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Connecting the “Drops” of California Water Data: Chapter 506: The Open and Transparent Water Data Act

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Connecting the “Drops” of California Water Data: Chapter 506: The Open and Transparent Water Data Act

*J. Gage Marchini**

Code Sections Affected:

Water Code § 12400 (new).

AB 1755 (Dodd); 2017 STAT. Ch. 506.

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I. INTRODUCTION

Article X of the California Constitution declares that the general welfare “requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable.”¹ Senator Dodd authored the Open and Transparent Water Data Act to increase the efficiency of California’s water management and to help water managers across the state fulfill demands for water in the face of supply uncertainties.² California’s water data is housed among several agencies and other entities that serve as resources for water data resources.³ However, these sources of data are not easily accessed in coordination with one another by the water managers or water agencies who need the information to make critical water supply decisions.⁴

Several years of drought and excessive reliance on groundwater as a supply source led to negative impacts on water supply and the environment.⁵ Proponents of Chapter 506, the Open and Transparent Data Act, see it as an investment in improving California’s ability to manage its water resources more flexibly⁶ and a valuable resource in the implementation of the Sustainable Groundwater Management Act.⁷

II. LEGAL BACKGROUND

A. *The State of Water Data in California’s Water Resources Management*

After several years of drought, California’s water supply issues are more than apparent; however, the greater problem underlying the lack of water is the lack of easily accessible data for California water managers.⁸ When water resources are scarce, water managers are forced to make decisions about how to distribute their limited supplies of water.⁹ In order to make effective decisions, it is vital managers have access to the best available data—the more data available, the

1. CAL. CONST. art. X, § 2.

2. *Asm. Dodd Seeks to Improve Reliability of State Water Supply with New Bill*, Press Releases, Assemb. Bill Dodd (Aug. 12, 2016, 7:05 PM), available at <http://asmdc.org/members/a04/news-room/press-releases/asm-dodd-seeks-to-improve-reliability-of-state-water-supply-with-new-bill> (on file with *The University of the Pacific Law Review*); CAL. WATER CODE § 12401 (as enacted by Chapter 506).

3. Assemb. Bill Dodd, *supra* note 2.

4. *Id.*

5. TARA MORAN & AMANDA CRAVENS, CALIFORNIA’S SUSTAINABLE GROUNDWATER MANAGEMENT ACT OF 2014: RECOMMENDATIONS FOR PREVENTING AND RESOLVING GROUNDWATER CONFLICTS 7 (2015).

6. Assemb. Bill Dodd, *supra* note 2.

7. CAL. WATER CODE § 12401 (as enacted by Chapter 506).

8. Adrian Covert, *State Needs Better Water Data to Make Sound Decisions*, EAST BAY TIMES (Sept. 9, 2016), available at <http://www.eastbaytimes.com/2016/09/08/commentary-state-needs-better-water-data-to-make-sound-decisions-east-bay-times/> (on file with *The University of the Pacific Law Review*).

9. *Science-Based Decision Making*, USGS (Sept. 9, 2016, 9:12 PM) <http://ca.water.usgs.gov/data/drought/drought-water-decisions.html> (on file with *The University of the Pacific Law Review*).

greater the manager's ability to make effective decisions with respect to the current conditions.¹⁰ For example, water managers need access to water reservoir storage levels and groundwater availability to project whether water will be released for use or if the lack of surface water supplies will need augmenting by pumping groundwater.¹¹ Several factors stand in the way of water managers' ability to access data quickly and easily.¹²

One study identifies the limits on data integration as one of the most pressing issues relating to data management in California.¹³ Additionally, there are concerns about the gaps in available data and the antiquated technologies used to acquire the data that is available.¹⁴ There are also significant barriers to data accessibility that stem from a lack of resources to allow the agencies that track data to make it readily available to the public.¹⁵ While there are several existing water databases, they are segmented and not integrated amongst each other.¹⁶

B. Water Transfers

Water transfers involve moving water—either physically between locations, from the location where it is usually extracted to a new extraction point, or between owners.¹⁷ Water transfers are an effective, and important, tool for meeting water demands during dry years—particularly those transfers through the Sacramento-San Joaquin Delta (Delta).¹⁸ Transfers must be conducted with special considerations for the environmental impacts that could result incidentally from moving water from one system to another.¹⁹

In order to carry out a water transfer, water managers need access to quantitative water data to project where excess water will be available for

10. SHAKOORA AZIMI-GAYLON ET AL., ENHANCING THE VISION FOR MANAGING CALIFORNIA'S ENVIRONMENTAL INFORMATION 7 (2015).

11. *Science-Based Decision Making*, *supra* note 9.

12. ANNE CASTLE, ANTHONY SARACINO & MARK TOMPKINS, CALIFORNIA WATER DATA: NEEDS, GAPS, RECOMMENDATIONS 5 (2015).

13. *Id.* at 4.

