980 9th Street, Suite 1500
Sacramento, CA 95814
www.deltacouncil.ca.gov

Single-Year Water Transfers and the Delta Plan

Requested Action: Direct the staff to prepare, for the Council's consideration in December, draft findings that support: (a) proposed amendment of the Delta Plan's implementing regulations (California Code of Regulations, Title 23, section 5001, subdivision (dd)) to exempt one-year water transfers from regulation as covered actions, consistent with this staff report's proposed draft language; (b) a proposed corresponding amendment of Delta Plan recommendation WR R15, consistent with this staff report's proposed draft language; while, (c) reserving the right to revisit, based on emerging science and new information that becomes available in the future, the determination that single-year transfers do not have a significant impact on the coequal goals.

The Council's adoption of draft findings and regulatory language in December 2015 will trigger an environmental review effort by staff. No final action will be taken by the Council until environmental review is complete. Furthermore, any regulation amended at the conclusion of environmental review will not take effect until the Office of Administrative Law rulemaking process is completed.

Staff's Preliminary Findings

The staff believes, based on its review, that under the current operations of the Central Valley Project (CVP) and the State Water Project (SWP) and under existing regulatory oversight, single-year water transfers that are conveyed through the Delta do not have a significant impact on the coequal goals of statewide water supply reliability and the protection, restoration, and enhancement of the Delta ecosystem, and so are not regulated as covered actions under the Delta Reform Act.

While there is some information suggesting that the impacts of single-year water transfers may have local effects on fish, birds, and terrestrial species by affecting habitat, those impacts are currently modest and do not occur in the Delta but are normally limited to areas upstream from where the water transfers originate. Staff has not been able to find clear scientific information demonstrating that single-year water transfers increase the risk of entrainment or have any significant impact on smelt or salmon fisheries in the Delta.

While single-year water transfers do provide water supply benefits to those water suppliers who receive the transferred water, the volume of single-year water transfers does not significantly impact California's overall water supply reliability.

Should these existing conditions change over time, the Council retains the authority to reexamine the regulation of single-year water transfers. Should the operations of the CVP or the SWP change the way single-year water transfers are managed, or if the volume of single-year water transfers increases substantially, the Council may want to

analyze any impacts these changes may cause. New information about the impacts of single-year water transfers on the Delta's native fishes and other resident and migratory Delta species may also lead the Council to reexamine the impacts of single-year water transfers.

Background

In developing the Delta Plan, the Council recognized the important contribution of water transfers to water supplies and acknowledged the existing regulatory controls over water transfers. Given the existing oversight applied to water transfers, the Council was cautious about the potential to disrupt single-year water transfers through the application of additional regulatory oversight – specifically, the Council's authority over covered actions. Thus the Council excluded single-year transfers from its covered actions process, but only until Dec. 31, 2016, by concluding they did not have a significant effect on the coequal goals.

In anticipation of that sunset date, the Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB) began working with numerous water transfer stakeholders to increase outreach and education about the legal and institutional requirements for water transfers; began meeting regularly with the Bureau of Reclamation (Reclamation) and state and federal fish agencies to share knowledge and exchange information about proposed water transfers; increased transparency surrounding water transfers by posting information about water transfers to their websites; and began drafting information reports for the Council. At the July 2015 Council meeting, the staff sought to re-engage the Council on the topic of single-year water transfers; prepare it for future briefings by water transfer regulators, practitioners and stakeholders; and propose a process and schedule by which the Council can address the status of single-year water transfers, specifically their impacts to the Delta ecosystem and their role in statewide water supply reliability.

The Delta Plan's Current Provisions Regarding Single-Year Water Transfers

A water transfer is a voluntary change in the way water is normally distributed among water users in response to water scarcity. Transfers can be either temporary or long-term changes in the point of diversion, place of use, or purpose of use. Many transfers involve payment from the water user receiving the transferred water to the user sending the water. Other transfers are water exchanges, which are typically water delivered by one water user to another water user; the receiving water user will then return the water at a specified time or when the conditions of the agreement are met. Some volume of transfers occurs in most years, but transfers increase in dry years when areas with inadequate local water sources seek additional water from areas with more ample supplies.

The Delta Plan recognizes that north-to-south water transfers across the Delta can be an important tool for improving water supply reliability (Delta Plan p. 85). The Plan cites the Public Policy Institute of California's 2011 report *Managing California's Water: From*

Conflict to Reconciliation, which found that legal and institutional barriers appeared to be limiting the use of transfers. Among these barriers was the absence of a comprehensive, programmatic study of water transfers' environmental effects, which could provide a consistent, more reliable, and less time-consuming basis for assessing transfers' effects. PPIC cited four potential types of impacts that need consideration:

- Surface water. Potential for harm to water quality, stream flows, and water supplies for other users.
- Groundwater. Potential effects on groundwater recharge caused by substitution of groundwater for a surface water supply transferred to another region.
- Wildlife habitat. Potential impacts, especially to wildlife that relies on rice or pasture which may be fallowed to transfer irrigation water to another region.
- Local economies. Potential loss of local economic activity and potentially increased local costs for social services.

Because multiyear water transfers remain subject to CEQA, their effects on the surface and groundwater supplies and wildlife habitat that the PPIC report lists must be analyzed before they are approved. One-year water transfers that are under the jurisdiction of the State Water Resources Control Board, however, are statutorily exempted from review under the California Environmental Quality Act. This is partly because water may need to be moved quickly, without the delays imposed by CEQA compliance, and partly because any potential harm they may cause is also short-lived[1]. Other one year transfers must comply with CEQA.

