

**Towards
sustainable
drinking water
quality**



MelbourneWater



Today's presentation

- Catchment management in context
- Open catchments and sustainable risk management
- Multi criteria analysis for comparing options
- Likely next steps



Context

- Need for integrated catchment management
- Regional – Water Quality Improvement Plan
- Melbourne Water as a water resource custodian
- Melbourne Water as a river health custodian
- Economic regulation – Water plans
- Drinking water regulation



Melbourne's water catchments



**Potential contamination during storms to storages
and aqueducts**

Risk assessments

- 5 years of risk assessments
- Land use per land parcel
- Hazards per land use
- Models for fate of hazards to receiving waters
- Hazards to water aesthetics as well as public health



Risk management

- Downstream options
- Voluntary catchment programs
- Statutory land use controls
- Land acquisition & vegetation
- All have significant environment, economic and community impacts

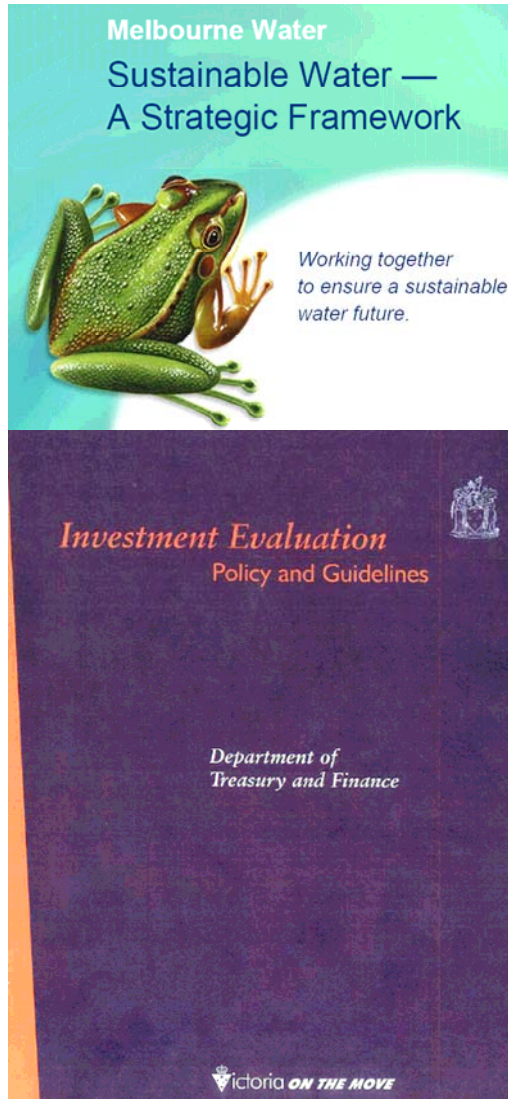


Response to risk assessments

- Significant hazard does not equal significant risk
- Qualitative information only, need to learn more
- Need to protect efficacy of downstream barriers
- All management options have long lead times
- Refinement of management options needed



MCA Process



Multi Criteria Analysis (MCA)

