcators) before and after mitigation and identify where change can be attributed to interventions (rather than climate or other factors)	Pleasant River	Catchment
Catchment mitigation effectiveness report	RMA S35(2)(b) NPSFM 3.15(3)(c)/(6) NEB 227(2)(a)	**Internal and/or external**	**Floatable**	Not addressed		To evaluate the effectiveness of mitigation and management interventions in catchments where there has been significant recent investment in mitigation activities and/or land practice or use change	Quanitfy water quality trends for key parameters (water quality/ecological inidcators) before and after mitigation and identify where change can be attributed to interventions (rather than climate or other factors)	Pomahaka catchment	Catchment
Catchment mitigation effectiveness report	RMA S35(2)(b) NPSFM 3.15(3)(c)/(6) NEB 227(2)(a)	**Internal and/or external**	**Floatable**	Not addressed		To evaluate the effectiveness of mitigation and management interventions in catchments where there has been significant recent investment in mitigation activities and/or land practice or use change	Quanitfy water quality trends for key parameters (water quality/ecological inidcators) before and after mitigation and identify where change can be attributed to interventions (rather than climate or other factors)	Thomsons Creek	Catchment
Catchment mitigation effectiveness report	RMA S35(2)(b) NPSFM 3.15(3)(c)/(6) NEB 227(2)(a)	**Internal and/or external**	**Floatable**	Not addressed		To evaluate the effectiveness of mitigation and management interventions in catchments where there has been significant recent investment in mitigation activities and/or land practice or use change	Quanitfy water quality trends for key parameters (water quality/ecological inidcators) before and after mitigation and identify where change can be attributed to interventions (rather than climate or other factors)	Mill Creek/Lake Hayes	Catchment
Catchment mitigation effectiveness report	RMA S35(2)(b) NPSFM 3.15(3)(c)/(6) NEB 227(2)(a)	**Internal and/or external**	**Floatable**	Not addressed		To evaluate the effectiveness of mitigation and management interventions in catchments where there has been significant recent investment in mitigation activities and/or land practice or use change	Quanitfy water quality trends for key parameters (water quality/ecological inidcators) before and after mitigation and identify where change can be attributed to interventions (rather than climate or other factors)	Upper Taieri	Catchment
Regulatory effectiveness report	RMA S35(2)(b) NPSFM 3.15(3)(c)/(6) NEB 227(2)(a)	**Internal**	**Floatable**	Not addressed	Major	To asssess the adequacy of consent montioring conditions	Analyse aggregated consent data (i.e. discharges to water including stormwater and wastewater) to assess relative contributions to water quality outcomes, identify gap and recommend additional monitoring requirements		Regional
Regulatory effectiveness report	RMA S35(2)(b) NPSFM 3.15(3)(c)/(6) NEB 227(2)(a)	**Internal**	**Floatable**	Not addressed	Major	To assess policy and planning effectiveness	Evaluate the extent to which implemented rules/targets/limits have resulted in measurable reductions in contaminant pressures and progress toward TAS		Regional

