



The Role of Water Transfers in Meeting California's Water Needs

Introduction

The Department of Water Resources projects significant future-year water shortages in the state, unless actions are taken to increase supplies, reduce demand, or manage the use of water resources better. Water transfers—from one party with extra water to another party with temporary or ongoing needs—are one potential “management” tool to address water needs.

Issues

A number of issues should be addressed if water transfers are to meet their maximum potential in helping the state meet its water needs. Specifically, current water transfer law lacks clarity and consistency and provides inadequate protection to third parties (such as the environment and local economies) potentially negatively affected by transfers. Uncertainty about the impact of transfers on water rights impedes transfers. There are also constraints on the capacity of the water infrastructure to accommodate transfers and there are higher-than-necessary transaction costs to execute transfers. Finally, there is a lack of current data about transfers taking place and their impacts.

LAO Recommendations

To address the above problems, we recommend that the Legislature:

- ❖ Consolidate water transfer law into a single act, with a consolidated set of criteria consistent with clearly stated goals.
- ❖ Establish a water transfer information office in the State Water Resources Control Board to coordinate agency review functions, establish baseline data on transfers, assist in the evaluation and mitigation of adverse transfer impacts, and provide forecasts of available capacity in conveyance facilities for transfers.
- ❖ Expand public disclosure of certain proposed transfers.
- ❖ Strengthen the statutory protection of water rights when a transfer takes place.
- ❖ Clarify the statutory definition of “fair compensation” to be paid to use a public conveyance facility for a transfer.
- ❖ Establish in law criteria for transfers that provide more consistent and comprehensive third-party protection, and authorize assessment of a water transfer fee to ensure appropriate state agency review of transfer impacts.



INTRODUCTION

Transfers of water, from one party with extra water to another party with temporary or ongoing water needs, are not new in California. However, in light of projected future water shortfalls state-wide, water transfers are increasingly in the spotlight as a potential “water management” tool to address water needs.

If water transfers are to live up to their potential for helping the state meet its water needs, a number of issues will need to be addressed. Some of these issues are found in water transfer law, which lacks clarity and consistency. Proponents of water transfers, for example, are particularly concerned about the uncertain impact of transfers on underlying water rights. Another issue concerns the potential injury to “third parties”—for example, the local economy or other water users—from water transfers. Some observers believe that

current law and administrative practice do not adequately protect third parties.

In this report, we first discuss California’s water supply and demand picture and the purpose of water transfers. We then give a brief history of water transfers in the state and provide an overview of the role of federal, state, and local agencies in reviewing and approving transfers. Next, we review problems expressed by “stakeholders” about water transfer law and practice in California, including a discussion of impediments to transfers. Finally, we recommend a number of actions the Legislature can take to address these concerns. The most fundamental of these recommendations is for the Legislature to adopt a clear and consistent statutory policy on water transfers that serves to facilitate transfers based on legislatively established criteria.

CALIFORNIA’S WATER SUPPLIES AND DEMANDS

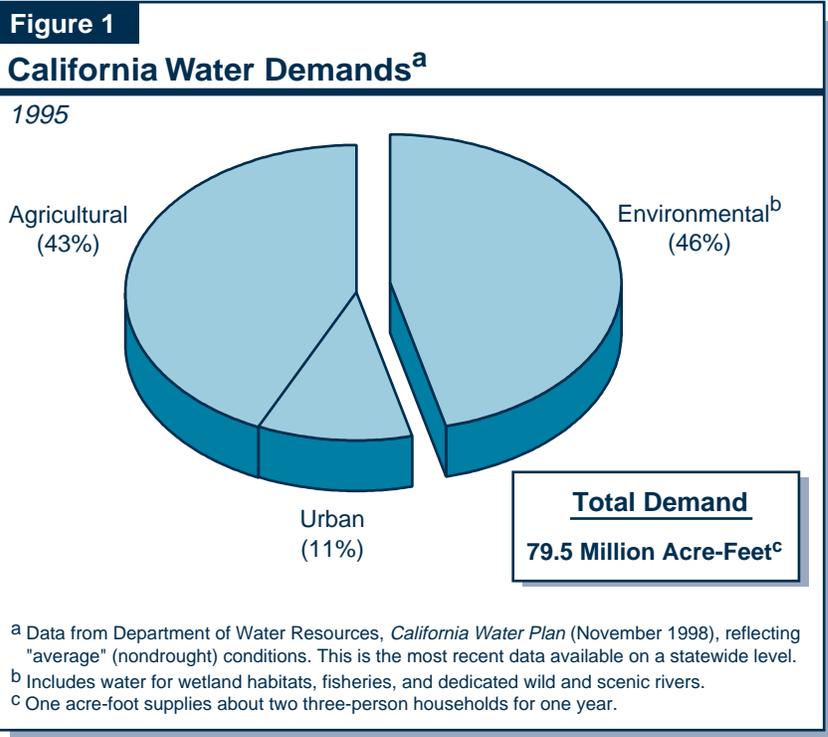
Various Demands on State’s Water Supplies.

