



Next steps for scenarios

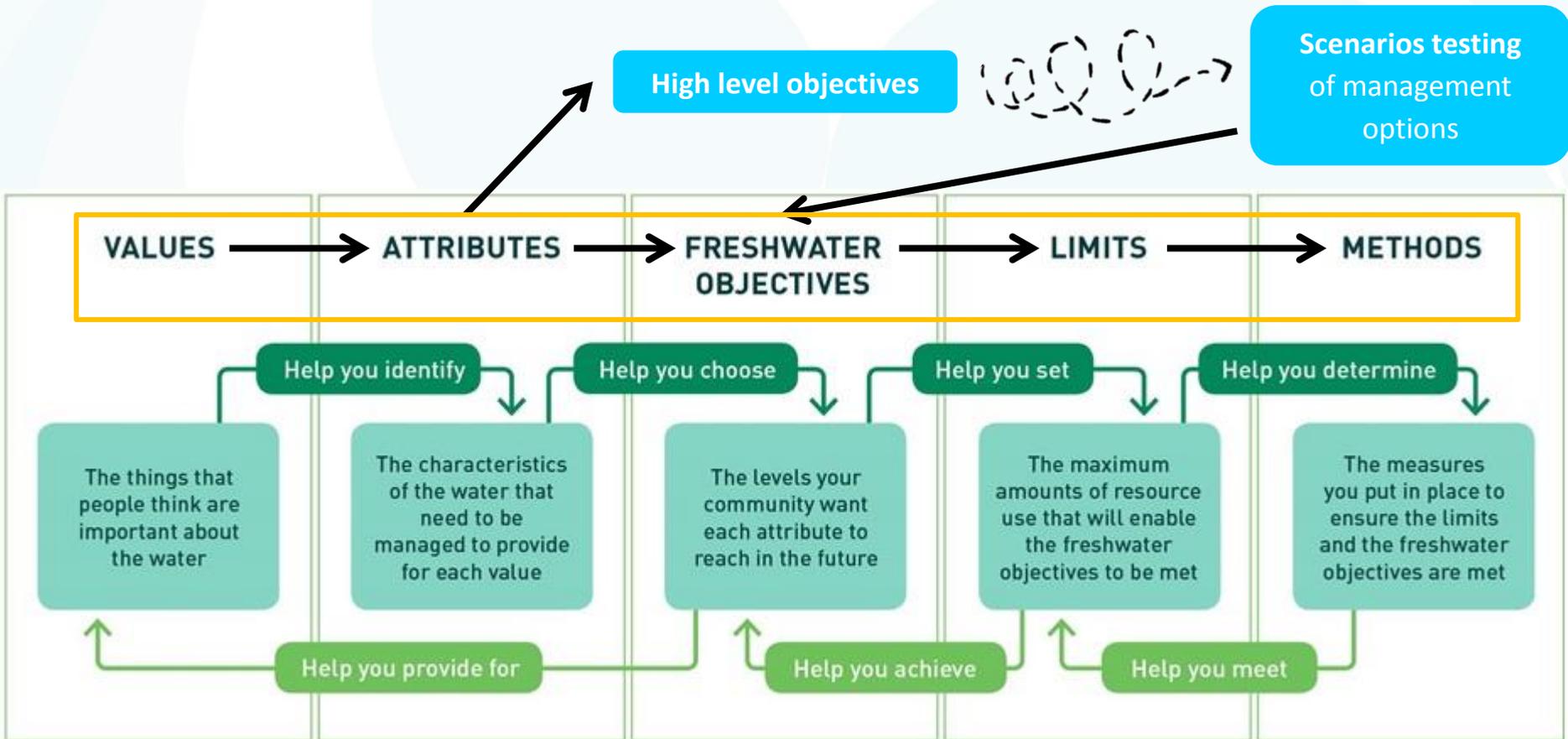
9 February 2017

Outline

- What's the purpose of scenarios?
- Scenario work so far
- What's been happening in 2017?
- Proposed scenarios framework
- Scenarios and place (Ned)
- Scenario activities (after dinner)

Scenarios help...

- Create information for your WIP deliberations and decision-making
- Explore management options you're interested in (and some that you're not!)
- With model approach = consistent way of looking at the future, across all values



How scenarios fit in

Scenario work so far

Narratives for Urban Development scenarios

Aim: To create scenarios which are clearly distinct from each other to be able to see difference in outcomes across biophysical, social, cultural and economic values.

