
State Water Resources Control Board

November 28, 2022
Office of the Delta Watermaster

Investigation of Complaint Alleging Unauthorized Water Diversion in the Legal Delta

Summary of Findings and Resolution

I. Background

On June 10, 2021, the Friant Water Authority (FWA) sent a letter to State Water Resources Control Board (State Water Board) Chair Joaquin Esquivel requesting “immediate action to stop unlawful depletions” of water from the Delta watershed.¹ According to the letter, “[b]ased on [FWA’s] recent internal analysis, thousands of acre-feet of water per day disappear in the Delta *due to unauthorized diversions.*” (Emphasis added.) FWA alleged injury to the Central Valley Project (CVP) and the State Water Project (SWP, collectively Projects) which were required to make up for the unauthorized diversions through incremental releases of stored water necessary to meet their water quality protection responsibilities. FWA may be adversely affected by such alleged unauthorized diversion, among other bases, because FWA’s member agencies are service contractors of the CVP’s Friant Division, enduring drought-induced reductions in water deliveries.

Chair Esquivel referred the FWA’s letter to the Office of the Delta Watermaster (ODWM)² for investigation as a complaint alleging unlawful diversion of Project water³ within the Legal Delta.⁴ This is a summary of the findings and resolution of the ensuing investigation (Investigation).

¹ The letter is available at:

https://www.waterboards.ca.gov/water_issues/programs/delta_watermaster/docs/fwacomplaint.pdf

² “The Delta Watermaster shall exercise the [State Water Board’s] authority to provide timely monitoring and enforcement of board orders and license and permit terms and conditions The Delta Watermaster’s authority shall be limited to diversions in the Delta” (Wat Code, § 85230, sub. (b).) The State Water Board has delegated additional responsibilities and authorities to the Delta Watermaster. See State Water Board Resolution 2018-0037.

³ In the context of this investigation, “Project water” refers to water, originating in the Trinity and Delta watersheds, lawfully imported or stored by the CVP and the SWP, and subsequently released from reservoirs to serve Project purposes.

⁴ The Legal Delta refers to the area, approximately 750,000 acres, roughly 500,000 acres of which are devoted to agricultural use, defined in Water Code section 12220.

I. Summary of Complaint

FWA's complaint acknowledged the particular challenges of regulating pre-1914 and riparian claims within the Legal Delta,⁵ but requested that the State Water Board prevent any unauthorized diversion of Project water, without respect to the purported justification for such diversion. Essentially, the FWA provided a mass balance analysis to support its argument that Delta inflow is at times almost entirely supported by SWP and CVP releases of previously stored Project water. The argument continues that the prevalence of such previously stored water demonstrates that, at many times during drought conditions, diversions within the Legal Delta necessarily take Project water without authorization.

Because riparian⁶ claimants are entitled, as a matter of common law, to only natural flow available in the contiguous watercourse at their respective points of diversion and because Project water released from storage is not natural flow, much of the Investigation focused on diversions of water within the Legal Delta based on unadjudicated riparian claims. FWA purported to demonstrate, through a mass balance analysis, that the natural flow into the Legal Delta (river inflow minus calculated releases of previously stored Project water) during periods of drought is sufficient to meet only a portion of the observed depletions by riparian water right claimants.⁷

II. Summary of Resolution

ODWM has determined that FWA's complaint, as amended, refined, narrowed, and supported through the course of the Investigation, will not support an enforcement action against any individual diverter within the Legal Delta. For reasons discussed below, the Investigation could neither confirm nor rule out the possibility of unauthorized

⁵ Following completion of the Investigation, the extent of these challenges has been further highlighted by the decision in the *California Water Curtailment Cases*, No. 1-15-CV285182 (2022) and by pending litigation seeking writs of mandate to enjoin enforcement of emergency drought regulations adopted by the State Water Board which became effective on August 19, 2021 and August 12, 2022.