In addition, the Delta Plan's narrative recognized the potential that future changes in storage (Delta Plan p. 83) or conveyance (p. 85) infrastructure could affect transfer opportunities. In its list of science and information needed to better manage water supplies, the Council included improved models of aquifer and surface-groundwater relationships including the implications for water transfer programs and other water management actions Delta (Plan p. 109).

A. The Delta Plan's Recommendation to Improve Water Transfer Procedures

As the Delta Plan was drafted, the Council received testimony from those who worried that the Council might add another layer of regulatory oversight that would impede one-year water transfers, especially during drought conditions. Others, however, expressed concern about the potential effects of single-year transfers, especially if a series of one year transfers were carried out over several years during a multi-year drought.

Seeking to spur reforms that removed unnecessary administrative and regulatory obstacles to water transfers but wary of potential effects of some transfers, the Council adopted a Delta Plan recommendation calling for further examination of the role and effects of single-year water transfers. The plan, adopted in May 2013, recommends:

---

[1] Hanak, Ellen, Jay Lund, Ariel Dinar, Brian Gray, Richard Howitt, Jeffry Mount, Peter Moyle, and Barton "Buzz Thompson. 2011. *Managing California's Water -- From Conflict to Reconciliation*. Public Policy Institute of California. pp. 331-336.

> **Improve Water Transfer Procedures** (**WR R15)** – *The California Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB) should work with stakeholders to identify and recommend measures to reduce procedural and administrative impediments to water transfers and protect water rights and environmental resources by December 31, 2016. These recommendations should include measures to address potential issues with recurring transfers of up to 1 year in duration and improved public notification for proposed water transfers.*

B. The Delta Plan's Implementing Regulation about Water Transfers

At the time it approved the Delta Plan, the Council also considered exempting single-year transfers from regulation as covered actions under the Delta Plan's regulatory policies. The Delta Reform Act (Act) requires a state or local public agency that proposes to undertake certain actions that will occur in whole or in part within the boundaries of the Delta or the Suisun Marsh, prior to taking those actions to prepare and submit to the Council a certification of consistency with the Delta Plan. These proposed actions are known as covered actions and are defined by the Act (Water Code section 85057.5):

> *"Covered action" means a plan, program, or project as defined pursuant to Section 21065 of the Public Resources Code that meets all of the following conditions:*
>
> 1. *Will occur, in whole or in part, within the boundaries of the Delta or Suisun Marsh;*
> 2. *Will be carried out, approved, or funded by the state or a local public agency;*
> 3. *Is covered by one or more provisions of the Delta Plan;*
> 4. *Will have a significant impact on the achievement of one or both of the coequal goals or the implementation of government-sponsored flood control programs to reduce risks to people, property, and state interests in the Delta.*

The Delta Plan's implementing regulations provide:

> "Significant impact" for the purpose of determining whether a project meets the definition of a "covered action" under section 5001(j)(1)(D) means a substantial positive or negative impact on the achievement of one or both of the coequal goals or the implementation of a government-sponsored flood control program to reduce risks to people, property, and State interests in the Delta, that is directly or indirectly caused by a project on its own or when the project's incremental effect is considered together with the impacts of other closely related past, present, or reasonably foreseeable future projects (California Code of Regulations, Title 23, section 5001).

The Council has the discretion to define categories of activities that will or will not have a significant impact on the coequal goals for the purpose of determining whether a project meets the definition of a covered action (Water Code section 85057.5). When adopting the Delta Plan, the Council considered creating a permanent exemption for single-year transfers, but the evidence before it at the time did not support such a permanent exemption. Instead, the Council adopted an interim regulatory policy that would exempt single-year transfers prior but that would automatically sunset that exemption on December 31, 2016. The Council determined that single-year transfers prior to that date would not, either individually or cumulatively, have significant impacts on the coequal goals. The regulation provides, in part:

> *The following categories of project will not have a significant impact for purposes of whether a project meets the definition of "covered action" …. (dd) – Temporary water transfers of up to one year in duration. This provision shall remain in effect only through December 31, 2016, and as of January 1, 2017, is repealed, unless the Council acts to extend the provision prior to that date. The Council contemplates that any extension would be based upon the California Department of Water Resources and the State Water Resources Control Board's participation with stakeholders to identify and recommend measures to reduce procedural and administrative impediments to water transfers and protect water rights and environmental resources by December 31, 2016. These recommendations should include measures to address potential issues with recurring transfers of up to 1 year in duration and improved public notification for proposed water transfers. Unless the Council takes additional action, the determination that single-year water transfers do not have a significant impact on the coequal will expire December 31, 2016. (California Code of Regulations, Title 23, Section 5001).*

Report by the California Department of Water Resources and the State Water Resources Control Board in Response to the Delta Plan

At the September 2015 Council meeting, DWR Deputy Director Bill Croyle and SWRCB Executive Officer Tom Howard briefed the Council about their agencies' consultations with stakeholders, as recommended in the Delta Plan, to identify and recommend measures to reduce procedural and administrative impediments to water transfers and protect water rights and environmental resources. The briefing described the role of these agencies in regulating water transfers and ensuring that proposed water transfers do not adversely affect the environment or other water users. They also briefed the Council on the status of their efforts to reduce procedural and administrative impediments to water transfers while protecting water rights and environmental resources. The Council also received two written reports on water transfers from these agencies: *Background and Recent History of Water Transfers in California*[2] and *Water Transfers and the Delta Plan*[3].