14. *Id.* at 5.

15. *Id.*

16. *Compare About CEDEN*, CALIFORNIA ENVIRONMENTAL DATA EXCHANGE NETWORK (July 12, 2016, 6:45 PM), http://www.ceden.org/about_us.shtml (on file with *The University of the Pacific Law Review*) (explaining the sources and locations of the CEDEN data), and Steve Schoenig, *Biogeographic Data Branch—About Us*, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (July 12, 2016, 8:12 PM), <http://www.dfg.ca.gov/biogeodata/about.asp> (on file with *The University of the Pacific Law Review*) (explaining all Biogeographic Data programs and their collaborating agencies).

17. CALIFORNIA DEPARTMENT OF WATER RESOURCES AND CALIFORNIA STATE WATER RESOURCES CONTROL BOARD, BACKGROUND AND RECENT HISTORY OF WATER TRANSFERS IN CALIFORNIA (July 2015) available at http://www.water.ca.gov/watertransfers/docs/Background_and_Recent_History_of_Water_Transfers.pdf (on file with *The University of the Pacific Law Review*).

18. *Id.*

19. *Id.*

extraction and use.²⁰ More information on water transfer markets will increase the amount of transfers that can be identified and executed, as well as increase the efficiency of timing the movement of water through different water systems.²¹

C. Existing Water Data Laws

The past several years of drought spurred the adoption of laws such as the Sustainable Groundwater Management Act (SGMA) and Senate Bill (SB) 88, which both created new data collection requirements.²² Chapter 506 represents the first movement towards state mandated compilation of intra-agency water data for public use.²³

1. The Sustainable Groundwater Management Act

SGMA was a three bill package signed into law by Governor Brown in September 2014.²⁴ SGMA was comprised of SB 1168, SB 1319, and AB 1739.²⁵ In September of 2015, a clean-up bill, SB 13, was signed into law—making various technical and clarifying changes to SGMA regarding Groundwater Sustainability Agency (GSA) formation guidelines, the State Water Resources Control Board (SWRCB) intervention processes, and mutual water companies' involvement in GSA's.²⁶ SGMA represents the first true framework for groundwater management in California.²⁷

SGMA requires that each high and medium priority groundwater basin²⁸ establish a GSA by June 30, 2017.²⁹ The GSAs are directed to prepare and

20. *Id.*

21. ASSOCIATION OF CALIFORNIA WATER AGENCIES, RECOMMENDATIONS FOR IMPROVING ACCESS TO WATER TRANSFERS AND WATER MARKETS IN CALIFORNIA (2015).

22. CAL. WATER CODE §§ 5104, 10720.

23. *Open and Transparent Water Data Act*, BAY AREA COUNCIL, 1 (July 14, 2016, 3:45 PM), available at <http://documents.bayareacouncil.org/ab1755factsheet.pdf> (on file with *The University of the Pacific Law Review*).

24. CAL. WATER CODE § 10720.

25. The State of California, *Sustainable Groundwater Management Act (SGMA)*, CALIFORNIA GROUNDWATER (Aug. 12, 2016, 6:32 PM), available at <http://groundwater.ca.gov/legislation.cfm> (on file with *The University of the Pacific Law Review*).

26. *Id.*

27. MORAN & CRAVENS, *supra* note 5.

28. *CASGEM Basin Prioritization Process, Groundwater Basin Prioritization*, CALIFORNIA DEPARTMENT OF WATER RESOURCES (Aug. 12, 2016, 11:36 PM), available at <http://www.water.ca.gov/groundwater/casgem/basinprioritization.cfm> (on file with *The University of the Pacific Law Review*) (groundwater basins are prioritized on a ranking system as either high, medium, low, or very low based on the following criteria: population in the basin, projected population growth in the basin, public water supply wells, total water wells, irrigated acreage in the basin, reliance on groundwater as a primary source of water supply, impacts on groundwater, and any other information deemed to be relevant).

29. CAL. WATER CODE § 10735.

manage their basin under a Groundwater Sustainability Plan (GSP) by January 31, 2020.³⁰ The GSP is a basin management plan which must guide the basin to meet its sustainability goals and limit use of the basin's groundwater resources to its sustainable yield.³¹ If a basin, or a portion of a basin, fails to establish or join a GSA by June 30, 2017, then the county where the basin is located will be presumed to be the GSA.³² If a county is unable or unwilling to function as the GSA, then it must notify the Department of Water Resources (DWR) and the SWRCB will place the basin on a probationary status—which will allow them to create an interim plan for managing the basin.³³

The sustainable yield is the maximum amount of groundwater that can be drawn from the basin, without causing undesirable results, and must be determined based on long-term conditions of the basin.³⁴ Sustainable yield must not cause undesirable results, which include: chronic lowering of the water table; significant reductions in groundwater storage; significant reductions in saltwater intrusion; significant reductions in water quality; significant instances of land subsidence; or significant depletion of surface water through interconnected groundwater.³⁵

