



California Department of Water Resources
Sustainable Groundwater Management

Fiscal Cost Analysis for Proposed Modifications to Basin Boundaries

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DRAFT

1.0 *Summary*

Fiscal costs to comply with the proposed basin boundary regulation are estimated. These costs include 1) costs to applicants for preparing the application package required by the regulation; 2) costs to DWR, the Commission, and other state agencies to review the information provided in applications and modify the boundaries; and 3) costs needed for other meetings and consultations with DWR and the Commission that are reasonably required by the regulations.

As an emergency regulation, the basin boundaries regulation requires an analysis of fiscal impacts to state and local governments, and costs associated with federal funding of state programs. Significant uncertainty associated with data and assumptions, in particular, the number of requests for basin boundary changes, suggest that the range of potential cost is large.

This analysis is for the first round of boundary revisions which will lead to changes in DWR Bulletin 118 boundaries which will be finalized in Update 2017. There will be future opportunities to make boundary modifications after 2017, but the number of future modifications is uncertain so any cost estimates would be too speculative for this analysis. Most of the cost included in this report will be incurred by March 2017.

The low-end estimate of fiscal costs assumes that 85 basin boundary modifications will be requested. The high-end estimate assumes 225 basin boundary modifications will be requested by 2017.

Table 1 provides a summary of the quantified State and local costs of the Basin Boundaries regulation.

Table 1. Estimated Fiscal Costs of Basin Boundary Regulation, Total by 2018		
Who incurs cost	Million \$ range¹	Million \$ median¹
Department of Water Resources	\$0.83 to \$2.19	\$1.51
Local Agencies	\$9.31 to \$49.51	\$29.41
Total	\$10.14 to \$51.71	\$30.92
1. Rounded to nearest \$10,000		

2.0 Introduction

There are currently 515 alluvial groundwater basins in California. DWR’s Bulletin 118 series presents the results of groundwater basin evaluations and defines the boundaries of these groundwater basins. The Sustainable Groundwater Management Act of 2014 (SGMA) establishes a process for local agencies to request that DWR revise the boundaries of a groundwater basin, including the creation of new subbasins (California Water Code (WC) § 10722.2). By January 1, 2016 DWR will adopt Emergency Regulations that define 1) the criteria for requesting that a groundwater basin's boundary be revised, or a new subbasin be formed, and 2) the methodology for revising the basins. Without a request for revision, groundwater basin boundaries will remain as identified in Bulletin 118.

SGMA states

The department shall adopt the regulations, including any amendments thereto, authorized by this section as emergency regulations in accordance with the Administrative Procedure Act (Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code). . .

Notwithstanding the Administrative Procedure Act, emergency regulations adopted by the department pursuant to this section shall not be subject to review by the Office of Administrative Law and shall remain in effect until revised by the department.

Under standard rulemaking requirements, the rulemaking agency would prepare a complete economic and fiscal impact analysis for review by the Department of Finance. As an emergency regulation, the Administrative Procedure Act requires only an analysis

of fiscal impacts to local governments, to the state, and to federal funding of state programs (Cal Govt Code §11346.1).

Costs of the regulation would fall primarily on State agencies, primarily DWR, and on local agencies that will propose or be affected by proposed basin boundary modifications. For local agencies, grant funds are expected to be available to help offset the costs of compliance with SGMA. Local agencies, as defined in WC § 10721(m), include local public agencies that have water supply, water management, or land use responsibilities within a groundwater basin. These public agencies will likely recover any costs related to this regulation through their water charges and assessments, so all costs would eventually be passed onto the customers (nearly all being private businesses and individuals). Even though all fiscal costs must eventually become private costs, the direct fiscal impacts on state and local governments are considered and displayed here.

DWR staff, assisted by its consultants, has prepared an analysis of fiscal costs based on a combination of existing studies, new information provided by local agencies, and other assumptions as needed to generate a reasonable range of fiscal costs. This memorandum describes the methods, data and assumptions, and results of the analysis.