---

[2] Department of Water Resources (DWR), and the State Water Resources Control Board (SWRCB). 2015. *Background and Recent History of Water Transfers in California*. July.

According to the DWR and the SWRCB presentations, the water transfer review process has always been robust and ensures that protections are in place for all water users, both in the Delta and upstream where the water transfer originates. The process is guided by DWR's annual *Technical Information for Preparing Water Transfer Proposals (Water Transfer White Paper)* and a water transfer proposal checklist. All multiyear transfers and one year transfers not overseen by the SWRCB must comply with CEQA, and all water transferred through the State Water Project or the Central Valley Project must comply with biological opinions protecting threatened or endangered native fish and with the Bay Delta water quality control plan.

DWR reports that in 2014 and 2015, it executed 13 and five single-year transfers respectively. In 2014, six of the 13 single-year transfers, representing 21 percent of the volume of water transferred by DWR, were also reviewed by SWRCB and were therefore exempt from CEQA requirements. The remaining seven single-year transfers, representing 79 percent of the single-year water transfer volume, were not reviewed by SWRCB and were subject to CEQA requirements. In 2015, four of the five single-year transfers, representing 90 percent of transfer volume, were also reviewed by SWRCB and were exempt from CEQA. The fifth transfer, representing the remaining 10 percent of the single-year water transfer volume, was not reviewed by SWRCB and was subject to CEQA. During these years, impacts of every transfer were either assessed under CEQA or reviewed by the SWRCB. Staff has no information on the specific transfers executed by Reclamation through the CVP facilities because it reports the total volume of transferred water rather than information about individual transfers.

The review and approval of single-year transfers, however, has significantly changed as a result of Governor Brown's May 20, 2013 and April 25, 2014 Executive Orders directing DWR and SWRCB to expedite the review and processing of water transfers. The proposed water transfer review process has become more transparent with the development of, and the refinement of DWR's water transfer website. Proposed single-year water transfer reviews are now better coordinated among SWRCB, Reclamation, and DWR, and include the participation of DWR's executive management to help accelerate decisions for approving or denying water transfers. Proposed single-year water transfer reviews now involve state and federal fish agencies early in the process to ensure that the ecosystem is protected. Mr. Croyle discussed additional improvements that DWR is developing to continue streamlining the proposal and review process for all water transfers, such as the development of an online application process.

In implementing WR R15, the Council requested that DWR and SWRCB make recommendations to address the issue of recurring single-year water transfers and the concern they are being used in lieu of a multi-year water transfer agreement to

---

[3] Department of Water Resources (DWR). 2015. *Water Transfers and the Delta Plan: A Report to the Delta Stewardship Council* September 16, 2015.

circumvent California Environmental Quality Act (CEQA) review requirements. DWR and SWRCB reported that they do not believe that recurring single-year water transfers are being used in lieu of a multi-year water transfer agreement. Mr. Croyle testified that there may be a perception that single-year water transfers are sometimes requested by the same buyer or seller in consecutive years. Within DWR's written report to the Council, *Water Transfers and the Delta Plan*, DWR notes, however, that single-year water transfers are "rarely the same each year, even though the same seller or buyer may be involved in implementing temporary transfers in consecutive years. The need for water transfers, the amount of water available, and the amount of transfer conveyance capacity varies from year to year, depending on hydrologic conditions." Mr. Howard testified that he agrees with DWR's report on recurring single-year water transfers.

Effects of Single-Year Water Transfers on the Coequal Goals

As described above, the Delta Reform Act (Act) requires state or local public agencies to certify that a project is consistent with the Delta Plan only if, in part, the project "will have a significant impact on the achievement of one or both of the coequal goals or the implementation of government-sponsored flood control programs to reduce risks to people, property, and state interests in the Delta (Water Code section 85057.5).

To determine whether single-year water transfers significantly impact the achievement of one or both of the coequal goals, the Council invited testimony from two panels of experts. The first panel was comprised of environmental stakeholders: Dr. Bruce Herbold, an estuarine ecology expert, and Sandi Matsumoto, associate director for The Nature Conservancy (TNC). An additional panelist, water rights attorney Michael Jackson, was invited, but did not participate on the panel. The second panel represented water transfer practitioners: Dustin Cooper, a water law attorney; Frances Mizuno, assistant executive director of the San Luis & Delta Mendota Water Authority (SLDMWA); and Steve Hirsch, transfer program manager for the Metropolitan Water District of Southern California.

A. Impacts to the Goal of Ecosystem Restoration

The Delta Plan provides:

> Achieving the coequal goal of "protecting, restoring, and enhancing the Delta ecosystem" means successfully establishing a resilient, functioning estuary and surrounding terrestrial landscape capable of supporting viable populations of native resident and migratory species with diverse and biologically appropriate habitats, functional corridors, and ecosystem processes.

In considering the effects of water transfers on the goal of protecting, restoring, and enhancing the Delta ecosystem, the staff has reviewed the *Long-Term Water Transfers Environmental Impact Report/Environmental Impact Statement* (EIR/EIS) prepared in

2014 by the Bureau of Reclamation and SLDMWA to evaluate the potential impacts of water transfers occurring over a 10 year period to address the CVP's water delivery shortages. The EIR/EIS concluded that those water transfers would not have a significant impact on the Delta ecosystem. With regards to the categories of potential impacts noted by PPIC, the EIR/EIS acknowledged that groundwater substitution transfers could have impacts resulting in stream flow depletion, but that these impacts could be mitigated with the application of a streamflow depletion factor that reduces the amount of water that can be transferred relative to the amount of groundwater pumped. The report also found that groundwater substitution transfers could reduce stream flows supporting fisheries in small streams, but these impacts were not significant. Habitat for giant garter snake and various birds including waterfowl, shorebirds and riparian songbirds may also occur, but the EIR/EIS highlighted the environmental commitments to minimize impacts to these species. These impacts normally occur outside the Delta in the Sacramento Valley where many of the single-year water transfers originate.