2. *Senate Bill 88*

SB 88 added several sections to the Health and Safety Code, repealed several sections of the Public Resources Code, and amended and added several sections and articles to the Water Code.³⁶ Broadly, the bill created new procedures for handling failing water supply systems under the Health and Safety Code,³⁷ outlined emergency drought provisions in the Public Resources Code and the Water Code,³⁸ and—most germane to Chapter 506—created new reporting requirements for surface water diverters.³⁹

SB 88 mandated all surface water users who divert in excess of 10 acre-feet per year to annually report their diversions to the SWRCB.⁴⁰ The bill delegated the SWRCB the authority to regulate by creating more stringent measurement

30. § 10720.

31. *Id.*

32. § 10735.

33. *Id.*

34. § 10721.

35. *Id.*

36. CAL. HEALTH & SAFETY CODE §§ 116680–82, and 116684; CAL. PUB. RES. CODE §§ 21080.08 and 21080.45–21080.46; CAL. WATER CODE §§ 375, 375.5, 377, 377.5, 1058.5, 1552, 1840, 1846, 5103 -5104, 79708.5, and 79716.5.

37. CAL. HEALTH & SAFETY CODE §§ 116680–82, and 116684.

38. CAL. PUB. RES. CODE §§ 21080.08 and 21080.45–21080.46; CAL. WATER CODE §§ 375, 375.5, 377, 377.5, 1058.5, 1552, 1840, 1846, 5103–04, 79708.5, and 79716.5.

39. CAL. WATER CODE §§ 1840, 1841, & 5100–07.

40. §§ 1840–41.

reporting requirements when the available surface water is not sufficient to meet water claims and in-stream uses.⁴¹ The SWRCB's emergency regulations were adopted in 2016 and will go into effect on April 1, 2017.⁴² The new measurement reporting regulations will require diverters over 1,000 acre-feet per year to report data hourly, diverters between 100 and 1,000 acre-feet per year to report data daily, and diverters between 100 and 10 acre-feet per year to report data weekly.⁴³

III. CHAPTER 506

Chapter 506 adds 11 sections to Division 6 of the Water Code requiring DWR to create a statewide platform that integrates existing water and ecological data into a publicly available database.⁴⁴ Chapter 506 identifies and endorses several public policies that favor compiling water data and making it more available to water managers.⁴⁵ Chapter 506 declares that an open data portal creates an opportunity for collaboration between agencies by promoting an open source of information for the public's use.⁴⁶ An open data portal "foster[s] entrepreneurship, innovation, and scientific discovery."⁴⁷

Section 12405 requires DWR, SWRCB, and the Department of Fish and Wildlife (DFW) to collaborate on integrating local, state, and federal agencies' water and ecological data.⁴⁸ Bringing this data together provides the necessary information local agencies need to implement SGMA, aids in managing the state's water resources, and creates transparency in water transfers⁴⁹ and markets.⁵⁰

Section 12406 directs DWR to consult with the California Water Quality Monitoring Council (Monitoring Council), the SWRCB, and DFW to develop

41. *Id.*

42. CALIFORNIA WATER BOARDS, ANNUAL WATER USE REPORTING REQUIREMENTS FOR WATER RIGHT HOLDERS, EMERGENCY REGULATION FOR MEASURING AND REPORTING ON THE DIVERSION OF WATER (Aug. 12, 2016, 10:47 PM), available at http://www.waterboards.ca.gov/waterrights/water_issues/programs/measurement_regulation/docs/fact_sheet_measure_reg.pdf (on file with *The University of the Pacific Law Review*).

43. *Id.*

44. CAL. WATER CODE § 12400 (enacted by Chapter 506).

45. § 12401.

46. *Id.*

47. *Id.*

48. § 12405.

49. See *Frequently Asked Questions (FAQs)*, DEPARTMENT OF WATER RESOURCES (Aug. 12, 2016, 9:46 PM), <http://www.water.ca.gov/watertransfers/faqs.cfm> (on file with *The University of the Pacific Law Review*) (water transfers are voluntary exchanges of water from a seller with a valid water right and excess water in the given year to a buyer who would have the excess water delivered into a waterway where there would have otherwise not been water available to the buyer).