Internal budgets

Otago Regional Council

Scale / Where	Package of Works	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Regional/Sub-Regional	SoE Regional River State (WQ, HARP)		■					■			
	Opex internal staff time science (hrs)	500	700	300	300	300	500	700	300	300	300
	Opex external $ Bio/Gen Ad/COtton	150	150	150	150	150	150	150	150	150	150
	Capex EM $ DO telemetry		100					100			
Regional/Sub-Regional	SoE Regional River Trends (WQ, HARP)		■					■			
	Opex internal staff time science (hrs) (Trend analysis)	200	300	100	100	100	100	400	100	100	100
	Opex external $ trend analysis (+lakes/GW)		40					40			
	Capex EM $										
Regional/Sub-Regional	Drinking Water Source Quality (Annual, R&H/Effectiveness every 3 years)	■	■	■	■	■	■	■	■	■	■
	Opex internal staff time science (hrs)	400	200	200	300	200	200	300	200	200	400
	Opex external $										
	Capex EM $										
Regional/Sub-Regional	Recreational Water Quality	■	■	■	■	■	■	■	■	■	■
	Opex internal staff time science (hrs)	350	350	350	350	350	350	350	350	350	350
	Opex external $ FST signage	55	55	55	55	55	55	55	55	55	55
	Capex internal $ comms	15	15	15	15	15	15	15	15	15	15
Regional/Sub-Regional	Source Attribution - Diffuse										
	Opex internal staff time science (hrs)	400		50	50	50	400		50	50	50
	Opex external $										
	Capex internal $										
Regional/Sub-Regional	Source Attribution - Point source										
	Opex internal staff time science (hrs)	400		400	400	400	600		200	200	200
	Opex external $										
	Capex internal hrs consents/compliance	100	100	100	100	100	100	100	100	100	100
Regional/Sub-Regional	Reference State Rivers										
	Opex internal staff time science (hrs)	300	300	50	50	50	300	50	50	50	50
	Opex external $										
	Capex internal $										
Regional/Sub-Regional	Regional Scenario Modelling										
	Opex internal staff time science (hrs)		300	600	600				600	600	600
	Opex external $										
	Capex internal $										
Regional/Sub-Regional	Regulatory Effectiveness										
	Opex internal staff time science (hrs)			100	200	200			100	200	200
	Opex external $										
	Capex internal $										

Internal budgets

Otago Regional Council

Scale / Where	Package of Works	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	Opex internal staff time science (hrs)	300	50	100	100	100	100	100	100	100	100
	Opex external $										
	Capex internal $										
River Catchments	SoE Catchment River State - Kakanui										
River Catchments	SoE Catchment River Trends - Kakanui										
River Catchments	Catchment Scenario Modelling - Kakanui										
River Catchments	Catchment Mitigation Effectiveness - Kakanui										
River Catchments	SoE Catchment River State - Manuherekia										
River Catchments	SoE Catchment River Trends - Manuherekia										
River Catchments	Catchment Scenario Modelling - Manuherekia										
River Catchments	Catchment Mitigation Effectiveness - Manuherekia										
River Catchments	SoE Catchment River State - Pomahaka										
River Catchments	SoE Catchment River Trends - Pomahaka										
River Catchments	Catchment Scenario Modelling - Pomahaka										
River Catchments	Catchment Mitigation Effectiveness - Pomahaka										
River Catchments	SoE Catchment River State - Lower Clutha										
River Catchments	SoE Catchment River Trends - Lower Clutha										
River Catchments	Catchment Scenario Modelling - Lower Clutha										
River Catchments	Catchment Mitigation Effectiveness - Lower Clutha										
River Catchments	SoE Catchment River State - Taieri										
River Catchments	SoE Catchment River Trends - Taieri										
River Catchments	Catchment Scenario Modelling - Taieri										
River Catchments	Catchment Mitigation Effectiveness - Taieri										
River Catchments	Catchment Mitigation Effectiveness - Pleasant										
	Opex internal staff time science (hrs)	400		800	800	800	800		800	400	400
	Opex external $	30		30	30	30	30		30	30	30
	Capex internal $										

LTP presentation format anticipated needs

Otago Regional Council

Clear line of sight between question framework, programmes, and budgets

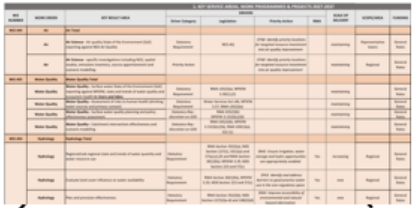
Brief, non-technical, description of projects including what, why (reg/non-reg drivers), and what action it informs

