Modelling & Assessment Framework

The Modelling Leadership Group - Ned Norton on behalf
6 October 2016

Outline (15 mins):

1. The process we've used to build it
2. A (high level) diagram
3. The main components – 13+ work briefs

Then:

- Discussion / questions?
- Feedback from CMP Working Group?

1. The process we've used…

"The modelling framework being developed by the MLG is broad and multidisciplinary. It must cover the effects of <u>urban</u> and <u>rural land</u> and <u>water</u> <u>resource use</u> on both water <u>quantity</u> and <u>quality</u>, on <u>freshwater</u>, <u>harbour</u> and <u>coastal waters</u>, and must encompass <u>environmental</u>, <u>social</u>, <u>cultural</u> and <u>economic</u> aspects. A set of multiple interacting models and stand-alone models is required to deliver this coverage."

… the process we've used…

- Anticipate questions to answer (e.g. scenarios)
- Consider attributes to assess against
- …
- Individual MLG members prepared draft work briefs – discussed with other experts
- Internal MLG technical review of each draft – multiple exchanges
- MLG focus on both content & integration between briefs
- External peer review for some briefs - where preferred provider(s) are nominated
- Multiple tender approach for some briefs – to assess alternative approaches
- …
- Plan to commission work (GW) – by December 2016
- …
- On-going MLG involvement as work is undertaken by various providers
- MLG review & integration of all outputs
- External peer review of final draft reports

2.   A (high level) diagram... [see your large copy]
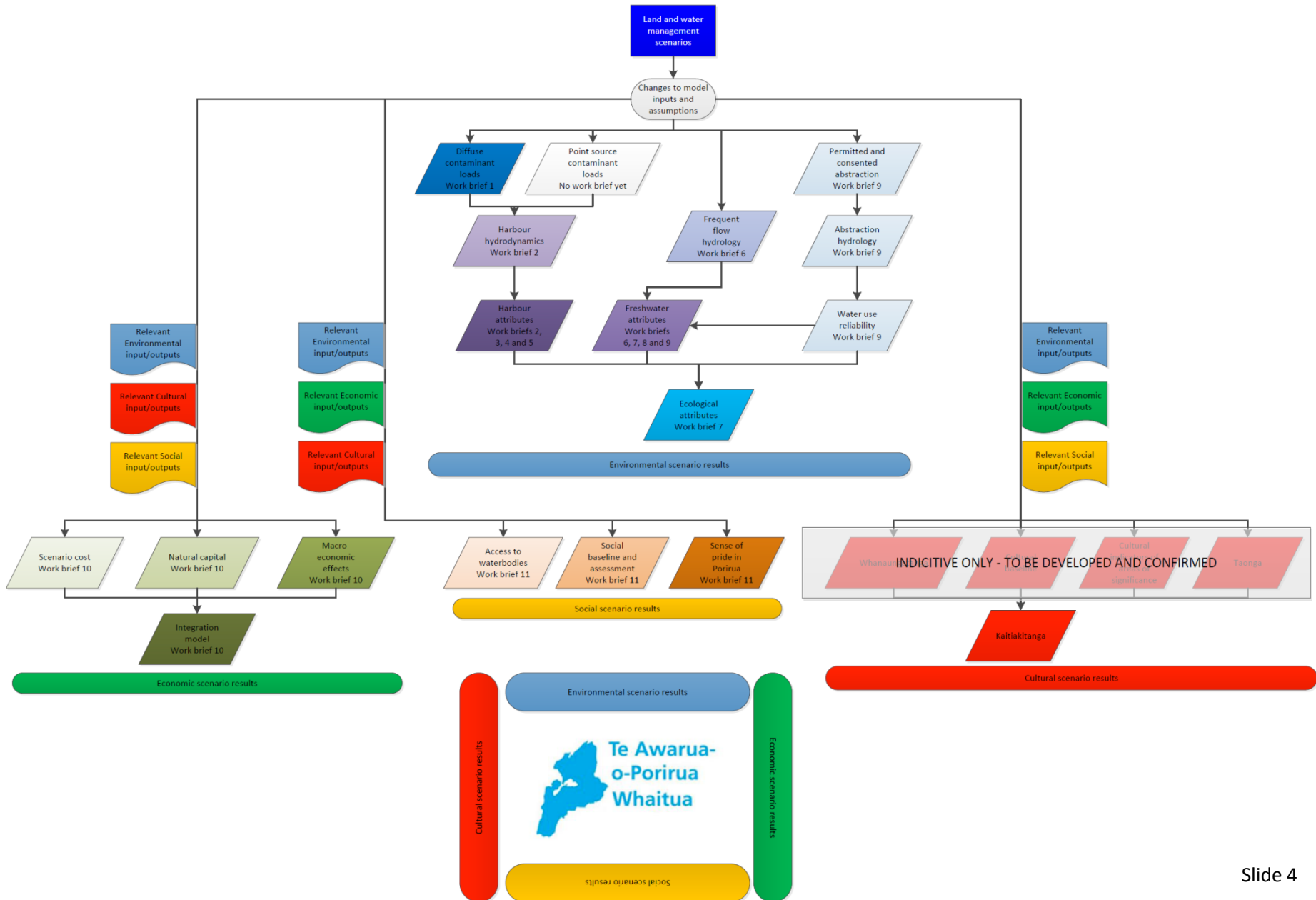
3.   Main components – 13+ work briefs

1. Diffuse contaminant loads (both urban & rural)
2. Harbour : Suspended-sediment, clarity & event deposition
3. Harbour : Sedimentation, seabed muddiness and metal accumulation
4. Harbour : Eutrophication (nitrogen)
5. Harbour : Microbiological indicators
6. Urban effects on stream 'frequent flows'
7. In-stream concentration-based attributes
8. A Bayesian Network Model (the "BN")
9. Environmental flows and water allocations

…work briefs continued…

10. Economics

       - Scenario cost model

       - Natural capital assessment model

       - Macroeconomic effects model

       - Scenario integration model

       - Mitigation implementation paths & adoption process

10. Social assessment: baseline and assess scenarios

11. *Cultural assessment: baseline and assess scenarios

12. *Point discharges: Wastewater overflows

…other bits we are working on…

- Other point discharges – identify & document (septics, marina)
- Permitted takes – identify and estimate volumes
- Map existing habitat area for key species (inanga, seagrass)
- Consideration of climate change

………………………

Now:
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- Feedback from CMP Working Group?