50. CAL. WATER CODE § 12405 (enacted by Chapter 506).

data protocols.⁵¹ These protocols must address data formats, handling, and sharing or promotion, as well as provide methods for controlling the quality of the data.⁵² The developed protocols will provide the framework for the water data platform.⁵³ Once the protocols are written, DWR must prepare a report consistent with California Government Code Section 9795.⁵⁴

Section 12410 requires DWR to create a statewide water data platform by January 1, 2018.⁵⁵ DWR is permitted to collaborate with other state agencies and nonprofit organizations, either existing or newly created, to create and oversee the water data platform.⁵⁶ The entities DWR collaborates with will be eligible to receive funds for the work on the water data platform.⁵⁷ This section also sets deadlines for the data to be integrated into the state-wide platform.⁵⁸ Data from the state agencies must be made available on the platform by September 1, 2019, and the remaining data from the federal agencies must be made available by August 1, 2020.⁵⁹

Section 12415 requires that the platform include existing water and ecological data from multiple agency's databases, specifically: DWR's information on State Water Project (SWP) reservoir operations,⁶⁰ groundwater use and levels,⁶¹ and urban water use; SWRCB's data on water rights, water

51. § 12406.

52. *Id.*

53. *Id.*

54. CAL. GOV. CODE § 9795 (state agencies submitting reports to submit a printed copy the Secretary of the Senate, submit an electronic copy to the Chief Clerk of the Assembly, an electronic or printed copy to the Legislative Counsel, provide an electronic copy of the summary to each member of the legislature, to make a copy of the report electronically available to the public, and host the full report and summary on the agencies website with a phone number to request a printed copy).

55. CAL. WATER CODE § 12410 (enacted by Chapter 506).

56. *Id.*

57. *Id.*

58. *Id.*

59. *Id.*

60. DWR provides quantitative data on the State Water Project operations on its website. The data is available in PDF format for each month. The data from the last twenty-six years is available online and additional historic data is available by request. CALIFORNIA DEPARTMENT OF WATER RESOURCES, STATE WATER PROJECT MONTHLY OPERATIONS DATA, <http://www.water.ca.gov/swp/operationscontrol/monthly.cfm> (last visited Aug. 12, 2016) (on file with *The University of the Pacific Law Review*).

61. With the passage of the Comprehensive Water Package in 2009, the legislature established the California Statewide Groundwater Elevation Monitoring Program. This was the first statewide program to collect groundwater data from both local agencies and the Department of Water Resources (DWR) in order to track groundwater elevations across California. CASGEM developed a network of groundwater monitoring entities that measure groundwater elevations in all 515 of California's alluvial groundwater basins. See CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2009 COMPREHENSIVE WATER PACKAGE (November 2009), available at www.water.ca.gov/legislation/docs/01272010waterpackage.pdf (on file with *The University of the Pacific Law Review*) (multiple bills were passed as part of the package, each allocating responsibilities or funding to DWR to conduct this monitoring program).

The individual entities collect groundwater data and submit it to DWR, which compiles the data into a statewide database that is made available for public use. The program's goal is to identify trends in groundwater elevations for individual basins and identify where negative conditions are present. CALIFORNIA DEPARTMENT

diversions, and water quality through California Environmental Data Exchange Network (CEDEN);⁶² the DFW's data on fish abundance and distribution⁶³; the United States Geological Survey's data on streamflow conditions through the National Water Information System⁶⁴; the United States Bureau of Reclamation's data on the operation of the federal Central Valley Project (CVP); the United States Fish and Wildlife Service's, United States Forest Service's, and National Oceanic and Atmospheric Administration Fisheries' fish abundance data.⁶⁵ The platform must also provide data on completed water transfers and exchanges and document the quality and formats of the data.⁶⁶

Finally, in Section 12420, Chapter 506 creates the Water Data Administration Fund.⁶⁷ This fund aids in the improvement of water data by providing funding to verify data and modernize existing water databases.⁶⁸ Section 12421 gives DWR the flexibility to partner with or create a nonprofit organization to create, operate, or maintain the water data platform.⁶⁹

OF WATER RESOURCES, WHAT IS CASGEM?, <http://www.water.ca.gov/groundwater/casgem/> (last visited Aug. 12, 2016) (on file with *The University of the Pacific Law Review*).

62. The State Water Resources Control Board (SWRCB) created CEDEN to combine surface water quality data produced by various entities, such as research organizations. CEDEN's data is comprised of information regarding water quality, aquatic habitats, and wildlife health gathered from streams, lakes, rivers, and the ocean. Data gathering organizations or departments provide data to one of four Regional Data Centers where it is processed and reviewed before being integrated into the CEDEN database. CEDEN identifies improving access and standardizing water resource data as part of its mission statement and aims all of its goals at providing more data to more people. STATE WATER RESOURCES CONTROL BOARD, CALIFORNIA ENVIRONMENTAL DATA EXCHANGE NETWORK (CEDEN) (2016), available at <http://ceden.org/docs/cedenfactsheet.pdf> (on file with *The University of the Pacific Law Review*).