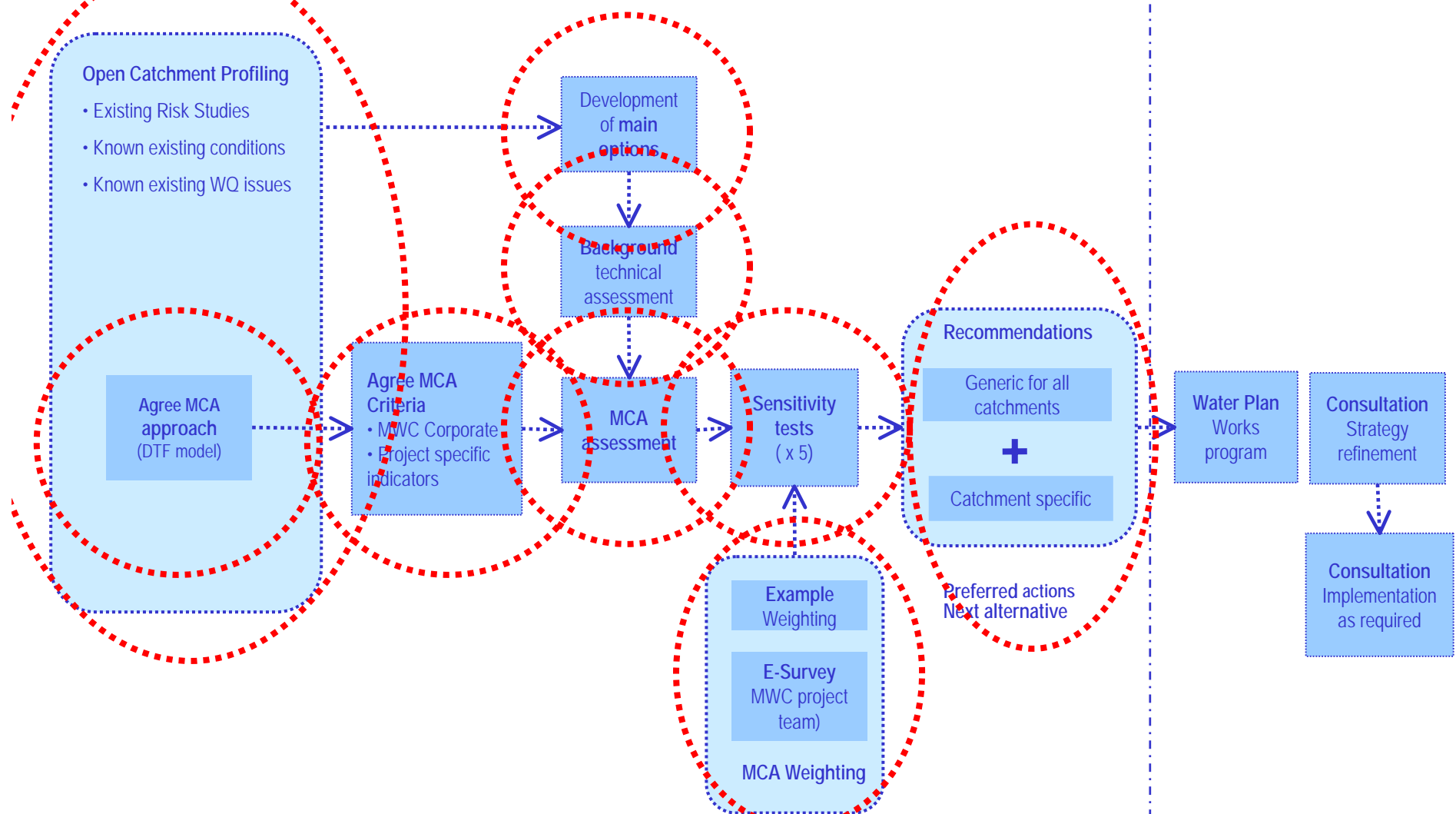
- Qualitative and quantitative
- Adoption of DTF model as basis for framework

Processes

- Criteria development based on Melbourne Water vision and goals
- Collaboration and use of experts

Overall Process

Overall Evaluation process



14 x MCA Criteria

MCA Criteria	Specific Indicator / Criteria
Water Resources	1. Loss of water from existing assets (eg aqueducts)
	2. Reduction in access to Bulk Entitlement
Public Health	3. Impact on public complaints and risks to water aesthetics
	4. Certainty of management of Health Risks
Natural Environment	5. Estimated direct greenhouse gas emissions
	6. Impact on river health
	7. Estimated total water treatment chemical use
	8. Estimated total chemical use on farms / agriculture
	9. Net change to habitat or vegetation cover
Financial Viability	10. Net present value
	11. Estimated impact on broader economy
Infrastructure	12. Estimated Waste disposal (solid & water)
Relationships	13. Likely impact on relationships with Councils
	14. Likely impact on relationships with regulators

Weighting and scoring scenarios

Used to test and compare the technical assessments

- E-Survey Weighting for project stakeholders
- Environmental weighting
- Financial weighting
- Public health