SCENARIO 1: BAU 1

The first business as usual scenario (BAU 1) sees development occurring to the extent and density anticipated in the WCC and PCC district plans' rules and the rules of the regional. Practice around the mitigation of the effects of new development is assumed to be as it is today (i.e. little stormwater quality management) and will not change over the course of the model.

SCENARIO 2: BAU 2

The second business as usual scenario (BAU 2) sees development occurring as described in BAU 1, but also assumes that identified and/or likely development areas not currently within a district plans, but described in other documents such as structure plans and/or growth strategy (e.g. the PCC Northern Growth Area Structure Plan), will go ahead. We will need to make some assumptions about when these occur. Practice around the mitigation of effects will be the same as under BAU 1 (i.e. low level mitigation of stormwater impacts).

SCENARIO 3: BEST PRACTICE NEW DEVELOPMENT

Scenario 3 sees all definite and likely development areas developed (i.e. those areas in BAU 2) but with stormwater management practice that is enhanced to reach a 'best practice' standard (BMP). This is likely to reflect national best practice, with some degree of analysis to identify mitigation practices likely to be feasible and valuable in the whaitua. This BMP approach tends to be focussed on the use of stormwater management devices and follows the approach of current land development practice, aiming for large flat sections, large houses and large roads.

SCENARIO 4: BETTER THAN BEST PRACTICE NEW DEVELOPMENT

Scenario 4 moves a step on from Scenario 3 by reframing the method of development (particularly of greenfield development) to take a 'better than best practice' approach. In this case, this will mean the full application of water sensitive urban design (WSUD) principals in subdivision design and construction, including seeking lower imperviousness than BAU and BMP practice, smaller building and road footprints, greater enhancement of water ways through riparian and green space management, and green stormwater infrastructure choices.

SCENARIO 5: SHRINKING THE URBAN DEVELOPMENT FOOTPRINT

In order to further explore the impacts of urban development, Scenario 5 provides a development pathway in the whaitua that covers either a smaller footprint, or a lower density, than under either of the development trajectories of the two business as usual scenarios (Scenarios 1 and 2). We would need to make assumptions about where to lessen/de-intensify the urban development footprint. Decisions would also be needed around the level of stormwater mitigation to be applied – it may be useful, for instance to compare the low-level, BAU stormwater mitigation over a smaller catchment with that of the Scenarios 1 and 2.

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1

23 November 2016

Scenarios developed by the Rural Issues Working Group

Gold Scenario	Where	Retirement of very steep slopes and afforestation to bush	Space planting and afforestation on land vulnerable to erosion	Riparian planting	Stock exclusion	Stocking rates	Forestry	On-site wastewater
		Class 6, 7, & 8 (NZEUC)	Addressed by gold scenarios for retirement of steep slopes	All streams (permanently flowing water 0.5 m wide or 30 cm deep) to receive width (both sides) 2025	All streams (permanently flowing water 0.5 m wide or 30 cm deep) 2025	5.5 milha	Proportion open bare (total) woody vegetation does not exceed 3% each year	
	When	Retire 2025 (woody regeneration cover by 2040)	Class 6 (NZEUC)	All streams (permanently flowing water 0.5 m wide or 30 cm deep) to receive width (both sides) 2025	All streams (permanently flowing water 0.5 m wide or 30 cm deep) 2025	11 milha	Proportion open bare (total) woody vegetation does not exceed 2% each year	
Silver Scenario	Where	Class 6, 7 & 8 (NZEUC)	Class 6 (NZEUC)	All streams (permanently flowing water 0.5 m wide or 30 cm deep) to receive width (both sides) 2025	All streams on public land (permanently flowing water 0.5 m wide or 30 cm deep) 2025	Same as silver	Proportion open bare (total) woody vegetation does not exceed 40% each year	
	When	Retire 2040 (woody regeneration cover by 2060)	Class 7 & 8 (NZEUC)	All streams on public land (permanently flowing water 0.5 m wide or 30 cm deep) to receive width (both sides) 2025	All streams on public land (permanently flowing water 0.5 m wide or 30 cm deep) 2025			
Bronze Scenario	Where	Class 8 (NZEUC)	Class 7 & 8 (NZEUC) on public land	All streams on public land (permanently flowing water 0.5 m wide or 30 cm deep) to receive width (both sides) 2025	All streams on public land (permanently flowing water 0.5 m wide or 30 cm deep) 2025	77	Could be better or by another means (e.g. off-site)	N/A
	When	Retire 2060 (beginning 2020)	77	All streams includes streambank revegetation and electric fences	Under GWRC riparian programme, stream revegetation, stream fencing planned to 2025. Planting on GWRC land can be estimated to 2025.		Addressed in riparian planting column	
Notes								
Business As Usual		Retirement of land is considered on the basis of riparian health. Conservation plans and/or other land use plans can appear with GWRC assistance	Under GWRC Soil Conservation Plan, riparian programmes (e.g. 40 ha) and for woody vegetation on GWRC land planted areas can be estimated to 2025 together with a sediment reduction factor					

Gold, silver, bronze scenarios with management options

6 narrative scenarios

Management options

Management options for stormwater and wastewater

Derived from management options considered by S/WWW WG. NB. Some finer grained managed options and policy approaches have been identified for consideration during decision making stage (see ENP-6-1033).