⁶ There are many types of water rights claimed to support diversion and use of water in the Legal Delta. However, the predominant claims to divert water for beneficial use within the Legal Delta are colorable but unadjudicated riparian claims. See "Issues Related to Overlap between Pre-1914 and Riparian Water Right Claims in the Delta" available at [the Overlap Memo](#) and *Modesto Irrigation District v. Tanaka*, 48 Cal.App.5th 898 (Cal. Ct. App. 2020), 262 Cal. Rptr. 3rd 408.

⁷ In comments on an earlier draft of this summary, the Central and South Delta Water Agencies (CDWA and SDWA) asserted that riverine inflow is not the only source of natural flow available for riparian diversion, citing natural flow contributed to the Legal Delta from brackish water entering the Delta as a result of tidal action. Further, CDWA and SDWA's comments assert that among the purposes of the SWP and CVP are to repel salinity and assure adequate water quality for in-Delta use, making diverters within the Legal Delta intended collateral beneficiaries of Project operations that have priority over Project exports. See "Comments on the Summary of Findings and Resolution of the Investigation of Complaint Alleging Unlawful Water Diversion in the Legal Delta" August 5, 2022. A revised version of the CDWA/SDWA comments on the Investigation is available at: https://www.waterboards.ca.gov/water_issues/programs/delta_watermaster/docs/cdwa-sdwa-comment-letter.pdf.

diversion of Project water within the Legal Delta. However, the Investigation suggests potential alternative paths toward resolving complex issues presented by FWA's complaint.

III. Investigation Process

On June 17, 2021, ODWM opened the Investigation, in collaboration with the Division of Water Rights (Division), with a request that FWA share its "recent internal analysis" and any additional data supporting the complaint.⁸ By letter dated July 9, 2021, other export contractors⁹ also requested the State Water Board to consider immediate action to protect the release of previously stored water by the CVP and SWP. The letter noted that more water was being depleted within the Legal Delta than there was natural flow available to support then-current diversions. Further, the letter claimed that the rights asserted by Legal Delta diverters would not support then-current levels of observed depletions. ODWM and the Division integrated the additional complainants into the Investigation. At the same time, FWA and its consultant, MBK Engineers, updated a spreadsheet and graphic illustration of FWA's mass balance analysis.¹⁰

While ODWM and the Division led and maintained responsibility for the Investigation, we invited the complainants and their consultants to participate from beginning to end. We held periodic update sessions on Investigation progress,¹¹ organized a technical team¹² to collaborate on data acquisition/analysis, and developed an Investigation process and protocol document¹³ to guide the collaborative effort over the course of the year-long Investigation.

⁸ See email to Jason Phillips on June 17, 2021 available at:

https://www.waterboards.ca.gov/water_issues/programs/delta_watermaster/docs/2022/emailjphillipsfwa.pdf.

⁹ In addition to FWA and the Tehama Colusa Canal Authority, CVP service contractors were represented by the San Luis Delta Mendota Water Authority, and SWP export contractors were represented by the State Water Contractors.

¹⁰ FWA's spreadsheet is available at:

https://www.waterboards.ca.gov/water_issues/programs/delta_watermaster/docs/2022/friantbalance210721.xls

¹¹ The Investigation included a series of email and spreadsheet exchanges as well as virtual meetings with complainants, via Microsoft Teams, on: July 14, 26 & 30; August 17 & 20; September 24; and October 24, 2021, and February 7; May 9; August 1 & 17, 2022. The latest two meetings in that series involved review of a prior draft of this document. In addition, FWA has offered proposed edits and comments on a second revision of this document; many of those comments have been incorporated, but this summary and report is by ODWM and Division which are jointly and exclusively responsible for its content.

¹² The members of the Investigation's technical team were Ian Buck-McLeod (FWA), Chandra Chilmakuri (State Water Contractors), Wesley Walker (MBK Engineers), Scott Ligare (Division), Matt Holland (Division), and Lindsay Kammeier (ODWM).