Clarity on who's involved internally and externally

What's delivered and when

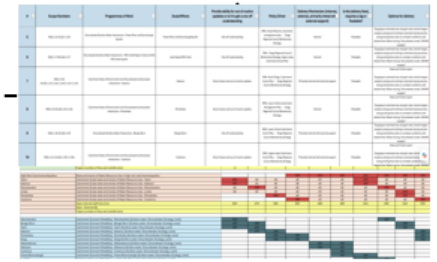
Scalable communication options (useful for communities, governance, and ORC staff)

Corporate budget (LTP workshop 29/10)





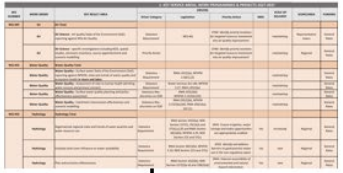
High level summary graphics and council presentation (workshop 2 9/9)



Detailed internal scopes and budgets

Pulling it all together

Corporate budget (LTP workshop 29/10)

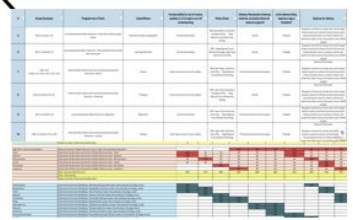




Programme summary document



High level summary graphics and council presentation (workshop 2 9/9)



Detailed internal scopes and budgets

Programme summary document

Develop "summary document" with funnel approach (high level context to detailed outputs)

- Framework introduction
- Whole of programme on a page
- Delivery tables with budget and framework links
- Project plans on a page for first year



Benefits

Increase awareness about what the programme does across the region and what questions it answers

Scalable understanding from high level outcomes of the programme through to projects which will occur near you

- Adaptable for LTP consultation

Help communities understand what we'll be doing, when, with who, and how they might get involved

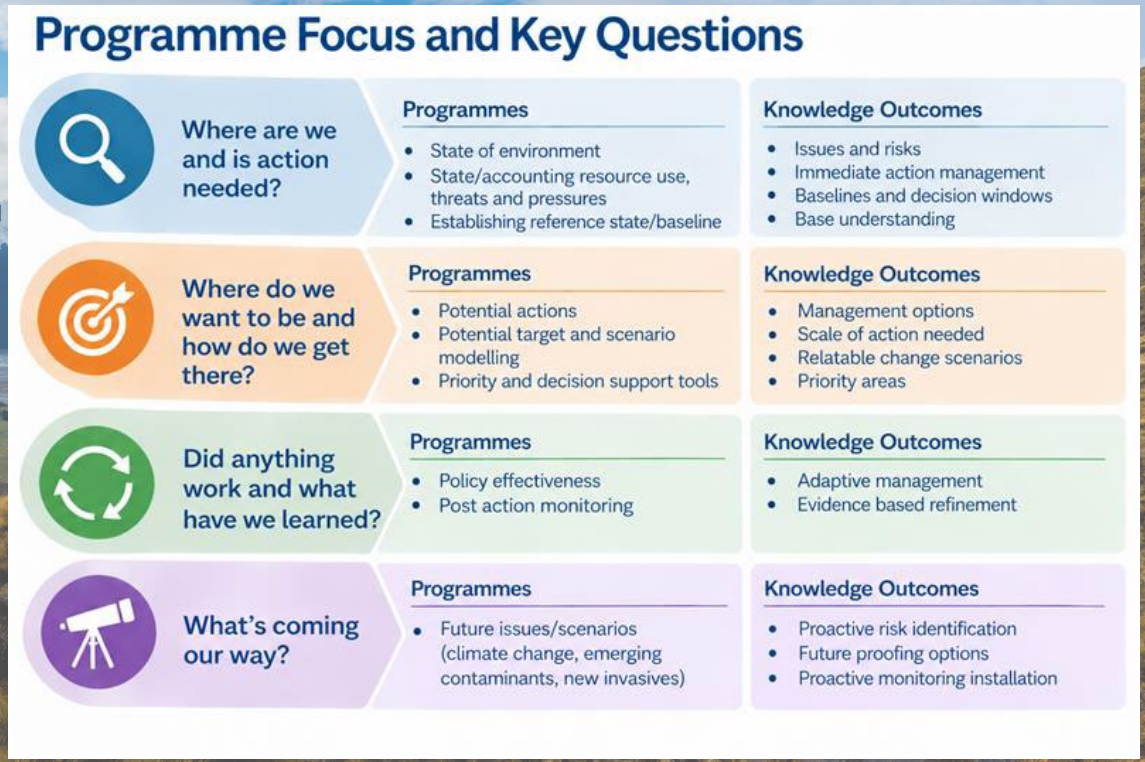
- Contribute data
- Set up additional monitoring ahead of time
- Help us alter/develop projects



