

DRAFT — Process for Identifying State and Regional Integrated Water Management Activities

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Purpose and Use

This text describes the process for identifying and recommending *State government* and *regional* integrated water management (IWM) activities for State funding per Component 2 of the finance storyboard and is a companion document to several flow charts that show the proposed process of:

- Compiling an information base.
- Applying assumptions about the future.
- Articulating resource management objectives.
- Forming packages of IWM activities to meet multiple objectives (based on assumptions and objectives).
- Deriving information to support the development of recommendations.
- Developing investment recommendations and accompanying information.

Upon refinement of this process by California Water Plan advisory groups, a tool will be developed to help gather and store information, as well as apply the methodology described herein and on the flowcharts. The methodology will inform responses to the following policy questions, thereby supporting the development of Update 2013's finance plan investment recommendations.

- 1) What types of activities are California's 48 integrated regional water management (IRWM) groups planning to implement?
- 2) What types of activities are the State agencies planning to continue/implement?
- 3) What is the total cost of State government and regional planned IWM activities?
- 4) Do the priorities or implementation strategies change with different assumed future levels of State funding?
- 5) What are the types and magnitudes of IWM benefits expected to occur from recommended activities under the various future funding, planning horizon and other assumptions?
- 6) Which activities is the State government best able to implement (Component 5 of the finance storyboard) and what is the magnitude of that investment (Component 6 of the finance storyboard)?

This does not address the matter of funding mechanisms or the distribution of benefits and costs among stakeholders. A separate process will be developed for structuring and supporting those discussions. The finance plan's development will be iterative; therefore, in the event that a recommendation for funding an activity (or package of activities) is contingent upon benefit and cost distribution or funding mechanism, this process can be reapplied at a later time when an understanding of how it will be funded, and by whom, is clear.

Flowchart Steps

Information Base

Each of the 48 integrated regional water management planning groups will be asked to express its priorities (and their accompanying assumptions). It is likely that in many cases, IRWM plans will be a reflection of IWM activities that are important for that area.

Similarly, the Water Plan State Agency Steering Committee, Finance Caucus and other Water Plan advisory groups will collaboratively develop IWM priorities for activities to be administered by State government. Resource management objectives, activities, costs and other information will be obtained through *California Water Plan Update 2009* (Update 2009), State companion plans and focused interactions with the State Agency Steering Committee.

Scenario Assumptions

In order to develop practical decision support for future State IWM activities, many assumptions must be made about future conditions. The framework for preparing the finance plan will include a method for articulating priorities at different scales (regional and statewide) and under different sets of assumptions about the future. Assumptions and, in some cases, estimates will be made regarding key drivers, such as society's future ability and willingness to pay, hydrology, planning horizons and perhaps more, as deemed relevant by Water Plan participants. The table below provides an example of one potential method for articulating these assumptions.

Jurisdictional Scale	Planning Horizon		
	2015-2020	2025	2030
IRWM	1	2	3
State	1	2	3
Federal		2	1
Private	1	2	3

- Level 5** — Flourishing economy (baseline general fund appropriations similar to _____ year) and strong infrastructure investment climate conducive to full implementation of water plan recommendations
- Level 4** — Conditions conducive to investments at a rate similar to 2012 bond, plus ongoing appropriation for sustainable operations and maintenance
- Level 3** — 2010 (current condition with bond)
- Level 2** — 2010 (current condition without bond), year 2000
- Level 1** — Low resources, all-time low infrastructure investment profile (try to find marker 1932?)

Resource Management Objectives

Regardless of the variability of scale (e.g., local, regional or statewide) and level of detail (e.g., quantitative, qualitative, project-level or strategic-level), resource management objectives still must be identified as a basis for recommending IWM activities as well as to ensure that the chosen activities are within the scope of the finance plan. This methodology will incorporate the best available information regarding resource management objectives and encourage development of recommendations despite the limitation described above. Just like the information base and scenario assumptions, information sources will include existing plans,

such IRWM plans, Update 2009 and State companion plans, as well as stakeholder input from various California Water Plan venues.

