

*In April, a group of us ([Richard Roos-Collins](#), [Michael Kiparsky](#), [Nell Green Nysten](#), [Michael Hanemann](#), and [Holly Doremus](#)) wrote a document arguing for the need to develop a more complete and functional source of legal information on California's water rights. Since then, this [proposal](#) has been circulated widely among the California water community. In the spirit of broadening the discussion of these ideas, we post the original text below. The [full document](#) contains the appendix referenced here.*

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## **A Water Rights Database For California's Future**

California's economy, food security, and environment all depend on water. The current drought highlights challenges that our state will face in managing this resource in the future. One challenge is information technology. While the Water Code and case law establish general rules to allocate water in shortage, the State Water Resources Control Board does not have adequate information about nearly 30,000 individual rights to effectively administer these rules. We propose establishing a modern, online database that includes: (a) legal information on all surface water rights and (b) physical information on timing, quantity, and environmental effects of diversions under those rights, all organized and searchable in a manner that supports management decisions.

### **Current Databases**

The State Water Resources Control Board has paper records for all post-1914 appropriative rights issued under the Water Code. Any search in these records must be done manually, since individual documents in the files are generally not cataloged. The Water Board does not have paper records for riparian and pre-1914 appropriative water rights, other than recent statements of use. These rights are the senior rights in most basins, having arisen under the common law and Civil Code which predated the 1913 Water Code.

In 2007, the Water Board established an online database for water rights, eWRIMS. The database includes basic legal information on post-1914 appropriative



Figure 1. eWRIMS GIS interface

. It does not include scanned (downloadable) copies of most documents related to these rights. In turn, it does not describe critical terms for riparian and pre-1914 rights, or contain underlying legal documents such as land patents or notices of appropriation. Lastly, this database does not provide physical information in a form that permits analysis of water use patterns in a given basin across time. See Appendix 1.

In sum, the Water Board's paper records and eWRIMS cannot be used to answer fundamental questions necessary for accountability and effective management. These include: what are the relative priority dates for all rights in a given basin? How much water has been diverted under a given right, by year, since a given right arose? How much water is diverted in aggregate in a given basin?

## An Unprecedented Opportunity for a Modern Water Rights Database

Pursuant to Information Order 2015-002-DWR and Executive Order B-29-15 (paragraph 10), the State Water Board will collect legal information about riparian and pre-1914 appropriative rights, including patents and notices of appropriation, for the first time ever. It may also require more frequent than annual reporting of use under all rights, also for the first time ever. These initiatives have the potential to improve our working knowledge of our water rights system. However, it is unclear whether, when, or how this information will be integrated into eWRIMS.

We propose that the Water Board replace or modify eWRIMS, establishing a modern

database that includes the following key elements:

Legal Information. The database should include comprehensive information on the legal basis and character of all water rights.

For post-1914 appropriative rights, this should include: applications, resulting permits and licenses, orders or decisions amending the rights, and related environmental documents prepared under the California Environmental Quality Act or other authorities. For pre-1914 appropriative rights, this should include the notices that were the basis of the rights under the Civil Code and common law that pre-dated the Water Code. For riparian rights, it should include the patents and other land records necessary to show the basis and scope of the rights. For each right, the database should include all records of investigations, hearings, and orders; stakeholder comments; and reports or statements of use. All information should be searchable by right, date, location, document author, and other relevant parameters. All documents should be downloadable in electronic form.

Physical Information. The database should include comprehensive information on the timing and quantity of diversions under all water rights, across all reported years. It should include environmental monitoring data related to such rights. The physical (and legal) information should be organized in a Geographic Information System (GIS) to permit searches and analysis ranging from right-specific to a basin as a whole.

Other Elements. Over time, the database should be expanded to include information related to groundwater rights and uses, in the course of implementation of the 2014 Sustainable Groundwater Management Act. Further, it should be flexible enough to integrate other databases, such as hydrologic monitoring and forecasting, conveyance and reservoir operations, and environmental monitoring. In sum, the database should serve the needs of water rights holders, the Water Board and other regulators, and stakeholders engaged in planning and management of the water rights system.

## **Next Steps**

We will convene a workshop of stakeholders and experts to envision the form and functionality of such a database. We will develop technical specifications and budget, in cooperation with information technology partners. We will seek to locate non-public funding to contribute to implementation. We will present the proposal to the Brown Administration, including the Water Board, seeking a commitment to implement. We recommend implementation by December 2016, while recognizing the difficult technical and institutional barriers.

California is the birthplace of modern information technology. More so than any other place on earth, we have the capacity to establish a modern online database that facilitates effective management of our water resources. Now is the time to make it happen.