3.0 Methods

The approach uses detailed descriptions of expected work activities to develop cost estimates. The cost estimates are informed by similar recent projects and local costs of participating in meetings and preparing grant funding applications. Steps and activities used to develop the estimates are as follows:

- Compile and review existing information and studies related to costs of revising basin boundaries, including all studies, reports, and internal analyses prepared to support the regulation development;
- Develop an expected range of costs to applicants for preparing the application package required by the regulation, attending meetings, and responding to questions and requests for modifications;
- Estimate costs to DWR, the Commission, and other state agencies to review applications, interact with applicants, modify the boundaries and prioritize basins; and
- Estimate costs needed for other plan and permit modifications, if any, which are reasonably required by the modified basin boundaries.

Based on review of the expected process, the following detailed activities are expected.

1. Local agencies prepare basin boundary modification applications

If a local agency requests to modify the boundaries of a basin, it must supply the following information to DWR (WC § 10722.2(a)):

- Information demonstrating that the proposed adjusted basin can be the subject of sustainable groundwater management.
- Technical information regarding the boundaries of, and conditions in, the proposed adjusted basin.
- Information demonstrating that the entity proposing the basin boundary adjustment consulted with interested local agencies and public water systems in the affected basins before filing the proposal with DWR.
- Other information DWR deems necessary to justify revision of the basin's boundary.

The specific set of information, analyses, and coordination activities required are provided in the proposed regulation. A detailed analysis of expected activities for three different types of basin boundary modification applications, a range of cost per application, and a range of potential number of applications, was developed for DWR. The expected activities, costs and ranges are shown in Table 2 below.

2. DWR reviews applications and takes action on requested basin boundary modifications

The state's costs will include review of basin boundary modification applications, modifying the boundaries, and work required for prioritizing basins and revising existing plans. The methodology and criteria for modifying the boundaries of a basin must consider all of the following (WC § 10722.2(c)):

- The likelihood that the proposed basin can be sustainably managed.
- Whether the proposed basin would limit the sustainable management of adjacent basins.
- Whether there is a history of sustainable management of groundwater levels in the proposed basin

DWR costs associated with basin boundary modifications, after the regulation is adopted, will be incurred for the basin prioritization process which is required when basin boundaries are changed (WC § 10722.4). DWR is also considering making cleanup adjustments to exiting basin boundary lines based on updated, higher-resolution geographic information or technical information.

Any modification to a basin boundary will have an impact with each individual basin or subbasin that is modified. New and existing basin boundary descriptions and related GIS files will need to be processed to support the new boundaries. New boundaries may cause a reduction or increased effort in order to process internal, consolidation, or subdivision modifications within the basins or subbasins.

DWR will also provide an opportunity for the public to comment on the draft approved basin boundary modifications prior to presentation to the California Water Commission and final approval and publication in Bulletin 118.

Table 2.

Potential Range of Applicant Costs for Basin Boundary Modification

Complexity		Simple	Moderate	Complex	
Modification Type		Scientific Modification			
		Internal			
			Consolidation		
			Subdivision		
Conditions	Scientific	Mostly existing information	Mostly limited information	Little existing information	
	Jurisdictional	Few Stakeholders	More Stakeholders	Many Stakeholders	
		No Conflict	Potential Disagreement	Disagreement	
		Simple Management	Moderate Management	Complicated Management	
Activities	Technical	Compile, review, and present existing information	Prepare new information	Perform field work	
			Collect new data		
		Present developed information	Prepare Maps, Contours, Reports, Conclusions		
			Present new information		
	Administrative	Coordinate scheduling for a few agencies	Coordinate scheduling for up to 10 agencies	Coordinate scheduling for more than 10 agencies	
		Secure a few Resolutions of Support	Secure up to 10 Resolutions of Support	Secure more than 10 Resolutions of Support	
	Outreach	One public meeting	A few Public Meetings	Five or more Public Meetings	
		Public Involvement at less than 10 Board Meetings	Public involvement at around 10 Board Meetings	Public involvement at More than 10 Board Meetings	
	DWR	Simple and Fast Review	Moderate Review	Difficult and/or Contentious Review	
		No Follow-up Needed	Some Follow-up Needed	Extensive Follow-up Needed	
		Range of Cost per Application	\$50-\$100k	\$100-\$280k	\$280-\$450k
	Estimated Number of Modifications by Complexity		25 to 100	50 to 100	10 to 25

3. Commission reviews and comments on DWR's draft approved basin boundary modifications.

The California Water Commission (CWC) will hear and comment on any draft modification to a basin boundary (WC § 10722(e)).