¹³ The Investigation protocol outline is available at:

https://www.waterboards.ca.gov/water_issues/programs/delta_watermaster/docs/exporterinvestigation.pdf

V. Refinement of Mass Balance Analysis

State Water Board water resource control engineers¹⁴ replicated the complainants' analytical spreadsheet to identify and reconcile any misunderstandings or inconsistencies in the complainants' methodology.¹⁵ In the comparative process, the technical team identified the sources of data populating the spreadsheets and discussed the reliability and consistency of the inputs.¹⁶ Ultimately, the two spreadsheets reached reconciliation and the technical team commenced a refinement process with two principal objectives: (1) disaggregate and quantify inflow, outflow, exports, and depletions that, together, support the complainants' mass balance estimates of unauthorized diversion within the Legal Delta, and (2) identify and narrow the ranges of uncertainty within the best available data sources underpinning the mass balance analysis.

A. Quantifying Delta Inflow

The mass balance spreadsheets grossly quantified the sources of Delta inflow and attempted to differentiate between natural flow and Project releases of previously stored water. The methods illustrated in the spreadsheets do not account for depletions of previously stored water between the upstream points of reservoir releases and the Legal Delta.¹⁷ Instead, the spreadsheets incorporate the conservative assumption that all inflow bypassed through the Project reservoirs was conveyed to the Legal Delta, thus assuming that only Project water met the upstream depletions.¹⁸ Without an accurate accounting of Project water entering the Legal Delta, neither the complainants' analysis nor other approaches considered during the Investigation could demonstrate that Project water was going to non-Project purposes.¹⁹

As noted above, neither the mass balance spreadsheets, nor this Investigation, was able to quantify the residual share of water entering the Legal Delta that was available for diversion by riparian claimants as natural flow. Moreover, this Investigation did not reveal, and the complainants did not offer, a proposed method for apportioning the

¹⁴ Lindsay Kammeier of ODWM and Scott Ligare of the Division provided primary technical support for the Investigation.

¹⁵ ODWM's replication spreadsheet is available at:

https://www.waterboards.ca.gov/water_issues/programs/delta_watermaster/docs/210714deltabalance_ad.xlsx

¹⁶ The U.S. Bureau of Reclamation's webpage providing estimates imported into the spreadsheets is available at:

<https://www.usbr.gov/mp/cvo/>

¹⁷ A significant and unquantified amount of the storage releases is delivered to Project contractors upstream of the Delta, which reduces the amount of Project water entering the Legal Delta.

¹⁸ Further, authorized Sacramento River diversions between the I Street Bridge (the upstream boundary of the Legal Delta on the Sacramento River) and the Freeport gage were not separately accounted for in the mass balance analysis.

¹⁹ The complainants concurred that improved accounting for water throughout the Delta watershed could improve administration of the water rights system. Nonetheless, the complainants insist that the mass balance analysis is sufficient to support their observation that from about mid-May through at least mid-September of 2021, non-Project inflow was not sufficient to support depletions in the Legal Delta.

shortfall among riparian claimants.²⁰ Thus, the Investigation did not develop a practical methodology for correlative curtailment, even if the total extent of curtailment could be established by effectively differentiating the sources of the commingled water within the Legal Delta.²¹

B. Quantifying/Categorizing Net Delta Outflow

Just as the Investigation sought to better quantify inflow, it also attempted to define, quantify, and categorize Delta outflow.²² This part of the Investigation also confronted complications unique to the Legal Delta.

First, the Legal Delta is best conceptualized as a tidal system with important riverine influence (rather than as extensions of the tributaries to the Bay). In fact, the Legal Delta is roughly defined as the area within the watershed subject to tidal influence, which is most pronounced at its western mouth and attenuated to its interior limits. Thus, what we refer to as “outflow” is the estimated net fresh water flowing through the Carquinez Strait (or other nearby, arbitrary estimation point) and thereafter mixing with the brackish water of San Pablo Bay and, ultimately, with the Pacific Ocean. It is useful to keep in mind that the net freshwater flow—particularly in periods of drought—is modest in comparison with the twice daily tidal ebbs and flows at the same measuring point.