MCA Lessons

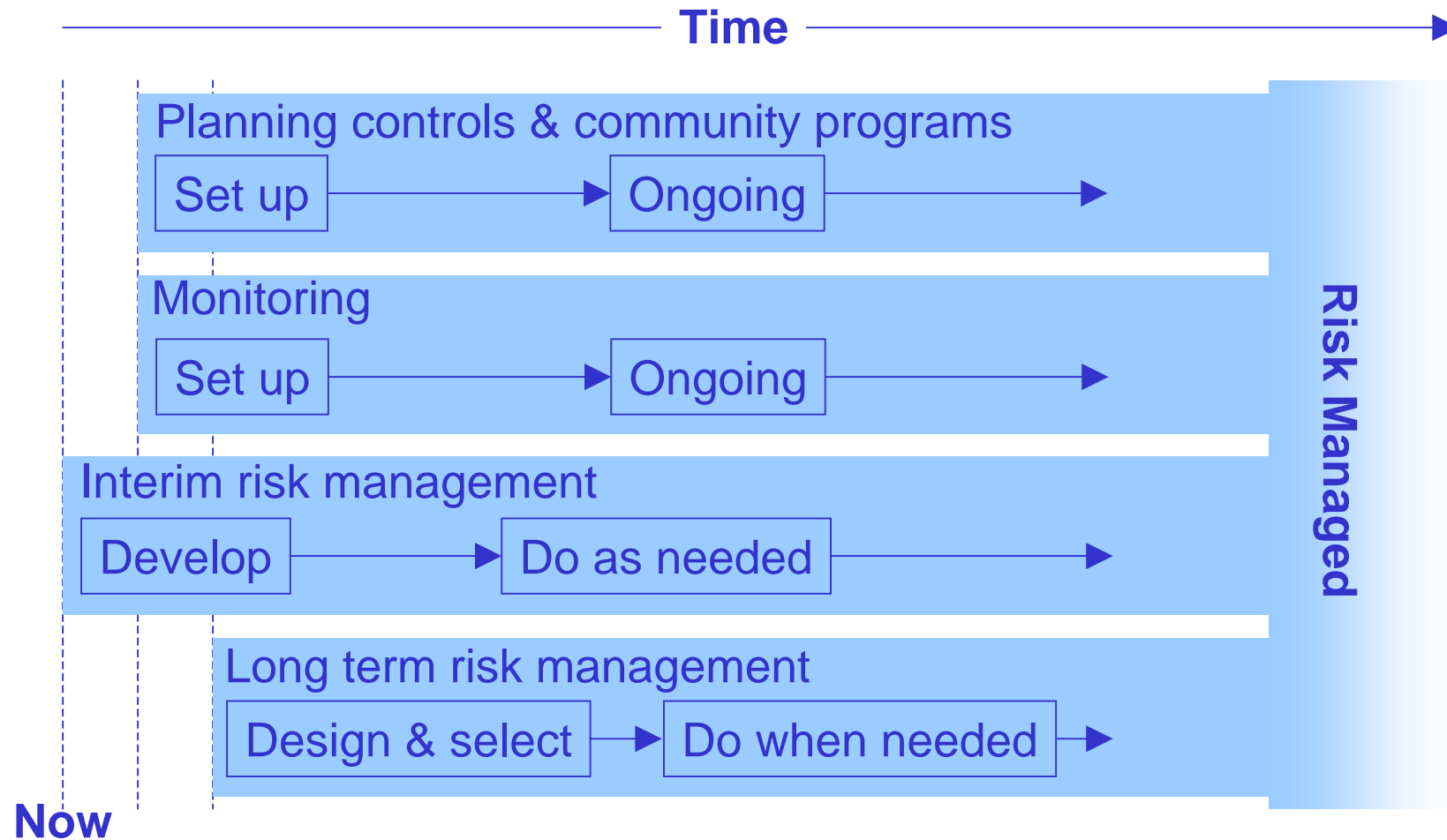
Multi Criteria Analysis

- Enables a holistic high-level economic outlook
- Essential in considering non-technical aspects
- 'Weighting' used scenarios to test relativity between options

Scoring process and information requirements

- Collaborative approach is essential
- Complex and time consuming (150 different combinations)

Likely next steps



Long term management options

- MCA for highly ranked options
- 'Best guess' environment, economic & community impacts
- Studies to improve estimates to verify preferred option
- Allow for preliminary long term costs 'just in case'



Summary

- Significant hazards but risk uncertainties
- 2008-13 Water Plan to:
 - reduce uncertainty
 - minimise risk creep
 - engage catchment communities
 - establish need for major change
- Major changes to be implemented after 2013