4. State and local agencies participate in process to prioritize basins

Water Code Sections § 12924, 10933 and 10722.4(c) direct DWR to revise and prioritize groundwater basins based on existing and new information. To the extent that basin boundary modification requests trigger prioritization, the activities to do that are summarized below. We note that some of these activities would likely occur in absence of the proposed regulation.

The CA Department of Fish and Wildlife (DFW) and NGO partners will provide initial data to assist in assessing groundwater's relationship with local habitat and streamflow within groundwater basins. This data along with groundwater extraction data will be used to provide additional criteria that must be included in the priority assessment of each Bulletin 118 groundwater basin and subbasin.

To support the new dataset, the existing database (DB) tool will require modifications to the application interface. More automation of reports, data management and reporting will be required. New data that was not available when the basins were previously prioritized will be reviewed and modified and merged into a single dataset, with the ultimate objective of a dataset that will allow ranking for all groundwater basins including habitat and streamflow degradation. The DB Tool will need to be expanded to support this project. The DB will also need to be updated with rankings for all of the criteria using the modified basin boundaries.

Staff from DWR's Region Offices (RO) will need to review the results of all basins and provide changes with supporting material. Feedback will need to be tracked, processed, and documented with the DB updated as required.

Two sets of outreach will occur. The first set will provide proposed basin prioritization methodologies to partners and will seek an understanding and agreement on the methodologies to identify groundwater extractions within a basin to local habitat and streamflow degradation. The second will be to share the draft ranking results that are triggered by the basin boundary modifications and provide the public with an opportunity for comment or provided updated data concerning draft results. The public outreach will be located in each of the RO areas with two meetings occurring in the southern RO area. The final rankings results will be released via webinar.

By state law, DWR is then required to produce a new release of the groundwater basin prioritization. After the outreach, public comment period, and implementation of final priority changes, the final reports, maps, summary sheets, and tables will be produced for viewing and downloading by the public. The documentation that shows the methodologies, data and results will need to be updated and posted to the DWR's website.

5. Other plan and permit modifications that are reasonably required by basin boundary modifications.

Basin boundary modifications and re-prioritization could trigger changes to existing plans, permits, or other requirements. No specific plan or permit modifications required by or triggered by the basin boundary modification regulation have been identified, and costs are discussed qualitatively.

4.0 Data Sources

Data sources include costs of recent similar DWR programs and costs of similar application processes based on a survey of agencies who submitted applications for grant funding.

4.1 Existing Studies

Several existing studies were relied on for specific information and cost estimates or as general reference. DWR (2014) has conducted three surveys of Integrated Regional Water Management (IRWM) grant applicants to estimate costs of preparing grant applications and participating in reviews. This information provided a basis for comparison with DWR's estimates of local basin boundary costs as shown in Table 4.

4.2 Information Requests to DWR

Staff made several requests to DWR staff and offices engaged in similar activities in order to help estimate Boundary Basin costs. DWR staff responded with the information discussed in Section 3. Also, DWR provided estimated costs of:

- Public meetings associated with the basin boundaries rulemaking process, as a reasonable estimate of public meetings to solicit public comments on the draft recommended basin boundary revisions;
- Proposition 84 Local Groundwater Assistance grant program, as a representative cost for the state's costs to manage a basin boundary modification request and review program;
- State and local cost estimates associated with prioritizing basins in response to the revised boundaries.