Second, we necessarily estimate—because it is currently impossible to measure—the net freshwater outflow from the Delta. So, once again, a mass balance analysis confronts a range of uncertainty in this critical factor. The State Water Board’s Decision 1641 (D-1641) provides a regulatory framework for calculating the Net Delta Outflow Index (NDOI), but the underlying estimate is complex.²³ Nonetheless, the NDOI is the best consistently calculated and published daily estimate of Delta outflow.

Third, the foremost reason to allocate water to Delta outflow—as D-1641 requires the Projects to do—is to reasonably protect the many beneficial uses of water originating in the Delta watershed. These include water quality conditions protective of the health and

²⁰ Appropriately apportioning shortage among riparian claimants is an ongoing challenge facing the State Water Board, ODWM, and water users within the Legal Delta. See, e.g., report of the Delta Watermaster at the State Water Board meeting on September 20, 2022. The video is available at: <https://youtu.be/g2h39wAZ2wM?t=26155> (Report starts at 7:15:50.)

²¹ Although California recognizes both riparian and appropriative water rights, it has never reconciled the different ways for apportioning shortages. Appropriations follow the rule of priority (“first in time, first in right”) under which junior appropriators are curtailed to protect full diversion by senior appropriators. Riparian water rights, however, are expected to apportion shortage among all those sharing the watercourse: so-called correlative reduction in use. The two unreconciled systems for addressing drought present a challenge in the Legal Delta where unadjudicated pre-1914 and riparian claims divert water from the same channels.

²² In another conservative assumption, the spreadsheets’ analysis assumed that Delta outflow was met exclusively by the portion of Delta inflow previously released from Project storage.

²³ See e.g. the Department of Water Resources 2016 report, *On Estimating Net Delta Outflow* available at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/ndo_report_mar_ch2016.pdf

ecosystem function of the estuary, as well as agricultural and municipal/industrial uses within the watershed and in the Project export areas. Although noting the purpose of Delta outflow is technically unnecessary for refining the mass balance analysis,²⁴ the Investigation referenced the Public Policy Institute of California's (PPIC) 2017 report: *A New Approach to Accounting for Environmental Water: Insights from the Sacramento-San Joaquin Delta*.²⁵

C. Quantifying/Categorizing Exports²⁶

Water is diverted from the Legal Delta for use outside the watershed (1) at the intake to the CVP's Jones Pumping Plant near Tracy, (2) at the SWP's gated diversion into the Clifton Count Forebay near Byron, (3) at the SWP's Barker Slough Pumping Plant northeast of Rio Vista, (4) at Contra Costa Water District's pumping plants in the central Delta, (5) at the Banta Carbona Irrigation District's point of diversion from the San Joaquin River east of Tracy,²⁷ and (6) at the Freeport Diversion Structure in Sacramento.

The operator of each of these export facilities makes daily reports of their respective diversions, and the reported diversions are published by the California Data Exchange Center (CDEC).²⁸ Each operator estimates and reports diversions based on its own methodology. In the case of the Projects' diversions, their methodology relies on periodic pump efficiency tests, power consumed to operate the diversion pumps, and records of which pumps were operated for what periods. The operator then reports the daily average diversion rate in cubic feet per second (cfs) and/or in acre-feet per day. These reports provide a credible record of daily exports; however, the Investigation technical team acknowledged that the export estimates published in CDEC also include a range of uncertainty and are subject to subsequent revision and correction.²⁹

²⁴ Such conceptualization is not strictly necessary either for the mass balance analysis supporting the complaint or for completing the Investigation. Delta outflow is simply a subtraction factor to arrive at the estimate of in-Delta depletions.