Evidence presented to the Council by DWR confirms that single-year water transfers of the number and volume occurring in recent years do not impact the coequal goal of ecosystem restoration. For example, these transfers do not significantly impact the estuary because the volume of water transferred makes up an insignificant fraction of water inflows and outflows to the Delta. According to data DWR provided in its written report to the Council, DWR and Reclamation together transferred approximately 0.22 million acre-feet (MAF) of single-year water transfers in 2014. This makes up about three percent of the 7.5 MAF of water that flowed into the Delta in water year 2014[4].

Even less water is exported through single-year water transfers under more typical water conditions. The average amount of single-year transfers exported from the Delta since the CVP and SWP began operating under the 2008 and 2009 biological opinions for the *Continued Long-term Operations of the Central Valley Project and the State Water Project* (biological opinions) has been 72,330 acre-feet per year[5], about 0.46 percent of the Delta's average annual Delta inflow of 15.6 MAF[1] during the 2008-2014 period, which includes two critically dry years. Because the volume of single-year water transfers exported from the Delta is such a small fraction of flows into and out of the Delta, these single-year transfers do not significantly affect the restoration of Delta flows and channels to support a healthy estuary.

Furthermore, all single-year transfers must be consistent with the 2009 National Marine Fisheries Service and the 2008 U.S. Fish and Wildlife Service biological opinions that govern long-term operations of the SWP and CVP. These opinions, which pursuant to the federal Endangered Species Act are based on the best scientific data available, allow for a transfer of up to 600,000 acre-feet during dry and critically dry years as long

---

[4] California Department of Water Resources. Dayflow Data Through Water Year 2014. Available from http://www.water.ca.gov/dayflow/output/Output.cfm (accessed 1 September 2015).
[5] Nancy Quan, DWR. "Transfer water exported at SWP facilities." E-mail message to Kevan Samsam. November 10,2015.

as the water transfer occurs in the July-September period[6,7,8]. During this time period, Delta smelt are distributed in the western Delta where they will not be affected by any entrainment related to water transfers through the SWP or CVP systems[9,10,11]. The July-September time frame also minimizes the impacts to Chinook salmon as juvenile salmon at risk of entrainment are normally not present in the Delta during these months.

In addition, all transfers must be consistent with rules that require exports from DWR's and Reclamation's pumps to protect water quality consistent with the SWRCB's Bay-Delta water quality control plan. As described in DWR's 2014 written report to the Council, DWR and USBR impose a "carriage water" requirement for each through-Delta transfer which represents the portion of the water entering the Delta necessary to protect water quality by repelling the potential intrusion of salinity due to exporting the additional transferred water.[12] In these ways, single-year transfers do not interfere with the objective of reducing the risk of incidental take of endangered species and improving water quality, two of the categories of potential effects noted in PPIC's report.

Dr. Bruce Herbold, one of the panelists addressing the Council in September, testified that water transfers through the Delta can have impacts on fish. He stated that water transfers occurring during periods of decreased flows and when fish populations are lower, less dispersed, and more at risk could amplify adverse impacts. He also noted that changes in Delta operations can decrease Delta outflow so that the high salinity zone moves eastward from Suisun Bay into the Delta, reducing the suitable brackish habitat preferred by some species. Lastly, Dr. Herbold concluded that water transfers can affect upstream flow patterns or temperatures, which can have an adverse impact on certain fish species.

---

[6] U.S. Department of the Interior. 2008. Biological Assessment on the Continued Long-term Operations of the Central Valley Project and the State Water Project. Available from http://www.usbr.gov/mp/cvo/ocap_page.html.

[7] (NMFS) National Maine Fisheries Service. 2009. NOAA's National Marine Fisheries Final Biological Opinion and Conference Opinion based on NMFS Review of the Proposed Long-term Operations of the Central Valley Project and State Water Project. Available from http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/Operations,%20Criteria%20and%20Plan/nmfs_biological_and_conference_opinion_on_the_long-term_operations_of_the_cvp_and_swp.pdf. Chapter 6 (starting on page 313) provides our analysis of effects of the action.

[8] Fish and Wildlife Service. 2008. Formal Endangered Species Act Consultation on the Proposed Coordinated Operations of the Central Valley Project (CVP) and State Water project (SWP). Available from http://www.fws.gov/sfbaydelta/documents/SWP-CVP_OPs_BO_12-15_final_OCR.pdf.

[9] Sommer, T., F. Mejia, M. Nobriga, F. Feyrer, and L. Grimaldo. 2011. The spawning migration of delta smelt in the upper San Francisco Estuary. San Francisco Estuary and Watershed Science 9(2). Available at: http://escholarship.org/uc/item/86m0g5sz.

[10] Merz, J.E., S. Hamilton, P.S. Bergman, and B. Cavallo. 2011. Spatial Perspective for Delta Smelt: a Summary of Contemporary Survey Data. Cramer Fish Sciences, Auburn, California, USA.

[11] M.L. Nobriga, T.R. Sommer, F. Feyrer, and K. Fleming. 2008. Long-Term Trends in Summertime Habitat Suitability for Delta Smelt, *Hypomesus transpacificus*. San Francisco Estuary and Watershed Science 6(1). Available at: http://escholarship.org/uc/jmie_sfews?volume=6;issue=1.