4.3 Regional Data

Hydrologic Regions used in DWR's Bulletin 118 were used as a convenient and appropriate way for assessing fiscal impacts. Table 3 shows the number of groundwater basins by region. This analysis does not differentiate expected local costs by region. There is currently not enough data about the number and complexity of applications by regions to estimate regional costs.

Hydrologic Region (HR)	Basin Count	High Priority	Medium Priority
North Coast	63	0	8
San Francisco Bay	33	0	7
Central Coast	60	9	15
South Coast	73	13	22
Sacramento River	88	5	18
San Joaquin River	11	7	2
Tulare Lake	19	7	1
North Lahontan	27	0	2
South Lahontan	77	2	4
Colorado River	64	0	5
State Total	515	43	84

Source: DWR. 2015. Groundwater Basin Prioritization Final CASGEM Basin Prioritization Results - June 2014
http://water.ca.gov/groundwater/casgem/basin_prioritization.cfm

5.0 Results of Analysis

This section summarizes the results of the cost analysis used to support the Economic and Fiscal Impact Analysis for the proposed regulation. The fiscal cost estimates are used in Form 399: Economic and Fiscal Impact Statement. Second, the sensitivity of the results to some key assumptions is discussed. Finally, a brief discussion of benefits is presented.

1. Local agencies prepare basin boundary modification applications

Table 4 provides the estimated cost of applications for local agencies.

Table 4. Cost Estimate for Local Application Costs Based on Table 2, Costs in \$1000							
Complexity	Number of Applications		Cost per application		Range of Cost, \$1,000		
	Low	High	Low, \$1000	High, \$1000	Low	High	Median
Simple	25	100	\$50	\$100	\$1,250	\$10,000	\$5,625
Moderate	50	100	\$100	\$280	\$5,000	\$28,000	\$16,500
Complex	10	25	\$280	\$450	\$2,800	\$11,250	\$7,025
Total	85	225			\$9,050	\$49,250	\$29,150

The range in expected number of applications is 85 to 225. With the additional range in cost per application for the three application types, the range in potential total cost is \$9.05 million to \$49.25 million. The median expected cost is \$29.15 million.

2. DWR reviews applications and adjusts basin boundaries

DWR's budget for the basin boundary adjustment program in 2015/16 including review of applications and revisions work is about \$985,000. Budget projections for 2016/17 are \$594,200 for continuing work for a total of about \$1.6 million. This is a reasonable approximation of cost that could be incurred through March 2017 if the maximum number of applications (225) is received. An uncertain cost may be required to include the boundary modifications in future updates to DWR Bulletin 118.

2a. Local comments on basin boundary revisions

One public meeting is expected to allow for public comments on the draft approved basin boundary modifications. This cost was estimated based on actual participation at public workshops for the draft regulation including information about the typical distance that participants travelled. For the draft regulation, 3 public meetings were held in Willows (60 people attended), in Visalia (80), and in San Bernardino (30). The people who attended the public meetings were mostly from the surrounding areas (within 50 miles) with a few people traveling a longer distance (100+ miles). One webinar (200 people) was provided so the public who could not attend or did not want to drive to one of the public meeting could attend remotely.

The estimated cost of attendance at these three meetings and the web-ex meeting, including attendance time, travel time, and mileage, was about \$200,000. For public comment on the basin boundary modifications, only one public meeting is assumed at a cost of \$60,000.

3. Commission reviews and comments on each application.

Commission staff estimates that its costs to support that activity are minor, and part of the normal preparation and distribution of materials prior to a Commission meeting and

preparation of minutes following a meeting (Ballanti, 2015). Therefore, no quantified costs are included.

4. Prioritization process

State agency costs and local costs for participation in public meetings are included.

4a. State agencies participate in process to prioritize basins

- Initial data supporting groundwater relationship to habitat and streamflow
This cost, incurred by DWR, is estimated to be about \$167,000.
- Database (DB) Tool Modification, Dataset Processing, Regional Office Review and Outreach
This DWR cost is estimated to be \$227,000
- Finalization and release of the basin prioritization, including incorporating the revised basin boundaries.

This cost is estimated to be \$254,000.