Example

Develop "summary document" with funnel approach (high level context to detailed outputs)

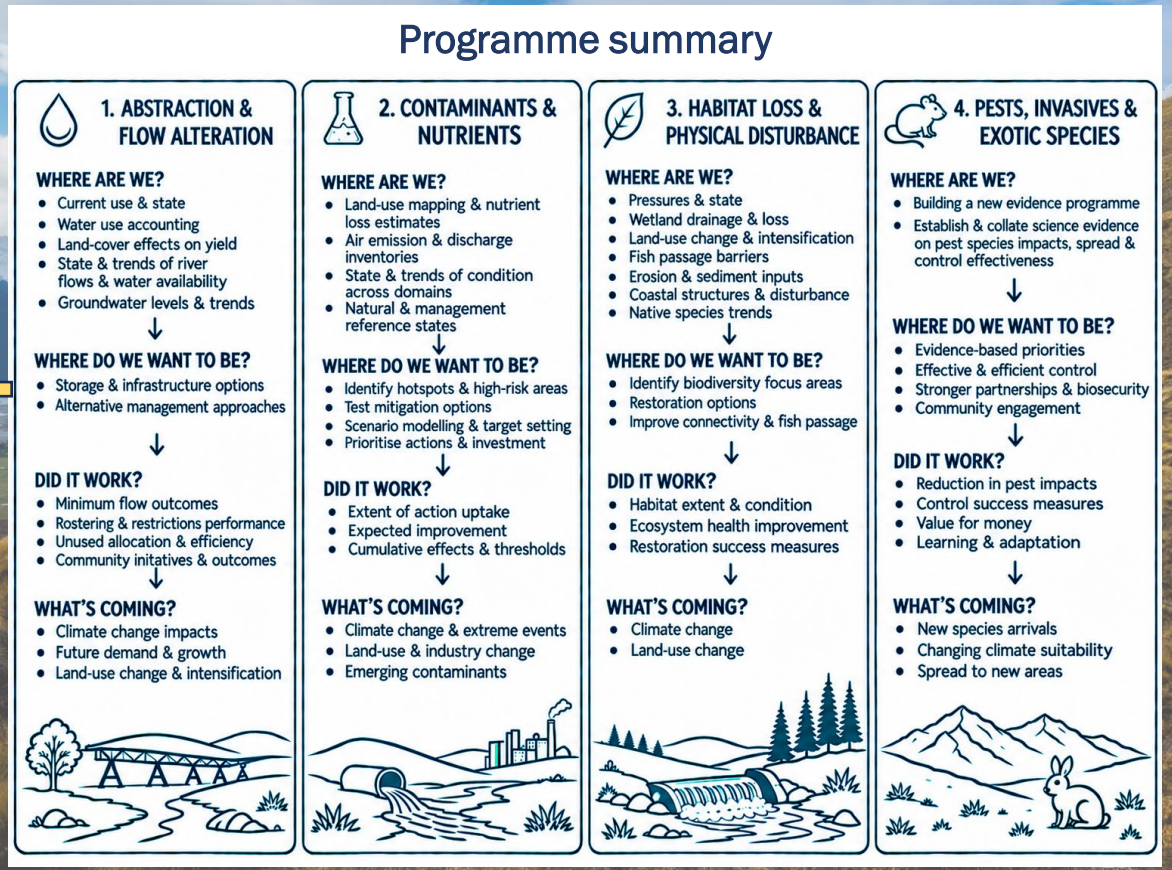
- Introduces framework
- Whole of programme on a page
- Delivery tables
- Project plans on a page for first year