[12] Department of Water Resources (DWR). 2015. Water Transfers and the Delta Plan: A Report to the Delta Stewardship Council September 16, 2015.

Council staff reviewed the information provided by Dr. Herbold illustrating the correlation between the abundance of many estuarine fish species and the low salinity zone. When net Delta outflows decrease, as they would naturally do in drier years, the low salinity zone would shift upstream, as would the distribution of estuarine juvenile fish. This effect could have two implications: 1) it would shift the low salinity zone upstream from the Suisun/Honker Bay area to the Sacramento/San Joaquin River confluence where there is physically less aquatic habitat available, and 2) would increase the risk of fish entrainment to the south Delta export facilities.

Staff, however, was unable to locate scientific information supporting Dr. Herbold's contention that water transfers that occur in the July through September months, as specified in the biological opinions, contribute to shifting the salinity zone or increase the risk of entrainment. To the contrary, the shifting of the low salinity zone can be attributed to severity of the current drought and to the extremely low Delta inflows that occurred in 2014, as noted earlier, rather than to one-year water transfers[13]. For comparison, 2014 has been classified a critical dry year and that year Delta inflows represented 49 percent of the average Delta annual inflow since 2000. Even in these dry years, exports that rely on one-year water transfers did not comprise a significant portion of Delta inflows or outflows, as noted above.

The only other critically dry year in the Sacramento Valley in the past 20 years was 2008. Delta inflows in 2014 were only 65 percent of the 2008 Delta inflows. 2015 is anticipated to be an ever more critically dry year than 2014. Even under these challenging conditions, DWR and Reclamation must operate the SWP and CVP, which includes exporting water transfers, consistent with the biological opinions that protect native Delta fish. These operational regulatory constraints are in place to ensure against unreasonable impacts to the Delta ecosystem and fisheries.

Another way single-year water transfers could affect the Delta ecosystem, the PPIC report notes, is through groundwater substitution transfers. These occur when groundwater is used to replace the transferred surface water, which may result in adverse impacts to Sacramento Valley aquifers that influence the Delta ecosystem.

Sandi Matsumoto of The Nature Conservancy (TNC) testified that terrestrial species including migratory birds and giant garter snake use managed wetlands and certain crops found in the Sacramento Valley for habitat. Single-year water transfers that result in changes to agricultural practices or land fallowing in the originating areas could have adverse impacts on these species. She also testified that pumping groundwater to replace transferred surface water is adversely affecting aquifers in the Sacramento Valley. Ms. Matsumoto also provided a draft of TNC's report, *Groundwater and Stream Interaction in California's Central Valley: Insights for Sustainable Groundwater*

[13] California Department of Water Resources. Dayflow Data Through Water Year 2014. Available from http://www.water.ca.gov/dayflow/output/Output.cfm (accessed 1 September 2015).

Management[14]*,* which is a model-driven examination of the extent to which groundwater extractions might affect surface flows. The report models the relationship and interaction between California's groundwater and surface water systems, including the long-term impacts groundwater pumping has on the local rivers and streams that are connected to the groundwater basin.

TNC's report presents modeling results that illustrate how increased groundwater pumping in the Sacramento Valley, can deplete flows in local rivers and streams by approximately 0.7 MAF annually. This streamflow depletion is a result of interconnected groundwater basins contributing less water to local rivers and streams, or even in some cases, surface water being lost to the depleted groundwater basins. However, single-year water transfers are an insignificant contributor to this groundwater depletion. Per the report provided by DWR, groundwater substitution transfers represented only 0.06 MAF (2.7 percent) of the 2.2 MAF of the groundwater that was pumped in the Sacramento Valley in 2014.

The Lead Scientist for the Delta Stewardship Council, Dr. Cliff Dahm, reviewed TNC's draft report and observes that the issue of groundwater extraction and its impacts on surface water flows is highly contentious nationwide. Multiple groundwater models are usually employed to discern the impacts of groundwater extraction on surface water flows within a region. The reliance on a single model to determine the extent of interactions between ground waters and surface waters in a basin is not commonly employed. Rather, an ensemble of models is used to examine the extent of the impact. Based on the results of the TNC modeling, Dr. Dahm concludes that the current impacts of groundwater substitution transfers on streamflow depletion and Delta inflow in the Sacramento River Basin is small compared to the millions to tens of millions of acre feet of water that pass through the Sacramento River annually. Dr. Dahm cautions that groundwater extraction substituting for surface water use has the potential to become a problem in the basin, but the data suggests that the volume of this activity does not appear to be problematic at this time. Dr. Dahm also suggests that the recently enacted Sustainable Groundwater Management Act will help to address the complex issue of the interactions between surface waters and ground water throughout the Central Valley that is needed to make regulatory decisions.

Based on this analysis, and because of the extensive checks and balances to protect the Delta's environment and other water users provided the existing review processes for one year water transfers, the staff concludes that one-year water transfers do not significantly affect the goal of protecting, restoring, and enhancing the Delta ecosystem.

B. Impacts to the Goal of Providing a More Reliable Water Supply for California

The Delta Plan provides:

[14] The Nature Conservancy (TNC), 2014. Groundwater and Stream Interaction in California's Central Valley: Insights for Sustainable Groundwater Management. June.