4b. Local agencies comment on basin prioritization process

This cost was also estimated based on actual participation for the draft regulation meetings. The estimated cost of attendance at these meetings, including attendance time, travel time, and mileage, was about \$200,000. For local comments on the basin prioritization process, five public meetings, including one of the meetings webcast are assumed. This is a similar number of meetings as provided for the draft regulation, so the same cost of \$200,000 is included.

5. Other plan and permit modifications that are reasonably required by basin boundary modifications.

No specific plan or permit modifications required by the modified basin boundaries have been identified. Potential costs are discussed qualitatively below.

5.1 Number of Basins Potentially Requiring Boundary Revisions

These estimates were shown in Table 2. The potential range in the number of applications prepared is 85 to 225.

5.2 Estimated State Governance Costs

Total quantified state costs are shown in Table 5 below. Total State costs are estimated to be about \$2.196 million for the maximum number of applications, and the average cost per application would be \$9,758. If the low number of applications are received (85), it is assumed that all costs could be scaled down pro-rata and the cost would be \$829,000 (85 times \$9,758).

Table 5. Total State Costs of Basin Boundary Regulation	
Type of Cost	Million \$
Review Applications, Adjust Boundaries	\$1.575
Reprioritization	\$0.616
Total (maximum 225 applications)	\$2.195
Total (minimum 85 applications)	\$0.829

5.3 Estimated Local Governance Costs

Total local costs are the sum of application costs from Table 4, about \$29.15 million, plus public meeting costs associated with the boundary revisions (\$0.06 million) plus basin prioritization (\$0.2 million), for a total of \$29.41 million. Given the potential range in the number of applications, total local costs could range from \$9.31 to \$49.51 million. This range is believed to be large enough to encompass basin boundary modification requests after 2017.

5.4 Estimated Effect on Federal Funds

DWR has not identified any federal funding of State programs that would be affected by the proposed Basin Boundary regulation.

5.5 Potential Costs Not Included

Most uncounted costs should be associated with other plan and permit modifications that are reasonably required by basin boundary modifications. Costs may be associated with required analyses and document preparation to support/amend and update other plans or agreements as a result of a basin boundary modification, for example:

- California Statewide Groundwater Elevation Monitoring (CASGEM)
- Groundwater Management Plans (if applicable – costs may be rolled into Groundwater Sustainability Plan development)
- Salt and Nutrient Management Plans
- Integrated Regional Water Management Plans
- Regional Flood Management Planning

Other potential costs for basin boundary modification may include:

- Unusual costs associated with coordination with other agencies with groundwater-management and/or land-use responsibilities as a result of basin boundary modifications
- Unusual costs associated to respond to or protest a basin boundary modification proposed by DWR or by a neighboring agency
- Unusual costs of non-applicant neighboring agencies affected by a requested basin boundary modification

5.6 Uncertainty in Data, Assumptions, and Results

The cost estimates presented in this analysis are necessarily uncertain and therefore are presented as a range of costs. Both the number of total boundary change requests, and the complexity (and therefore cost) of each request is uncertain. The range in potential number of requests and the breakdown of costs by potential level of complexity are attempts to characterize this uncertainty. The analysis does not include explicit costs beyond 2017. However, the high range of number of applications and costs is believed to be sufficient to cover basin boundary modifications beyond 2017.

5.7 Potential for positive fiscal effects

The costs paid by State and Local governments to comply with the basin boundary regulation may be offset by significant cost savings in the future. First, there may be inefficiencies associated with existing boundary definitions that could be reduced with the new definition. Second, there could be cost savings associated with GSP compliance in the future. For example, if there are two defined basins now that can be combined into one, then the costs of preparing GSPs in the future could be reduced. On the other hand, if there is a basin that must be split because it's actually two distinct basins, GSP compliance costs might be increased, but inefficiencies associated with management of the incorrectly combined basin might be avoided.

5.8 Local Mandate

Section 9 of SB 1168 states:

No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

6.0 *References*

Ballanti, Rachel, 2015. Personal Communication. CWC Staff.

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