²⁵ The summary and report are available at: <https://www.ppic.org/publication/a-new-approach-to-accounting-for-environmental-water-insights-from-the-sacramento-san-joaquin-delta/>

²⁶ For purposes of the Investigation, water can be considered exported when it is diverted from the Delta for beneficial use outside (or mostly outside) the Delta watershed.

²⁷ Almost the entire BCID service area is within the Legal Delta. However, BCID diverts a small and variable amount of water under an agreement with the United States Bureau of Reclamation to divert and wheel San Joaquin River Restoration Program water for return to the CVP place of use. From time-to-time BCID also wheels water for application outside the Delta watershed.

²⁸ See <https://cdec.water.ca.gov/>

²⁹ The Projects do not consistently measure their diversions with flow meters as generally required under regulations implementing Water Code section 1840. See <https://water.ca.gov/Programs/State-Water-Project/Operations-and-Maintenance/Operations-and-Delta-Status> Under 'Delta Status and Operations' select 'Hydrologic Conditions Summary (daily)' to see daily NDOI for the recent period.

IV. Differentiating Water Uses within the Legal Delta

Apparently, net water depletions within the Legal Delta have been remarkably consistent over the last 40 years at 1.8 million acre-feet annually.³⁰ However, for purposes of the Investigation, it has been appropriate to disaggregate water depletions within the Legal Delta to identify the subset of such depletions which might be further investigated as potentially unauthorized.

A. Natural Depletions

There are a variety of water uses that are not currently susceptible to effective measurement or management. Among the most significant consumptive uses in this category are (1) evaporation from open water, and (2) evapotranspiration (ET) of riparian and aquatic vegetation. Reasonable estimates of such depletions must take into account not only the geographic extent of open water and vegetation but also temperature, humidity, wind, cloud cover and hours of daylight. The United States Geological Service estimated that there were approximately 78,000 acres of exposed surface water in Suisun Bay and the Delta.³¹ The California Department of Water Resources (DWR) estimated that the Legal Delta included more than 60,000 acres of open water in 2008, with modest seasonal fluctuation.³² Riparian and aquatic vegetation also varies by type, extent, and seasonal water demand. Thus, an unquantified, but not insignificant, portion of depletions identified in the mass balance analysis is attributable to unmanaged and unmeasured natural water depletions within the Legal Delta.³³

B. In-Delta Agricultural Diversions

The largest category of managed³⁴ diversion and consumption of water in the Legal Delta supports the irrigation of crops. At its heart, the FWA complaint seeks to limit such use by preventing diversion by riparian claimants of that portion of the fresh water in the Delta contributed by the release of previously stored Project water (including return flows from application of such reservoir releases). According to the complainants' analysis, the reservoir releases—which are physically commingled in the Delta with other inflows—are not “natural flow” which riparian water right holders are authorized to divert for beneficial use on their riparian parcels. As discussed above, the

³⁰ See PPIC's recent report titled, *Tracking Where Water Goes in a Changing Sacramento-San Joaquin Delta* available at: <https://www.ppic.org/publication/policy-brief-tracking-where-water-goes-in-a-changing-sacramento-san-joaquin-delta/>

³¹ See U.S. Geological Survey, *Suisun Bay & Delta Bathymetry: Production of a 10-meter Grid (2007)* available at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/SHR/SHR-407.pdf

³² See Department of Water Resources, State Water Project, *Where Rivers Meet—the Sacramento-San Joaquin Delta* (2008).

³³ Although there are several research projects and proposals aimed at quantifying the ET of riparian vegetation in the Legal Delta, this Investigation was unable to identify a published report to establish a range of such depletions.

³⁴ The Investigation explicitly acknowledged that only managed diversions—not natural depletions—should be considered for potential enforcement action pursuant to the FWA complaint.

analysis conducted as part of this Investigation could not accurately estimate or quantify the amount of inflow to the Legal Delta attributable to the release of previously stored Project water, and therefore could not quantify the natural and abandoned flow entering the Legal Delta. Notwithstanding this significant impediment to potential enforcement, the Investigation proceeded to disaggregate the types of managed agricultural diversions located within the Legal Delta which were the focus of the FWA complaint. According to the State Water Board's electronic water rights information management system (eWRIMS), there are approximately 2,300³⁵ such diversions.

