Greater Wellington Regional Council: Collaborative Modelling Project

Te Awarua-o-Porirua Whaitua Committee 2 July 2015

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Whaitua
Collaborative Modelling Project

- Bringing together the knowledge required to test land use and resource limit scenarios
- Mirrors the whaitua process – it is based on consensus
- A collaborative modelling hub jointly agrees on what models and knowledge are ‘fit for purpose’ and who is doing what
- Delivers trusted knowledge/science
- The whaitua committee is ‘the client’ - provides potential management scenario questions
Modelling

- Modelling informs decision-making on the potential impacts of setting freshwater objectives and limits
- Modelling provides likely outcomes and consequences of policy options
- Models are used to fill in the gaps and make best use of data
- Models are used to make predictions
- A management scenario - what the future may look like for a catchment
Collaborative Modelling Project

- Key modelling phases:
  - Developing an Overarching Knowledge Framework
  - Ruamāhanga whaitua modelling:
    - Scenarios incl. status quo
    - Limit setting
    - Managing to limits (implementation)
  - Modelling for other whaitua – Te Awarua-o-Porirua is next
  - It is a social process as much as delivering science
It is a social process

- Subgroup & lead modeller have multiple meetings/teleconference
  - Lead modeller facilitates discussion & moderates any differences. Rules of engagement are confirmed (timeline, criteria, frequency of meeting, output, scope, who is missing, roles)

- Subgroup & lead modeller produce an output eg, scope or project plan
  - Scope designed, architecture put together, project plan agreed Lead modeller keeps project manager informed

- Lead modeller passes on the 'output' to weavers/integrators panel for review & feedback
  - Weavers/integrators review the architecture and project plan. Provide feedback to the lead modeller and the subgroup. Lead modeller keeps project manager informed.

- Lead modeller receives the feedback & discusses it with the subgroup
  - Subgroup and lead modeller make any amendments if needed.

- Final agreed project plan to GWRC for perusal
  - Project plan needs to be in a form easily transferable into contracts: description, milestones, tasks within milestones, estimated hours & cost, persons responsible for delivery of tasks

- GWRC contracts the work as per the agreed project plan
  - Individuals from the subgroup contracted for their discrete tasks.

- Outputs of modelling
  - Unresolved difference of opinion transferred to a panel of peers

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Resolving differences

Unresolved difference of opinion transferred to a panel of peers

1. Resolving differences
   - 1st instance: lead modeller facilitates & moderates differences
   - Lead modeller informs project manager of the issue

2. Differences not resolved and consensus not reached: lead modeller passes on unresolved differences to a panel of peers

3. Panel of peers
   - Experts in the field
   - Have relevant qualification or experience
   - Disclose conflict of interest
   - Not members of subgroup

4. Panel of peers
   - Forum to provide technical, scientific & any other professional advice

5. Panel of peers
   - Reaches consensus and settles the differences

6. Differences resolved.
   - Lead modeller and project manager informed

7. No further action

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Why we doing this?

- Removes ‘my science is better than your science’
- Creates ‘our science’
- Drives ‘for fit for purpose’ modelling through consensus
- Enables co-development = ownership
- The whaitua committees and communities - trust in the outputs, not arguing the process by which we got there
- Better buy-in
- Creates building blocks for future decision-making
What is the overarching knowledge framework?

- Organisation of all knowledge and how knowledge is used to inform the values/limit setting process
- A holistic approach – Cosmopolitan/Pākehā and Māori world views
- A process to enable information/knowledge to feed into the whaitua values/limit setting process
- Conceptual, replicable framework that can be used at any scale
Five guiding principles

1. Managing natural and physical resources in a holistic manner, recognising they are interconnected and reliant upon one another.
2. Recognition of and respect for mauri and the intrinsic values of natural and physical features and including the connections between natural processes and human cultures.
3. Partnership between the Regional Council, iwi and the community, based on a commitment to active engagement, good faith and a commonality of purpose.
4. Recognition that we all have a part to play as guardians to maintain and enhance our natural and physical resources, for current and future generations.
5. Recognition that our actions will be considered and justified by using the best available information and good judgement.
Mātauranga Māori Framework
Matāuranga Wairarapa

5 Guiding principles

Knowledge

Māori, Shared, Cosmopolitan

Nā te rourou, nā taku rourou,
Ka e ai te ra
With your basket and my basket the people will thrive
Collaborative modelling

Ruamāhanga Whaitua Modelling Architecture
8 May 2015

- 5-map coverage for Plains
- VCN 500m climate data
- Land Use Map for Plains

SPASMO Modelling
- Irrigation demand Drainage (each grid square) 1972-2015
- VCN 500m climate data

SPASMO Crop yield modelling (representative farms from MPI) 1972-2015

Economic Modelling (MPI)

TopNet/Ches
- Includes updating: To LCDB3 & REC2
- Calibrate to status quo 1972-2015

ModFlow – hydrology upgrade (GW/SW):
- Set up stream network; TopNet outputs; use SPASMO outputs
- Calibrate to status quo 1972-2015

MT3DMS Setup; calibrate GW quality to status quo 1972-2015

CLUES/SEDNET or eSOURCE
- Set up SW quality model
- Calibrate to status quo 1972-2015

Overseer Nutrient Modelling (MPI)

Lakes Modelling

Ecological Modelling

SPASMO not secured; Irricalc will be used
What have we learned?

• Ensure everyone understands the process & what it involves – ‘have it in writing’

• Clear mandate for all parties

• Clarify and agree on language & terminology, & their meaning

• Organisational buy-in is not enough – secure funding & resourcing
And still learning...

- Allow iwi to have their own safe space
- Don’t try to ‘integrate’ mātauranga Māori, allow it to have its own space; weave the knowledge in
- Allow more time, much more than you think
- It is not a sprint it is a marathon
Thanks