Example

Develop "summary document" with funnel approach (high level context to detailed outputs)

- Introduces programme framework
- Whole of programme on a page
- Delivery tables
- Project plans on a page for first year



Example

Develop "summary document" with funnel approach (high level context to detailed outputs)

- Introduces programme framework
- Whole of programme on a page
- Delivery tables
- Project plans on a page for first year

		2027-2028	2028-2029	2029-2030	2030-2035
Area	**Region Wide**	Regional/sub-regional state and trends of Water Resource Use (A2; WO.454.1;) Future risks and pressures (A8)	Land use, irrigated area, and irrigated demand mapping (A1,A2) Regional/sub-regional state and trends of Environment of Water Quantity and Ecology (A1)	Land cover influence on water availability (A1; WO.454.2)	Regional/sub-regional state and trends of Environment of Water Quantity and Ecology (1) Regional/sub-regional state and trends of Water Resource Use (2) Land use, irrigated area, and irrigated demand mapping (A1,A2)
	Kakanui		1. Catchment Scale state and trends of Water Resource Use (1, 2) 2. Catchment state and trends of Environment and Groundwater/surface water interactions 3. Quantify water losses associated with Race Systems (2,3)	1.Catchment state and trends of Freshwater Ecology (1) 2.Catchment Scenario Modelling - (Surface water, Groundwater, Ecology, Land) (4,5) 3. Effectiveness of Allocation Settings on Economic and	1. Catchment Scale state and trends of Water Resource Use (1, 2) 2. Catchment state and trends of Environment and Groundwater/surface water interactions (1)

Project title

What are we doing?

Description of what project is

Why are we doing it?

Description of how project benefits management of Otago's resources

What will the project deliver? Milestones and outputs

Milestones
1.
2.

Outputs
1.
2.