63. The California Department of Fish and Wildlife has a Biogeographic Data Branch that collects data and maintains several databases to help the department make conservation decisions. CDFW's water related databases are run through their Geographic Information Systems (GIS) Service Center, which coordinates compiling the data and publishing it to their databases. It also creates custom GIS systems for many of the water related databases, including the following: Biogeographic Information and Observation System (BIOS), CalFish, and Fishing Guide. Steve Schoenig, *Biogeographic Data Branch—About BIOS*, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, <https://www.wildlife.ca.gov/Data/BIOS/About> (last visited July 12, 2016) (on file with *The University of the Pacific Law Review*).

64. The National Water Information System is a database of a variety of types of data collected, compiled, and managed by the United States Geological Survey (USGS). The database contains both surface water and groundwater data including, streamflow velocity and water level recordings. Additionally, the USGS maintains water quality data for both groundwater and surface water. The National Water Information System is available online; however, not all of the data is published on the website—some of the data must be inquired for through the USGS. USGS Water Data Support Team, *About the USGS Water Data for the Nation Site*, NATIONAL WATER INFORMATION SYSTEM, <https://help.waterdata.usgs.gov/faq/about-the-usgs-water-data-for-the-nation-site> (last visited Aug. 12, 2016) (on file with *The University of the Pacific Law Review*).

65. CAL. WATER CODE § 12415 (enacted by Chapter 506).

66. *Id.*

67. § 12420.

68. *Id.*

69. § 12421.

IV. ANALYSIS

Chapter 506 creates an integrated state-wide water data platform to help basins implement SGMA, gives additional resources to water managers at varying levels, and increases the transparency of the water transfer market.⁷⁰ The recent drought exposed the gap in California water data left by a group of segmented and incompatible data sources.⁷¹ Charging the DWR with bringing together several previously incompatible databases and managing the growth of the database signifies a large step towards addressing the need for more robust data resources.⁷²

However, the original draft of the legislation went much further.⁷³ The original version proposed to create an additional online platform to host water transfer information and facilitate future transfers.⁷⁴ Additionally, the earliest version of the bill required the SWRCB to mandate surface water right holders to report return flow data.⁷⁵ Section A discusses, generally, the movement towards improving the management of California's water resources.⁷⁶ Section B discusses Chapter 506's effectiveness at providing the additional data needed to implement SGMA.⁷⁷ Finally, Section C addresses Chapter 506's effect on the water transfer market and the transparency of water transfers in California.⁷⁸

A. Improving Management Capability

Chapter 506 is one step towards improving the accessibility of water information for California's water managers.⁷⁹ Several factors influence how effectively California's water system functions with its water managers and its water information, such as: the creation of uniformity in water data, the

70. § 12401.

71. *Id.*

72. *Id.*

73. Compare CAL. WATER CODE §§ 12401–12420 (as amended by A.B. 1755) (no water transfer clearinghouse portion), with SB 1755, 2016 Leg., 2015–2016 Reg. Sess. (Cal. 2016) (as introduced on February 2, 2016) (containing the water transfer clearinghouse portion of the bill).

74. SB 1755, 2016 Leg., 2015–2016 Reg. Sess. (Cal. 2016) (as introduced on Feb. 2, 2016).

75. *Id.*

76. See *infra* Part IV.A. (comparing the general success of SB 1755 on increasing information for California water management).

77. See *infra* Part IV.B. (comparing the impending needs for the SGMA deadlines and requirements with the benefit conferred by SB 1755 and in accordance with the relative timeline for the data platform creation).

78. See *infra* Part IV.C. (examining the effects of SB 1755 on creating a more open and available water transfer market).

79. CAL. WATER CODE § 12401 (enacted by Chapter 506).

combination of data from multiple sources, and the financial capacity to maintain this centralized and uniform database.⁸⁰

1. Uniform Water Data

Several studies identify a lack of uniformity in available water data as one of the most pressing challenges for having an effective and cumulative water database.⁸¹ There are several available water databases; however, they are not easily used in coordination with one another.⁸² It is necessary for water managers at all levels to have access to information on water availability in order to manage their region's water supply effectively.⁸³ Chapter 506 begins to address this challenge by requiring DWR to follow consistent and standardized formatting requirements when integrating outside databases into the statewide water data platform.⁸⁴

Chapter 506 also provides an opportunity to implement protocols to guide data sharing and documentation. A number of different organizations have called for the creation of data standards.⁸⁵ Some organizations have called for the state to go beyond the explicit language of Chapter 506 and provide guidance on collecting, managing, and modeling data.⁸⁶ Setting basic standards for data formatting and collection allows all data sources across the state to be compared and combined.⁸⁷

Chapter 506 addresses concerns with the uniformity of water data by requiring the standardization of the data to be integrated into the statewide platform and creating a process for developing data protocols.⁸⁸ However, there is no clear requirement, timeline, or guidance on when the data protocols must be developed or how the authority is delegated between DWR, SWRCB, DFW, or the Monitoring Council.⁸⁹ The protocols will, however, effectively become the

80. ALVAR ESCRIVA-BOU ET AL., PUBLIC POLICY INSTITUTE OF CALIFORNIA WATER POLICY CENTER, ACCOUNTING FOR CALIFORNIA'S WATER 4 (2016), available at <http://www.ppic.org/main/publication.asp?i=1206> (on file with *The University of the Pacific Law Review*).