> "Achieving the coequal goal of providing a more reliable water supply for California" means all of the following:
>
> *(A) Better matching the state's demands for reasonable and beneficial uses of water to the available water supply. This will be done by promoting, improving, investing in, and implementing projects and programs that improve the resiliency of the state's water systems, increase water efficiency and conservation, increase water recycling and use of advanced water technologies, improve groundwater management, expand storage, and improve Delta conveyance and operations. The evaluation of progress toward improving reliability will take into account the inherent variability in water demands and supplies across California;*
>
> *(B) Regions that use water from the Delta watershed will reduce their reliance on this water for reasonable and beneficial uses, and improve regional self-reliance, consistent with existing water rights and the State's area-of-origin statutes and Reasonable Use and Public Trust Doctrines. This will be done by improving, investing in, and implementing local and regional projects and programs that increase water conservation and efficiency, increase water recycling and use of advanced water technologies, expand storage, improve groundwater management, and enhance regional coordination of local and regional water supply development efforts; and*
>
> *(C) Water exported from the Delta will more closely match water supplies available to be exported, based on water year type and consistent with the coequal goal of protecting, restoring, and enhancing the Delta ecosystem. This will be done by improving conveyance in the Delta and expanding groundwater and surface storage both north and south of the Delta to optimize diversions in wet years when more water is available and conflicts with the ecosystem are less likely, and limit diversions in dry years when conflicts with the ecosystem are more likely. Delta water that is stored in wet years will be available for water users during dry years, when the limited amount of available water must remain in the Delta, making water deliveries more predictable and reliable. In addition, these improvements will decrease the vulnerability of Delta water supplies to disruption by natural disasters, such as, earthquakes, floods, and levee failures.*

The single-year water transfers that are conveyed through the Delta and exported through the CVP and SWP predominantly originate as surface water in the Sacramento Valley. Surface water can be made available by idling crops or shifting to a less water intensive crop such that saved surface water stored behind a reservoir can be made available for transfer. Transferring groundwater from the Sacramento basin to other regions is prohibited by the Water Code, except under prescribed circumstances. In some cases, groundwater is pumped to irrigate crops so that a portion of the surface water normally used to irrigate the crops can be transferred.

Single-year water transfers are widely recognized as effective tools for water managers to move water to where it is needed most during droughts or other times of unexpected

water supply shortages. In describing the benefits of water transfers operating under an efficient market institution, the Public Policy Institute of California states: "The market provides incentives for water-rights-holders with more ample supplies and relatively lower-value uses to transfer some water to parties with less ample supplies and higher-value uses. The prices negotiated for these transfers provide useful information to all parties about the economic value of water, creating incentives to conserve water, to invest in local infrastructure to reduce conveyance losses from evaporation and leakage, and to coordinate infrastructure uses statewide. In this way, the market helps California's overall water use become more economically efficient."[15] Other recent reviews offer similar support for transfers as a tool encouraging more efficient water use[16]

Almost all the water transferred through the Delta is managed either by DWR or Reclamation, whose pumps divert the water for use by urban and agricultural water users south and west of the Delta. As reported earlier, DWR and Reclamation exported 0.22 MAF of single-year water transfers in 2014, about 10 percent of the combined 2.1 MAF of water diverted through the south Delta pumps by DWR and Reclamation in 2014. The average of 72,332 acre-feet per year exported by DWR or Reclamation during the 2008-2014 period provided about 1.3 percent of the 5.2 MAF average annual exports during those years.

Other Delta-area water agencies sometimes participate in their own single-year water transfers that do not require the water to be exported by DWR or Reclamation. In 2014, East Bay Municipal Utility District participated in a single-year water transfer and diverted an additional 5,000 acre-feet, or about 2.0 percent of its normal annual demand, through its facilities on the Sacramento River in Freeport. In 2015, the SWRCB has identified approximately 22,000 acre-feet of water representing proposed single-year water transfers to be conveyed through the Delta but not exported by DWR or Reclamation. It is unclear, however, how much of that water was actually transferred due to the water right curtailments that were in place during the 2015 transfer window. As with the transfers exported through the CVP and SWP, these other transfers represent a very small amount of overall Delta water use.

The Bureau of Reclamation exports water from the Delta primarily to the San Joaquin River hydrologic region. SLDMWA represents 29 member water agencies in the region, 10 of which may rely on single-year water transfers to supplement their CVP water supplies. These agencies do not have sufficient local supplies of water to meet their needs, even in normal and wet years, and rely on the CVP to import water supplies from other regions, including the Delta. The Council heard testimony from SLDMWA's Francis Mizuno describing the hardship that some of the member agencies face when

---

[15] Hanak, E., Stryjewski, E. 2012. *California's Water Market, By the Numbers: Update 2012*. Public Policy Institute of California.
[16] Culp, Peter W, Robert Glennon, and Gary Libecap. 2014. *Shopping for Water: How the Market Can Mitigate Water Shortages in the American West*. Stanford Woods Institute for the Environment Discussion Paper.

their CVP water allocations were reduced to 0 percent for the second straight year. She reported that without the flexibility that single-year water transfers provide the areas served by some of these agencies could experience additional severe economic hardships, in addition to those already being caused by the extended drought. This testimony and other reports confirm that single-year water transfers provide significant water supply benefits to those water suppliers who receive the transferred water.