Who might be involved

Community group, industry, Internal teams

Relevant data and knowledge

Drivers

Legislative or other drivers such as CAPs

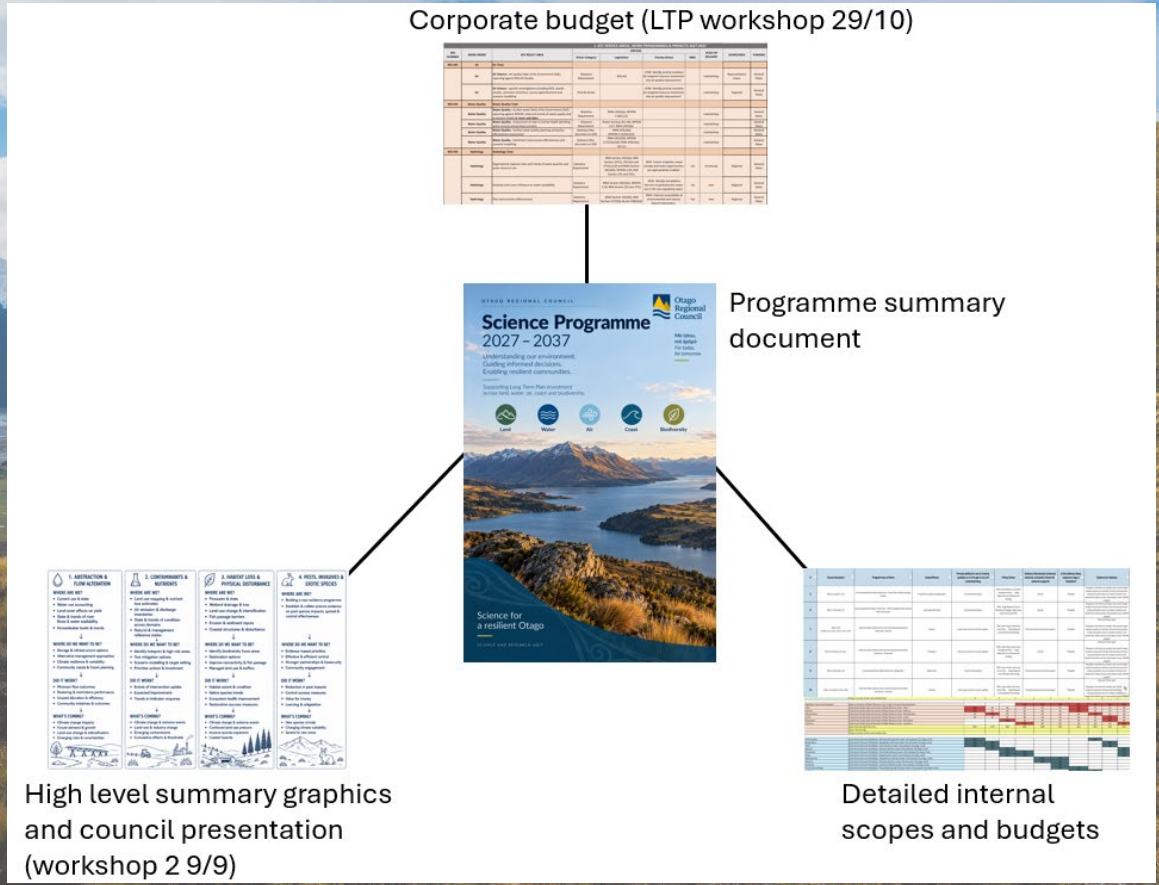


Project Timeline

Discussion

Any additional pieces needed in the summary document or missing steps?

Next steps: Return with “formatted” summary document in February



Workshop Purpose

1. LTP science programme and presentation options

2. Deep lakes funding options



Deep Lakes Funding Proposal

Otago Regional Council

Lakes TAG developed a 10-year 20 million dollar proposal to inform lakes management

- On top of existing monitoring and science investment

Science programme review and development

- Broader focus than just deep lakes
- Maintained “existing” deep lakes funding
- Included new projects that align with components in TAG work



Existing Deep Lakes Funding

Monitoring effort of approx. $1.1 million (20% of regional spend)

- $300,000 lake sampling
- $690,000 rivers and ground water
  - Quality, quantity, biomonitoring
- Data and support
- Site maintenance and Capex

Science data analysis

- $240,000 (approx. 1 FTE)

Total spend: approx. 1,340,000

- Occasional extra external funding or related projects



Options to Increase Lakes Funding

Otago Regional Council

Option 1: Reorganized science programme which could address parts of TAG proposal

Option 2: Reorganized science programme scope with lakes prioritised over other catchment work but maintain monitoring in other areas so projects can be run in the future

Option 3: Revised science programme scope with further prioritization including dropping some monitoring and projects

Options	Additional Cost/effort per year	Trade off
Option 1	Investment: approx. $365,000	Approximately 10 water quality sites reallocated, planned land and water projects brought forward
Option 2	Investment: approx. $524,200 Increase in staff effort but little further opex spend-Further catchment nutrient work	Drop water quality catchment studies in other catchments (Kakanui, Manuherekia, Pomahaka), but maintain monitoring, some fish SoE sites reallocated to lakes work
Option 3	Option 2+…	Will likely require dropping monitoring/projects else where to increase spend.

UL Current monitoring spend approx. $1,100,000 = 20% of regional monitoring cost. Current UL science spend = approx. 240,000 a year
*All values in the options table above is in addition to current spend

Lakes Funding Topics

Otago Regional Council

Planned projects would contribute to understanding:

- Targeted/adapted water quality monitoring to inform nutrient inputs and budgets
- Model farm programmes to understand changes in land use, on farm practice, and potential reductions that could be achieved under mitigation scenarios
- Quantification of point-source inputs

*Pending funding level, approaches used may vary from those suggested by TAG



Otago Regional Council