81. See generally *id.* (identifying the need for uniform data as an issue for California water management); CASTLE ET AL., *supra* note 12, at 4 (identifying the need for uniform data as an issue for California water management).

82. Assemb. Bill Dodd, *supra* note 2; see ESCRIVA-BOU ET AL., *supra* note 80.

83. ESCRIVA-BOU ET AL., *supra* note 80.

84. CAL. WATER CODE § 12415 (as amended by A.B. 1755).

85. Compare ESCRIVA-BOU ET AL., *supra* note 80, with MORAN & CRAVENS, *supra* note 5., and CASTLE ET AL., *supra* note 12.

86. See MORAN & CRAVENS, *supra* note 5, at 20; see also ESCRIVA-BOU ET AL., *supra* note 80, at 17 (both calling for a state agency to require data be formatted according to specific criteria).

87. ESCRIVA-BOU ET AL., *supra* note 80.

88. CAL. WATER CODE § 12406 (enacted by Chapter 506).

89. See CAL. WATER CODE § 12406 (enacted by Chapter 506) (requires DWR to consult with SWRCB, DFW, and the California Water Quality Monitoring Council, but doesn't give any guidance on the designation of decision making authority between these entities).

standard because Chapter 506 requires compliance with the protocol in order to be eligible for any state grants pertaining to water data.⁹⁰

2. *Data Integration*

Another major hindrance to effective and efficient water management is the lack of integration between the water data that is available.⁹¹ There are a number of existing water databases maintained by a variety of federal and state agencies⁹²; however, these separate databases are not integrated to provide information on an aggregate, state-wide level.⁹³ A study by the Public Policy Institute of California identifies a specific example of the ineffectiveness of segmented data sources—for a local water manager in the Sacramento Valley, simply getting an idea of water availability in the area requires visiting multiple websites to sift through data that is likely not formatted consistently.⁹⁴

Chapter 506 addresses the issue of formatting by instructing DWR to integrate data from eight specific sources.⁹⁵ In order to accomplish this, DWR must convert all the data into a standardized format, which allows the data to be integrated fully. Another section of Chapter 506 requires DWR to assess and record the quality and formatting of the data.⁹⁶ By standardizing data formats and recording quality and format details, DWR will provide additional, and necessary, guidance to entities that collect or maintain data.⁹⁷

The integration of data from the varying sources represents what the author thinks is likely the most substantial benefit to California's water data needs.⁹⁸ Implementing Chapter 506 requires DWR to coordinate with other agencies, both state and federal, in acquiring data and creates a precedent once the data formats and standards are developed.⁹⁹

90. CAL. WATER CODE § 12406 (as enacted by Chapter 506).

91. Compare *ESCRIVA-BOU ET AL.*, *supra* note 80, *MORAN & CRAVENS*, *supra* note 5, and *CASTLE ET AL.*, *supra* note 12 (discussing lack of integration between water facilities).

92. Compare *WHAT IS CASGEM?*, *supra* note 61 (explaining the sources and locations of the CASGEM data), with *About CEDEN*, *supra* note 16 (explaining the sources and locations of the CEDEN data), and *Schoenig*, *supra* note 63 (explaining all Biogeographic Data programs and their collaborating agencies).

93. *ESCRIVA-BOU ET AL.*, *supra* note 80, at 17.

94. *Id.* at 18.

95. CAL. WATER CODE § 12415 (enacted by Chapter 506).

96. *Id.*

97. Compare *MORAN & CRAVENS*, *supra* note 5, at 20 (discussing standardizing data for easier understanding of water data), with CAL. WATER CODE § 12415 (as amended by A.B. 1755).

98. Compare *ESCRIVA-BOU ET AL.*, *supra* note 80, *MORAN & CRAVENS*, *supra* note 5, and *CASTLE ET AL.*, *supra* note 12 (each report calling for integration of separate data platforms as a necessary step for creating a data network that allows for efficient water supply management or efficient water management decisions).

99. See CAL. WATER CODE §§ 12400–12402, 12405, 12406, 12410, 12415 (enacted by Chapter 506) (requiring that DWR acquire all the data from the specified agencies and format it into a consistent and standardized format).