The benefits of these same single-year transfers from the statewide perspective, or even from a regional perspective, are less significant. Of the 0.22 MAF of single-year water transfers exported out of the Delta in 2014, 0.11 MAF were exported to the San Joaquin River hydrologic region and the remainder went to State Water Contractors in other regions. The 0.11 MAF represent approximately one percent of the San Joaquin River hydrologic region's entire water supply portfolio. When comparing the total amount of 2014 single-year water transfers that were conveyed through the Delta (including EBMUD's 5,000 acre-feet) to California's overall water supply portfolio, the 0.22 MAF of single-year water transfers represents 0.3 percent of California's total average annual water supply of 81.5 MAF[17].

Because single-year water transfers currently comprise such a small portion of the water exported from the Delta and of the water supply for regions that depend on water supplies from the Delta, the staff concludes that they do not have a significant impact on California's overall water supply reliability.

Relatively little scientific information about transfers (particularly the cumulative impacts of transfers) exists. Given what we know, and the relatively small scale at which single-year transfers occur, we reasonably believe that single-year transfers will not have significant impacts on the coequal goals. We have not received compelling and conclusive evidence to the contrary.

C. Potential for Water Transfer Growth

As previously discussed, single-year water transfers conveyed through the Delta for export are limited by the 2008 and 2009 biological opinions, as well as by operational capacity limitations of the export pumps during the water transfer window. Some stakeholders worry that should new Delta conveyance infrastructure, such as the California WaterFix, be successfully completed, operational limitations of the CVP and SWP will be reduced, easing the water transfer window contained in the biological opinions. These changes could allow for more through-Delta single-year water transfers with the potential for increased impacts to terrestrial wildlife upstream of the Delta.

---

[17] DWR (California Department of Water Resources). 2014. California Water Plan Update 2013. Sacramento, CA. http://www.waterplan.water.ca.gov/docs/cwpu2013/Final/04_Vol1_Ch03_Ca_Water_Today.pdf.

The *Bay Delta Conservation Plan Public Review Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement* (RDEIR/SDEIS) forecasts an increase in demand for through Delta water transfers through 2060[18]. The increase, both in volume and magnitude of single-year transfers, reflects changes in demand for water and a reduction in the amount of water available for export from the Delta due to climate change and sea level rise. These increases reflect the existing Delta conveyance infrastructure and do not account for potential improvements to through Delta conveyance, such as WaterFix. In fact, the RDEIR/DSEIS concludes that should WaterFix be constructed, it will decrease some of the demand for single-year water transfers. WaterFix will address some of the challenges that are limiting the amount of water that is being exported, and will result in an increase in the average annual amount of exports as well as an increase in the reliability of those exports. The increased water deliveries will help mitigate the demand for single-year water transfers, the RDEIR/RDEIS concludes.

The anticipated increase in demand for single-year water transfers and the potential for changes in the regulations governing single-year transfers illustrate the need for the continued attention by the Council to the impacts of single-year water transfers. The Council can only regulate activities whose impacts are measurable or reasonably foreseeable. It would be premature for the Council to adopt regulations now on the assumption that conveyance improvements that are not yet approved may lead to changed conditions when the project begins operating a decade or more in the future. In the near term single-year water transfers will continue to have a less than significant impact on the coequal goals of statewide water supply reliability and the protection, restoration, and enhancement of the Delta ecosystem. If in the coming decades the single-year water transfer landscape changes, the Council should reevaluate the impacts of single-year water transfers on the coequal goals. The Council should receive regular reports from staff or from DWR and SWRCB to maintain its awareness of potential impacts.

Possible Courses of Action on Delta Plan Regulations

Staff suggest that there are two possible courses of action for the Council to consider. At this point, staff recommend Option 1, with the understanding that no final recommendation will be proposed to the Council, and no final action will be taken by the Council until environmental review is complete.

1. ***Option 1: Exempt single-year water transfers from regulation as a covered action*** – This would require the finding that single-year water transfers do not have a significant impact on the coequal goals of statewide water supply reliability and the protection, restoration, and enhancement of the Delta

[18] California Department of Water Resources, U.S. Bureau of Reclamation. Section 4.3 Impacts of Alternative 4A. *Bay Delta Conservation Plan Public Review Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement*. 2015.

ecosystem. As such, single-year water transfers would not meet the definition of a covered action and exemption would provide clarity and certainty for water suppliers.

As a result of this action, single-year water transfers would not meet the definition of a covered action and water suppliers who receive water as a result of any single-year water transfer that originates in, travels through or terminates in the Delta would not have to certify consistency with the Delta Plan. This action will require amending the Delta Plan and its implementing regulations (which provide for an exemption from certification of one year water transfers, but only until December 31, 2016).

Arguments in Support of Option 1

- Staff has not identified evidence that supports the finding that single-year water transfers have "significant impacts" to either of the coequal goals of statewide water supply reliability and the protection, restoration, and enhancement of the Delta ecosystem.
- Allows the Council to find that there are adequate checks and balances in place to protect the ecosystem and all other legal water users
- Provides clarity for the potentially regulated community that single-year water transfers are not covered actions.
- The Council can continue to track the subject of single-year water transfers and revisit the determination as needed.

2. ***Option 2: Take no action and allow the exemption to expire*** – The Council may determine that the information presented by staff is inconclusive, and that single-year water transfers may significantly impact on the coequal goals of statewide water supply reliability and the protection, restoration, and enhancement of the Delta ecosystem.

   As a result of this course of action, water suppliers who receive water as a result of any water transfer that originates in, transfers through or terminates in the Delta will have to determine if the water transfer meets the definition of a covered action. If the water supplier finds that the water transfer does meet the definition of a covered action, a certification of consistency with the Delta Plan will have to be submitted to the Council and be subject to the processes defined in Water Code section 85225 et seq. This action will not require the amendment of any Delta Plan regulation.