As shown in Figure 1, urban development, agriculture, and environmental needs (such as wetland habitats, fisheries, and dedicated wild and scenic rivers) all place demands on California’s water supplies. The state’s water supply is “developed” (dammed, diverted, stored, channeled, etc. for a planned use) by federal, state, and local entities. Local surface and groundwater projects are the single largest water sources, with the federal

Central Valley Project (CVP), the State Water Project (SWP), and the Colorado River (managed by the federal government) providing most of the balance. Figure 2 (see page 4) shows the state’s current sources of developed water supplies.

Projected Water Shortfalls. In past years, the average annual water supply has generally been sufficient to meet demands. However, the Department of Water Resources (DWR) projects that, by 2020, demands will exceed supplies by 2.4 million

acre-feet (maf) in normal rainfall years and by 6.2 maf in drought years, absent further actions to increase water supplies and/or reduce demand. (One acre-foot of water supplies about two three-person households for one year.) To put this shortfall in perspective, total urban water use in the state is about 8.8 maf. Most of the growth in demand will come from the urban sector, where demand is projected to increase by more than 35 percent between 1995 and 2020.



PURPOSE OF WATER TRANSFERS

Options to Address Shortfalls Include Water Transfers. There are many options available to address the projected water shortfalls. These include both infrastructure projects (such as storage facilities and water reclamation plants) and water management strategies (such as conservation practices) that relate to how water is used by and among water users. Gaining increasing attention in the latter category are water transfers. Water transfers allow water to be reallocated from users who place a lower value on the water (as indicated by their willingness to sell the water) to users placing a higher value on it. Therefore, in economic terms, water transfers facilitate a more

“efficient” allocation of water than would otherwise be the case.

Definition of Water Transfers. Water transfers refer to the permanent sale or the short or long-term lease of part or all of a right to use or be supplied water. Most transfers involve a transfer of the water, not the underlying right. As discussed below, water rights take many forms. For example, the right may be a water right permit issued by the State Water Resources Control Board (SWRCB). Or, the right may be a contractual right to be supplied water from a water supplier (such as the SWP or a water district) which itself holds the water right permit. Also, there are many ways in



which water is made available for a transfer. Figure 3 provides an example of a current water transfer proposal that is multidimensional. Specifically, this proposal involves a public/private partnership, the storage and transport of surface and groundwater, and a plan to monitor the impacts of the transfer on groundwater resources.

Water transfers in and of themselves do not generate new sources of water. Rather, water transfers are a mechanism to *reallocate* water among water users, thereby making water more widely available for use on a statewide basis.

Water Transfers Can Serve Supply and Other Purposes. Water transfers can serve a number of purposes. Transfers can be used both to address temporary needs of water users during drought conditions and to augment existing water supplies of certain water users to meet their additional water needs. Thus, from the transferee's standpoint, water transfers help improve the reliability of water supplies. From the transferor's perspective, water transfers provide an opportunity for a financial return. This financial return can be invested in a number of ways. Some of these ways could make more water available for other uses if, for example, the revenues from the transfer are reinvested in improvements that conserve water.

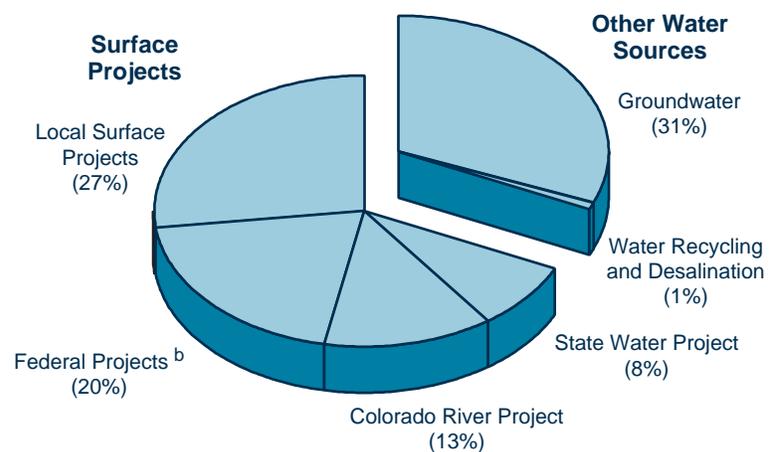
Water transfers can also enhance environmental protection. Transfers can do this directly when water is transferred specifically for an environmental purpose, such as to augment instream flows. Transfers may also improve the environment indirectly. For example, to the extent that transfers lessen the need for additional dams, reservoirs, pumping facilities, and other water supply infrastructure that can potentially damage the environment, environmental protection benefits may result.