3. Funding

Perhaps the most apparent barrier to increasing the availability of California's water data, is the lack of funding for the timely and costly process of collecting and integrating data from multiple sources and formats.¹⁰⁰ Many regions are already facing increasing costs for water management in preparation for upcoming SGMA deadlines.¹⁰¹

Chapter 506 is anticipated to cost DWR a one-time-cost between \$750,000 and \$1.5 million to initially develop the data platform and \$1.6 million annually thereafter to maintain and grow the platform.¹⁰² The Water Data Administration Fund will come out of the general fund.¹⁰³

By funding DWR to gather, re-format, and compile all of this data, Chapter 506 allows local agencies to direct more of their resources to hiring additional staff and performing other tasks necessary to implement SGMA or otherwise manage their basins.¹⁰⁴ However, it does not assist local agencies in the costly modeling that must be performed in order to project long term water supplies.¹⁰⁵

B. Implementing SGMA

SGMA's first deadline for GSAs in medium and high priority basins to have their GSP is June of 2017, and in order to create this plan the GSAs must undergo modeling which will require data inputs.¹⁰⁶ However, this data is largely groundwater oriented.¹⁰⁷ There is limited data available to water managers and managing entities on groundwater other than groundwater levels.¹⁰⁸ In order for the GSAs to effectively project groundwater availability, they will need to gather additional data on groundwater extractions.¹⁰⁹ In many cases, groundwater extractions are not subject to measurement and reporting requirements.¹¹⁰

While Chapter 506 makes progress towards providing additional and more convenient access to water data generally,¹¹¹ it does not gather or require new

100. Compare ESCRIVA-BOU ET AL., *supra* note 80, MORAN & CRAVENS, *supra* note 5, and CASTLE ET AL., *supra* note 12 (each report identifying a lack of funding for data improvement efforts).

101. MORAN & CRAVENS, *supra* note 5, at 20.

102. *The Open and Transparent Water Data Act*, on the Sen. Comm. On Appropriations, 2015 Leg., 2015–2016 Reg. Sess. (Cal. 2015) (committee findings on the fiscal impact of AB 1755).

103. *Id.*

104. MORAN & CRAVENS, *supra* note 5.

105. *Id.*

106. CAL. WATER CODE § 10735.2.

107. MORAN & CRAVENS, *supra* note 5.

108. ESCRIVA-BOU ET AL., *supra* note 80, at 16.

109. *Id.*

110. TARA MORAN & DAN WENDELL, WATER IN THE WEST, THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT OF 2014: CHALLENGES AND OPPORTUNITIES FOR IMPLEMENTATION 16 (2015).

111. See *supra* Part V.A.

measurement of water resources.¹¹² GSAs can take advantage of the database as they work through the modeling required to project future water supplies.¹¹³ This advantage will represent a significant reduction in the costs that would otherwise be accrued by the GSAs in their individual collections and processing of the various data platforms.¹¹⁴

An additional question regarding Chapter 506's effectiveness in assisting in the implementation of SGMA is whether the deadlines given to DWR for the creation of the platform are in line with the deadlines for the GSPs to be implemented.¹¹⁵ The first deadline for SGMA GSPs is for the medium and high priority basins, which must have their plans in place by January 31, 2020.¹¹⁶ The plans must not only be created, but specifically the basins must be operating under the criteria outlined in their plan.¹¹⁷

Chapter 506 requires that DWR integrate into the platform only the data held by state agencies by September 1, 2019.¹¹⁸ The remaining data sources, those held by the federal agencies, do not have to be integrated into the platform until August 1, 2020.¹¹⁹ Assuming the data is not available until the deadline, GSAs would only have four months to take advantage of the data platform.¹²⁰ While this may seem like a significant amount of time, if a GSA waits until the data platform is constructed to begin modeling water supply alternatives, then they would need to complete all of the modeling, receive and analyze the results of the modeling, implement those modeling results into the formation of a GSP, and have the GSP approved and implemented within four months.¹²¹

C. Improving Water Transfers

Water transfers are an important aspect of water supply management in California.¹²² One of the main aspects of water transfers is identifying the amount

112. See CAL. WATER CODE §§ 12400–12402, 12405, 12406, 12410, 12415 (enacted by Chapter 506) (requiring DWR to compile data from numerous sources and granting the ability to create data protocols but not giving any authority to require new measurement or reporting requirements or requiring the disclosure of private water data).

113. See CAL. WATER CODE §§ 12400–12402, 12405, 12406, 12410, 12415, and 12420 (as amended by A.B. 1755); see also MORAN & CRAVENS, *supra* note 5, at 22.

114. MORAN & CRAVENS, *supra* note 5, at 22.

115. Compare CAL. WATER CODE §§ 12400–12402, 12405, 12406, 12410, and 12415 (as enacted by Chapter 506) (deadline for uploading data of September 2019), and CAL. WATER CODE § 10720 (deadline for GSP is January 31, 2020).

116. CAL. WATER CODE § 10720.

117. *Id.*

118. § 12410.

