

# Principles for Development and Use of Analytical Tools and Data<sup>1</sup>

## Strategy:

- 1) Data and analytical and communications tools should be based on expected long-term water problems and the decision-making processes they are expected to inform.
- 2) A strategic analysis framework should identify the technical objectives, roles, and responsibilities of major data collection efforts and models.
- 3) Strategic documents should be prepared and made available to the public. They should undergo periodic internal and external review, with substantial input from stakeholders, to identify needs for additional analytical tool and data development.
- 4) A frequently updated implementation document should outline short-term and long-term efforts, budgets, and responsibilities for continuous improvement of models and data. A sustained process for stakeholders input should be defined and adopted.

## Transparency:

- 5) All data and models should have sufficiently detailed documentation.
- 6) Known limitations and appropriate applications should be documented.
- 7) Model applications should include explanatory & self-critical discussions of results, including uncertainty analyses.
- 8) Data, models, and major reports should be in the public domain, available on the web, and regularly updated.
- 9) A common glossary of key terms and acronyms should be maintained.

## Technical Sustainability:

- 10) Modularity: Major models should be designed and implemented to fit modularly in the larger strategic analysis framework, allowing models to be tested, refined, updated, and replaced without major adjustments to other components.
- 11) Adaptive information management framework: Major data and information efforts should fall within a larger information management framework, including protocols for data documentation and updating, and documentation of limitations.

## Coverage:

- 12) The spatial coverage of the basic data and analytical framework should be statewide and encompass a wide variety of water management options and processes.
- 13) Local and regional water management interests and resources should be explicitly represented to allow consistency among local, regional, and statewide studies.

## Accountability and Quality Control:

- 14) Explicit testing should be done, documented, and available for major models.
- 15) Protocols and guidelines for model use should be developed and adhered to.
- 16) Major analytical products should be reviewed by both external experts and local agencies whose systems are included in the model(s).
- 17) In developing and maintaining models, serious efforts should be made to involve local agencies and stakeholders, including users groups or other cooperation mechanisms.

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<sup>1</sup> From “A Strategic Analysis Framework for Managing Water in California”, California Water and Environmental Modeling Forum, September 2005. [www.cwemf.org](http://www.cwemf.org).