Response Packages

Each of the activities and tools in the information base can be implemented to varying degrees, in different areas and at different times. They also can be implemented in different “response packages” to achieve multiple objectives that result in enhanced outcomes compared with single-activity implementation approaches. This process will include the formation of response packages at the regional and statewide level for the examination of trade-offs, generally in the form of costs and expected benefits. The response packages, coupled with descriptions of costs and benefits, will form different permutations of “investment packages.”

Costs

This process will include collecting cost data for response packages. Potential refinements can be developed for response packages that are advanced as recommendations by water plan participants, as the purpose of the cost estimates changes from a relative comparison of response packages to predictive estimates of investment requirements. The goal is to capture all costs, including capital, operation and maintenance, forgone investment value and contingencies. Subject experts and stakeholders will develop the most useful categories in a comprehensive template. The purpose of the template is, like the activity categories, to help capture and synthesize local, regional, State and other cost data, such that it is adequately standardized for the comparability aspect of this process. Per Component 8 of the finance storyboard, the cost of *not* investing for a specified timeframe will be developed. This type of cost is generally expressed in the form of water reliability, flood and environmental degradation risk levels. Specific categories/criteria will be developed by Water Plan participants. This is akin to a “no action” scenario that can be used as a basis for comparing potential costs of investing in response packages (and potential benefits of reducing the risks described above).

Benefits

In an effort to align resource management decisions regarding future State government investment in IWM activities with State and regional resource management objectives, the types and magnitudes of benefits will be estimated and presented in tandem with the response packages. Descriptions and (where available) estimates of benefits from regional activities can be extracted from IRWM plans and articulated in regional forums. For State-administered IWM activities, benefit information will be compiled from Update 2009, State companion plans, the State Agency Steering Committee, the Finance Caucus and regional forums and will be vetted through many, if not all, other water plan collaboration venues.

Investment Packages

Investment packages are formed by coupling response packages with cost estimates and qualitative benefit descriptions (and quantitative estimates where available). The investment package permutations will be compared and considered for comprising investment recommendations (see description below) in the finance plan.

Investment Recommendations

The final funding recommendations will use emerging patterns of common activities/areas from the various regional and State government investment packages (which include local assistance) as guidance for where, and to what magnitude, future State IWM funding should be directed.

Future Refinements

[This section is under development and intended to be a placeholder for acknowledging limitations of this approach and planned improvements in future California Water Plan updates.]

The Update 2013 finance plan will be based on the best available data, tools, models and subject expert opinion. Many areas will require continued refinement in order to increase uniformity, accuracy, quantitative analysis and comparability of information and approaches; advance scientific understanding; and generally reduce uncertainty. Below are some acknowledgements and proposals for such future refinements. For the Update 2013 finance plan, these issues will be acknowledged in the context of uncertainty and confidence levels. It is anticipated that actual reductions in these uncertainties (i.e., refinements to the finance planning approach and tools) will take place during the Update 2018 process.

Uncertainty and Risk

It will be necessary to use a variety of methods, assumptions, estimates and approaches in preparing information about activities, benefits, costs and other trade-offs. Also, there are varying degrees of scientific and other uncertainty within and across the different categories of activities for potential State investment. The finance plan framework will emphasize the articulation of uncertainties and risks associated with all conclusions and recommendations.

Co-Dependence of Activities

Although resource management strategies and tools are often presented as individual alternatives, they can complement each other or compete for limited system capacity, funding, water supplies or other components necessary for achieving desired benefits.

Project Vs. Program Scales

Depending on how and where it is implemented, how it is operated, and how its benefits and costs are distributed, virtually any resource management strategy can produce a net benefit or net negative impact for any objective.

Time Scale and Adaptive Management

[Text to come]

Stakeholders Not Covered or Involved in an IRWM

[Text to come]

Systemic Optimization

[Text to come]

Standardization of Methods, Information and Estimates

[Text to come]

Identification of Diminishing Returns

[Text to come]

Assigning Economic Value to Environmental Assets and Services

[Text to come]

Double Counting of Costs

[Text to come]