	Management option	Why?
First flush diversion of stormwater to wastewater	Proprietary devices (e.g. filter pods)	Removal of toxicants, sediment and pathogens to WWTP for treatment
	On public land (distributed)	
Rain gardens	On private land (high risk sites)	Toxicant and sediment removal
	On public land (distributed)	
Stormwater treatment wetlands	On public land (distributed)	Toxicant treatment, some sediment and nutrient treatment
	Treatment of high trafficked roads (catchment-scale)	Amenity, valued urban landscapes
Rain water harvest and reuse	Rain tanks in dwellings	Toxicant treatment, some sediment and nutrient treatment
	Rain tanks and reuse in commercial properties	Amenity, valued urban landscapes
Mitigate high zinc generating roofs by replacement or painting	Reduced runoff volumes and rates	Reduced water use with reuse
	Improved on site practice and handling of contaminants	Reduced temperatures of runoff
Road sweeping to remove fines	Remove copper from entering stormwater	Remove toxicants, sediment
	Reduce impervious surface catchment cover	Remove toxicants, sediment
Upgrade WWTP for higher level of treatment	Toxicant and sediment removal	Habitat improvement and reduced sediment release
	Improved water inshore water quality?	Improved water inshore water quality?
Catchment wastewater network pipes	Reduce impact of pathogens on inshore water quality	Cultural and social values
	Reduce leaks and cross connections	Reduce leaks and cross connections

1



What's been happening in 2017?

- Tranquil Waters modelling meeting
- CMP/WWL/Project team meeting
 - Reviewed working group scenario material
 - Examined Committee questions
 - Raised ideas for new framework
- Project team: weaving ideas together

Advice from 2017 work:

- Management options all make sense
- Very few can't be modelled
- Alternative approach for some options?
- 'Urban development area' could be used as starting point for framework
- Options can be tested in an 'additive way'
- Model assumes all practices are adopted