V. Further Differentiation of Agricultural Diversions within the Legal Delta

The Investigation further narrowed its focus by eliminating consideration of potential enforcement against unauthorized diversion of water within the boundaries of the North Delta Water Agency (NDWA).³⁶ Diversions for beneficial use within the boundaries of NDWA are supported not only by the underlying water rights and claims of individual water users but also by a "back-up" contract³⁷ with the Department of Water Resources for the assurance of a dependable water supply of suitable quality. Therefore, even if the Investigation were to conclude that a diverter within the NDWA's boundaries lacked its own water right or claim of right sufficient to support the diversion and beneficial use of water, the NDWA contract likely provides an alternative lawful basis to sustain the diversion.

According to eWRIMS, there are approximately 900³⁸ agricultural diversions within the NDWA boundaries. Reports of water use during the first nine months of calendar year 2021³⁹ were due by April 1, 2022 and, thus, these reports are the most recent user reports of diversion for agricultural use within the NDWA boundaries. Preliminary analysis of the recent reports suggests that these diversions account for an aggregate of approximately 500,000 acre-feet of water use during that nine-month period.

East Contra Costa Irrigation District (ECCID), which supplies water to approximately 8,000 irrigated acres near Brentwood, has a similar "back-up" contract with the

³⁵ For water use during calendar year 2020, there were 2,315 Supplemental Statements of Water Diversion and Use filed for points of diversion located within the Legal Delta.

³⁶ NDWA covers approximately 302,000 acres in parts of Sacramento, Yolo, Solano, and San Joaquin Counties. See Final Engineers Report, dated November 2010, posted on NDWA's website at: <http://nebula.wsimg.com/ecb714c2e8447390efcff63c2ca1bb1e?AccessKeyId=416779FFC987EE3E9438&disposition=0&alloworigin=1>

³⁷ The NDWA/DWR contract is posted on NDWA's website at: <http://www.northdeltawater.net/our-contract.html>

³⁸ This estimate is based on 907 active Statements for points of diversion plotted within the NDWA boundaries. This estimate ignores licenses, which generally either duplicate diversions under Statements or support exports (e.g., diversions to the North Bay Aqueduct).

³⁹ To develop more consistent user reports of water diversion and use, reporting period and due dates have been consolidated. For more detail see the explainer available at: https://www.waterboards.ca.gov/water_issues/programs/delta_watermaster/docs/reportingduedates.pdf See also the Notice of Proposed Rulemaking published on July 15, 2022 and materials associated with adoption of the proposed regulations at the State Water Board's September 20, 2022 meeting.

Department of Water Resources.⁴⁰ Therefore, the Investigation also eliminated the potential to proceed with enforcement against ECCID diversions, primarily under its 1912 appropriative claim, because the contract likely provides an alternative basis for lawful diversion and use.⁴¹

VI. Quantification of Water Potentially “at Stake” in the Complaint

After differentiating (i) unquantified but substantial natural depletions and (ii) diversions supported by backup contracts within the Legal Delta, the Investigation attempted to roughly quantify the remainder of potentially unauthorized diversions implicated for enforcement by the FWA complaint.

A. Remaining Location and Area

Geographically, the remaining agricultural water diversions in the Legal Delta are within the eastern agricultural areas of Contra Costa County,⁴² within the boundaries of the Central Delta Water Agency (CDWA),⁴³ or the South Delta Water Agency (SDWA).⁴⁴ There is also a roughly 4,000-acre agricultural parcel on Union Island East located between, but excluded from, CDWA and SDWA. Thus, this remaining subregion of the Legal Delta aggregates approximately 276,000 acres.