119. *Id.*

120. Compare CAL. WATER CODE § 12410 (as enacted by Chapter 506) (deadline for uploading data of September 2019) and CAL. WATER CODE § 10720 (deadline for GSP is January 31, 2020).

121. CAL. WATER CODE § 10720 (deadline for GSP is January 31, 2020).

122. WATER TRANSFERS, *supra* note 17.

of water available.¹²³ In a drought, it can be particularly challenging to determine if water is even available to be transferred.¹²⁴ The Association of California Water Agencies (ACWA) recommends that to improve water transfers in California, the state should make water data more available to increase access to water transfer markets.¹²⁵ The initial version of Chapter 506 would have created an online system to facilitate water transfers.¹²⁶ However, that market portion of the bill was removed¹²⁷ and considered in Assembly Bill (AB) 2304, which died in the Senate.¹²⁸

Chapter 506 requires the DWR to include information in the water data platform on completed water transfers as well as information on water supply.¹²⁹ The new water platform provides water managers the ability to look at a single resource to see water data from a variety of regions.¹³⁰ This new integration of water data on a statewide level allows those managers seeking transfers to more quickly identify if and where water is available.¹³¹ Chapter 506 also directly addresses ACWAs recommendation of increasing access by creating a more accessible database of water transfer data.¹³²

It is unclear whether Chapter 506 will have a growth or reduction effect on the number of water transfers that take place.¹³³ If the increased amount of data provides for more water available for transfers, there are still technical issues related to the physical capacity to move the water from the source to the buyer.¹³⁴ It is clear that integrating the water transfer data into the statewide database allows transfers to be a more efficient alternative water supply.¹³⁵

123. *Compare id.*, and Chris Austin, *Water Transfers and the California Water Commission, part 2*, WATER TRANSFERS 101 (Mar. 28, 2014), <https://mavensnotebook.com/2014/03/28/water-transfers-at-the-california-water-commission-water-transfers-101/> (on file with *The University of the Pacific Law Review*) (comparing the available amount of water open for transfers).

124. Austen, *supra* note 123.

125. ASSOCIATION OF CALIFORNIA WATER AGENCIES, *supra* note 21.

126. AB 1755, 2016 Leg., 2015–2016 Reg. Sess. (Cal. 2016) (as introduced on February 2, 2016).

127. *See* CAL. WATER CODE §§ 12400–12415 (as enacted by Chapter 506) (no clearinghouse section).

128. AB 2304, 2016 Leg., 2015–2016 Reg. Sess. (Cal. 2016) (as amended on May 11, 2016).

129. CAL. WATER CODE § 12415 (as amended by A.B. 1755).

130. § 12410.

131. *Compare* CAL. WATER CODE § 12410 (as amended by A.B. 1755), with ASSOCIATION OF CALIFORNIA WATER AGENCIES, RECOMMENDATIONS FOR IMPROVING WATER TRANSFERS AND ACCESS TO WATER MARKETS IN CALIFORNIA (Apr. 2016), available at http://www.acwa.com/sites/default/files/post/regulatory-affairs/2016/04/acwa-water-transfers-and-markets-recommendations_april-2016.pdf (on file with *The University of the Pacific Law Review*).

132. *Compare* CAL. WATER CODE § 12410 (as amended by A.B. 1755), with ASSOCIATION OF CALIFORNIA WATER AGENCIES, RECOMMENDATIONS FOR IMPROVING WATER TRANSFERS AND ACCESS TO WATER MARKETS IN CALIFORNIA, *supra* note 131.

133. *Compare* CAL. WATER CODE § 12410 (as amended by A.B. 1755), and ASSOCIATION OF CALIFORNIA WATER AGENCIES, RECOMMENDATIONS FOR IMPROVING WATER TRANSFERS AND ACCESS TO WATER MARKETS IN CALIFORNIA, *supra* note 131.

134. WATER TRANSFERS, *supra* note 17.

135. *Id.*

V. CONCLUSION

California faced several years of drought, which exacerbated the holes in its water data network.¹³⁶ Chapter 506 brings California one step closer to having a more robust water database to allow for improved water management capabilities.¹³⁷ The new water database would provide useful resources for GSAs' continued sustainable management of the groundwater basins; however, the deadlines for the database to become available will not come quick enough for the medium and high priority basins to prepare and implement their GSPs.¹³⁸ Chapter 506 provides needed resources to improve water transfers and opens access to the water transfer market.¹³⁹

136. Adrian Covert, *State Needs Better Water Data to Make Sound Decisions*, EAST BAY TIMES (Sept. 8, 2016), available at <http://www.eastbaytimes.com/2016/09/08/commentary-state-needs-better-water-data-to-make-sound-decisions-east-bay-times/> (on file with *The University of the Pacific Law Review*).

137. *Supra* Part IV.A.

138. *Supra* Part IV.B.

139. *Supra* Part IV.C.