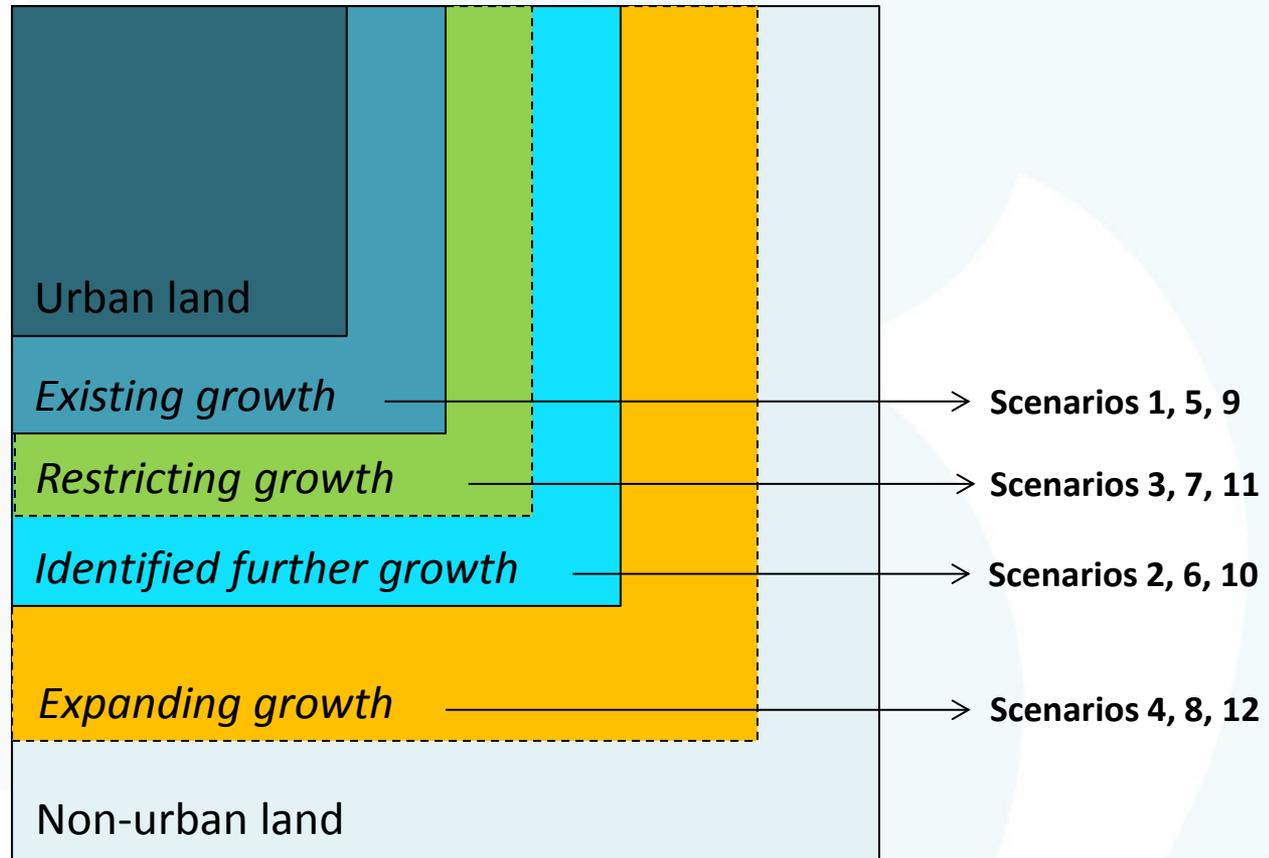
Proposed scenario framework

		Land and water use practice		
		Current	Improved	Water sensitive
Development area	Existing growth	Scenario 1 (BAU 1)	Scenario 5	Scenario 9*
	Identified further growth	Scenario 2 (BAU 2)	Scenario 6	Scenario 10
	Restricting growth extent (denser development)	Scenario 3	Scenario 7	Scenario 11
	Expanding growth extent (spread out development)	Scenario 4	Scenario 8	Scenario 12

What are 'development areas'?

- Existing growth:
 - development areas in district plans
- Identified further growth:
 - all 'existing growth', plus likely areas
- 'Restricting' and 'Expanding growth':
 - Based on 'further growth' area
 - TBC by Committee with technical input

What are 'development areas'?



DRAFT

Identified further growth

Indicative only - Judgeford Structure Plan area

Legend

- PCC Potential Intensification Areas
- WCC Indicative future residential areas
- PCC NGA Zone Name**
 - Conservation 2020+
 - Rural Res 2020+
 - Rural Res 2032+
 - Rural SAL
 - Suburban 2020-2032
 - Suburban 2032+
- Transmission Gully - north
- Transmission Gully - central
- Transmission Gully - south
- Petone-Grenada holding alignment**
 - Designation Corridor
 - P4

Existing growth

TAoPW identified growth areas



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What does 'practice' mean?

- Rural, urban development and stormwater and wastewater management options
- 'Current'
 - existing practice, policy and investment (i.e. BAU)
- 'Improved' and 'Water sensitive'
 - TBC by Committee with technical input

Examples of 'practice' change

- What is 'improved' and 'water sensitive' practice?
 - # wastewater network overflows per year?
 - extent revegetation for sediment management?
 - extent imperviousness in new development?
- Technical advice to back fill with management options

Next meetings

- Follow up on today's work
- Start filling in the content:
 - What are 'improved' and 'water sensitive' practices?
 - What are the delineations and densities of the 'restricted' and 'expanded areas'?
- Scenarios to modellers by March

High level objectives – June 2016

Restore ecological health and water quality	Improve water quality for human health	Sustainable urban development	Sustainable rural land use	Te mana o Te Awarua-o-Porirua
<p>Reduce sedimentation rates</p> <p>Reduce pollutant inputs:</p> <ul style="list-style-type: none"> - reduce toxicant inputs - cap nutrient inputs <p>Restore habitats:</p> <ul style="list-style-type: none"> - estuary re-vegetation - riparian and habitat enhancement <p>Reduce impacts from altered hydrology</p>	<p>Achieve water quality suitable for swimming:</p> <ul style="list-style-type: none"> - reduce faecal inputs <p>Improve access</p> <p>Improve amenity</p>	<p>Achieve sustainable urban development:</p> <ul style="list-style-type: none"> - maintain and improving water quality - provide housing stock and built environment that meets the communities needs <p>Provide sustainable and resilient water infrastructure</p>	<p>Achieve sustainable land management and land use practice</p>	<p>Provide for Māori use including mahinga kai</p> <p>Restore the mana of Te Awarua-o-Porirua</p>