B. Types of Water Rights/Claims

The FWA complaint explicitly sought to protect Project water from unauthorized diversion within the Legal Delta. However, because of the overwhelming prevalence of colorable but unadjudicated riparian claims within the Legal Delta,⁴⁵ the Investigation necessarily focused on the bases for enforcement of common law limits on riparian claims (in this case, diversions being restricted to natural flow available in the contiguous watercourse). Water diversions at many points within the Legal Delta are also supported by a permit or license issued by the State Water Board or its predecessor. Often, a permit or license is owned by the reclamation district,⁴⁶ while individual landowners within the district claim the more senior riparian right. The existence of these overlapping water rights/claims—often sharing common points of

⁴⁰ See the contract description in Contra Costa County LAFCO’s municipal service profile available at http://www.contracostalafco.org/municipal_service_reviews/east_county_water_wastewater/6.0%20ECCID_WaterWastewater%20Final.pdf

⁴¹ Diversion under ECCID’s pre-1914 water right was curtailed between July 7 and July 13, 2022. Diversions likely continued, however, based on the contract with DWR.

⁴² The area includes Webb (approximately 5,500 acres), Holland (4,000) and Palm-Orwood (6,200) Tracts as well as smaller or less intensively farmed areas such as Coney Island (1,000).

⁴³ CDWA includes approximately 120,000 acres.

⁴⁴ SDWA includes approximately 137,000 acres. See maps on SDWA’s website at: <https://southdeltawater.org/maps>

⁴⁵ A few diversions in the Legal Delta are supported by colorable pre-1914 claims.

⁴⁶ There are 110 reclamation districts within the Legal Delta. In addition to managing their licenses, reclamation districts generally collect assessments and manage levee maintenance.

diversion, serving common places of use, and meeting the same beneficial use for irrigation—contributes to confusion embedded in water use data.⁴⁷

In times of severe drought, the ability to divert under a permit or license may be limited by a lack of water availability under the diverter’s priority of right and—as in recent droughts—by regulatory curtailments implementing the priority system during periods when water supplies are inadequate to support all demands.⁴⁸ Thus, pursuant to Governor Newsom’s emergency drought proclamations, the State Water Board adopted emergency curtailment regulations that were effective as of late August 2021.⁴⁹ As a result, permits and licenses throughout the Legal Delta were curtailed for a brief period at the end of the 2021 irrigation season⁵⁰ and for extended portions of the 2022 irrigation season. In addition, recent licenses (those issued after about 1965) are subject to curtailment under their standard Term 91 during a portion of most summers.⁵¹ Outside of such curtailment periods, however, permits and licenses could provide a distinct basis for diversions in many parts of the Legal Delta, subject to specified limits on amounts and seasons of use.

VII. Legal Issues

The Investigation focused primarily on settled issues of water rights administration, some of which are unique to the Legal Delta. In addition, however, we took account of legal issues—some resolved and others yet unresolved—since the last major drought (2012-2016).

A. Resolved

The two most significant and directly relevant legal issues that have been resolved through court processes since curtailments were issued in 2015 relate to (i) standards and burdens of proof required to substantiate prosecution of an alleged unlawful diversion and (ii) the appropriate indicia of a riparian water right claim when land parcels have been subdivided to eliminate contiguity with the relevant watercourse.

In a State Water Board Order that rejected ODWM’s prosecution of Byron-Bethany Irrigation District (BBID) for unauthorized diversion and use of water, the Board determined that meeting the burden of proof for prosecuting an unauthorized diversion

⁴⁷ See https://www.waterboards.ca.gov/water_issues/programs/delta_watermaster/docs/revised-consensus.pdf

⁴⁸ Because the water right permitting and licensing process dates only from 1914, prior perfected appropriations and riparian rights are accorded seniority. Therefore, curtailing a permit or license may not reduce water use when the diversion is simply shifted to a more senior underlying right that was “masked” by prior reports of use under the curtailed permit or license.