Argument in Support of Option 2

- Water suppliers will make the determination on a case-by-case basis whether single-year water transfers have a significant impact on the coequal goals. If water suppliers determine that a proposed single-year water transfer will not have a significant impact, they will not be required to submit a certification of

consistency with the Council demonstrating consistency with the Delta Plan. Neither the Council nor its staff would play a role in local agencies' determinations.

Possible Course of Action on Delta Plan Recommendation WR R15

The Council should also consider updating Delta Plan Recommendation WR R15 to reflect the improvements DWR and SWRCB have made in reducing procedural and administrative impediments to water transfers; and to reflect that DWR and SWRCB have provided the Council with recommendations to address recurring single-year transfers. The recommendation currently reads:

> **Improve Water Transfer Procedures (WR R15) –** The California Department of Water Resources and the State Water Resources Control Board should work with stakeholders to identify and recommend measures to reduce procedural and administrative impediments to water transfers and protect water rights and environmental resources by December 31, 2016. These recommendations should include measures to address potential issues with recurring transfers of up to 1 year in duration and improved public notification for proposed water transfers.

An updated recommendation could encourage the agencies to complete an agreement about the procedures for reviewing one year water transfers that they have instituted since the Delta Plan's approval.

Staff Recommended Actions

The Council directs staff to do the following:

1. Return with draft findings, based on this report's staff analysis, to support the draft regulatory and recommendation language below, while reserving the right to revisit, based on emerging science and new information that may become available in the future, the determination that single-year transfers do not have a significant impact on the co-equal goals:

    a. Proposed draft regulatory amendment to California Code of Regulations, Title 23, Section 5001, subdivision (dd):

    (dd) "Significant impact" for the purpose of determining whether a project meets the definition of a "covered action" under section 5001(j)(1)(D) means a substantial positive or negative impact on the achievement of one or both of the coequal goals or the implementation of a government-sponsored flood control program to reduce risks to people, property, and State interests in the Delta, that is directly or indirectly caused by a project on its own or when the project's incremental effect is considered together with the impacts of other

closely related past, present, or reasonably foreseeable future projects. The following categories of projects will not have a significant impact for this purpose:

(1) "Ministerial" projects exempted from CEQA, pursuant to Public Resources Code section 21080(b)(1);

(2) "Emergency" projects exempted from CEQA, pursuant to Public Resources Code section 21080(b)(2) through (4);

(3) Temporary water transfers of up to one year in duration. ~~This provision shall remain in effect only through December 31, 2016, and as of January 1, 2017, is repealed, unless the Council acts to extend the provision prior to that date. The Council contemplates that any extension would be based upon the California Department of Water Resources' 10 and the State Water Resources Control Board's participation with stakeholders to identify and recommend measures to reduce procedural and administrative impediments to water transfers and protect water rights and environmental resources by December 31, 2016. These recommendations should include measures to address potential issues with recurring transfers of up to 1 year in duration and improved public notification for proposed water transfers.~~;

(4) Other projects exempted from CEQA, unless there are unusual circumstances indicating a reasonable possibility that the project will have a significant impact under Water Code section 85057.5(a)(4), as further defined by this section. Examples of unusual circumstances could arise in connection with, among other things:

(A) Local government general plan amendments for the purpose of achieving consistency with the Delta Protection Commission's Land Use and Resource Management Plan; and

(B) Small-scale habitat restoration projects, as referred to in CEQA Guidelines, section 15333 of Title 14 of the California Code of Regulations, proposed in important restoration areas, but which are inconsistent with the Delta Plan's policy related to appropriate habitat restoration for a given land elevation (section 5006 of this Chapter).

b. Proposed draft amendment to Delta Plan Recommendation WR R15 as follows:

<u>(new) WR R15. Enhanced Interagency Cooperation, Review and Reporting of Cross-Delta Water Transfers.</u> DWR and the SWRCB, in coordination with the DFW, should memorialize in writing by December 31, 2016, procedures that build upon, and

make routine, the drought-related, enhanced level of interagency cooperation and review of proposed cross-Delta water transfers. The procedures should promote increased efficiency and flexibility, while ensuring the following: (1) the protection of water rights and environmental resources; and (2) transparency and accountability, including sharing of relevant information and standardizing public reporting on cross-Delta water transfers.

b. The Council's adoption of draft findings and amendments in December would then trigger staff to do the following:

   a. Prepare an Initial Study to analyze if amending the Delta Plan regulation will require the preparation of a Delta Plan Supplemental EIR under CEQA.
   b. Return to the Council, at the completion of environmental review, with final proposed recommended actions.
   c. If the Council adopts regulatory language after completion of environmental review, staff will prepare and submit to the Office of Administrative Law, a Notice of Proposed Rulemaking to commence the state rulemaking process pursuant to the Administrative Procedure Act (APA) for the amended Delta Plan regulation, including the 45-day public comment period required by the APA and a subsequent public hearing on the proposed regulations.
   d. Provide periodic updates to the Council on single-year water transfers. The Council should be updated on any changes to the water transfer setting such as: any changes in the water transfer regulatory setting; any changes in the amount, frequency or timing of single-year water transfers; any relevant new information pertaining to the impacts of single-year water transfers on the Delta ecosystem or Delta inflows; or other changes staff find relevant to the determination that single-year water transfers do not have a significant impact on the coequal goals of statewide water supply reliability and the protection, restoration, and enhancement of the Delta ecosystem.

Contact

Kevan Samsam Phone: (916) 445-5011
Supervising Engineer