⁴⁹ For additional detail about the State Water Board’s recent drought responses, including curtailment of licenses pursuant to the emergency regulations see the regularly updated drought webpage available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/. See also the revised emergency regulations adopted by the State Water Board on July 20 and effective as of August 12, 2022.

⁵⁰ The process for adopting emergency regulations, though expedited, consumed a significant portion of the 2021 irrigation season, a period when the complaint was pending, and the Investigation was underway.

⁵¹ See a more detailed description of how Term 91 is administered at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/term_91/.

or use of water requires using the most accurate information available to determine water unavailability.⁵² The issues with determining water unavailability identified in the BBID case partially informed the ongoing improvements to what is now the Water Unavailability Methodology for the Delta Watershed (Methodology). The Methodology was incorporated into the State Water Board's current emergency curtailment regulation.⁵³ However, FWA's complaint is based on a separate analysis. That analysis—even as augmented by the Investigation—lacks key information concerning the availability of natural flows in the Legal Delta and a practical way of apportioning shortage among riparian water rights, as discussed above.

Separately, in 2020, the Third District Court of Appeal handed down its decision in *Modesto Irrigation District v. Tanaka*⁵⁴ (*Tanaka*) and the California Supreme Court subsequently denied further judicial review. *Tanaka* resolved uncertainty about the evidentiary standard for evaluating a riparian claim in the historical context of Delta reclamation in the late nineteenth and early twentieth centuries. Applying the principles articulated in *Tanaka*, ODWM settled several similar, previously initiated prosecutions challenging riparian water right claims in the Legal Delta. More importantly for current purposes, *Tanaka* underscores that colorable riparian water right claims represent the predominant justification for agricultural diversions within the CDWA and SDWA boundaries (and, by extension, in agricultural areas of eastern Contra Costa County that are within the Legal Delta) that became the geographic focus of the Investigation. Finally, among tangentially related cases resolving issues presented by challenges in the last drought, the State Water Board's authority to promulgate and implement curtailment regulations was upheld by the California Court of Appeal with further review denied by both the California Supreme Court and the U.S. Supreme Court.⁵⁵

B. Unresolved Issues Not Addressed in the Investigation

1. Application of *Butte Canal*⁵⁶ to commingled reservoir releases and natural flow within the Legal Delta.
2. Extent and application of the so-called Delta Pool Theory.
3. Delta diverters' claim that they are intended beneficiaries of Project operations.
4. Appropriate definition of and burden of proof to identify "Natural Flow" to which riparian claims attach.

⁵² See Order WR 2016-0015, pp. 14-16.

⁵³ See California Code of Regulations, title 23, section 876.1 et seq.

⁵⁴ *Modesto Irrigation Dist. v. Tanaka*, 48 Cal.App.5th 898 (Cal. Ct. App. 2020), 262 Cal. Rptr. 3rd 408.

⁵⁵ *Stanford Vina Ranch Irrigation Co. v. State of California*, 50 Cal.App.5th 976 (Cal. Ct. App. 2020).

⁵⁶ *Butte Canal & Ditch Co. v. Vaugn*, 11 Cal. 143 (1858). See also discussion in CDWA and SDWA comments referenced in footnote 6 herein.

VIII. Alternative Paths to Resolve Allegation of Unlawful Diversion

1. Improving Delta Water Use Data⁵⁷
2. Refining Supply/Demand Methodology
3. Identifying Alternative Bases to Support Curtailments through Collaborative Processes
4. Resolving Legal Issues (Litigation, Legislation, Regulation, Negotiation?)

⁵⁷ In the course of the Investigation, the complainants requested that ODWM provide a summary of efforts and initiatives to improve the consistency, credibility and reliability of water use data within the Legal Delta. The current draft of that summary is available at:

https://www.waterboards.ca.gov/water_issues/programs/delta_watermaster/docs/improvedata2.pdf