However, without adequate safeguards, water transfers have the potential to injure other water users, local economies, and the environment. We discuss this issue later, and make a number of recommendations designed to provide the neces-

Figure 2

Major Sources of Developed Water^a

1995



^a Excludes (1) water flows for environmental purposes, such as undeveloped supplies designated for wild and scenic rivers, and (2) the portion of water demands met by the "reapplication" of surface and groundwater supplies. This is the most recent data available on a statewide level.

^b Mainly the Central Valley Project.

sary safeguards to protect parties potentially negatively impacted by transfers.

Sources of Water for Transfers. There are various ways in which water can be made available for purposes of a transfer. These ways have included:

- ◆ Land fallowing and crop shifts to less water-intensive crops.
- ◆ Water recycling, such as recycling water from wastewater treatment plants for industrial and irrigation purposes.
- ◆ Groundwater pumping instead of using surface water rights, thereby freeing up surface water for transfer.

Figure 3

A Water Transfer Proposal

A Private/Public Partnership of Cadiz Land Company (Cadiz) and the Metropolitan Water District of Southern California (MWD)

- ✓ Cadiz is a private agricultural land and water development company whose holdings include 27,000 acres in eastern San Bernardino County that overlie an underground aquifer system (a natural groundwater basin). The groundwater basin is a water supply source and can store water imported from other sources.
- ✓ MWD, through its 27 member public agencies, provides about 60 percent of the water used by more than 16 million people in several southern California counties. MWD operates the Colorado River Aqueduct.
- ✓ A proposed 50-year agreement between Cadiz and MWD (currently undergoing environmental review) is designed to improve water supply reliability to MWD, given increasing water demands and uncertainty about the year-by-year availability of Colorado River supplies. The agreement provides that:
 - During wet years or periods of excess supply, MWD will store surplus water from its Colorado River Aqueduct in Cadiz's underground aquifer system. MWD will pay Cadiz a transport and storage fee.
 - During dry years or periods where MWD's Colorado River water supplies are reduced, Cadiz will extract and deliver previously stored water and sell (transfer) additional groundwater from the underground aquifer to MWD. MWD will pay Cadiz a fee for the transport of the stored water back to MWD's aqueduct and will pay for the purchased (transferred) water at a base rate.
 - Over the 50-year term, MWD will store a minimum of 500,000 acre-feet of Colorado River Aqueduct water in Cadiz's underground aquifer and will purchase a minimum of 1.1 million acre-feet of groundwater in dry years from Cadiz.
 - The cost of the program's facilities—estimated at between \$120 million and \$150 million—will be jointly shared between Cadiz and MWD. These facilities include spreading basins, extraction wells, a conveyance pipeline, and a pumping plant.
 - An independent groundwater monitoring and management plan will be established to ensure long-term protection of the groundwater basin.



- ◆ Storing excess surface water from wet years in underground aquifers to be later pumped when surface supplies are low.
- ◆ Water conservation, in both the agricultural and urban sectors. For example, this includes farmers using water-saving irrigation technologies and homes and businesses using water-efficient landscaping and bathroom fixtures.
- ◆ Withdrawals from surface storage supplies that were not otherwise planned to be made.

While each of the above has been used to make water available for transfer, the ability to transfer water in a particular case may be constrained by a number of factors. These include legal and regulatory constraints, capacity issues (the capacity of the water infrastructure to store and transport water for a transfer), and cost and other market factors. We discuss concerns about impediments to transfers later in this report.

HISTORY OF WATER TRANSFERS

Water Transfers Are Not New. Water transfers in California date back to the Gold Rush. A 1859 California Supreme Court decision found that water rights can be transferred like any other property. Interest in water transfers grew particularly in the 1970s and 1980s, when various studies recommended water transfers as an alternative strategy to building new facilities to meet increasing demand. Various legislation enacted in the 1980s provided that it is the policy of the state to facilitate voluntary water transfers.

A major example of this statutory policy being implemented is the state Drought Water Bank which was operated by DWR during the final two years of the 1987-1992 drought. During these two years, the bank purchased about 1 million acre-feet of water from willing sellers to meet requests from willing buyers. The water was made available for these transfers mainly by land fallowing,

groundwater substitution (pumping groundwater to free up surface water supplies for transfer), and releasing surplus water from local reservoirs. A majority of purchases were for urban uses.

Few Long-Term Transfers Have Taken Place. Hundreds of thousands of acre-feet of water are transferred annually. Most transfers that have taken place have been of a short-term nature (less than one year) in order to meet a temporary need. Additionally, a majority of transfers take place among parties in the same water basin (for example, among farmers of the same irrigation district) or among contractors of SWP or CVP. Very few long-term transfers across water basins have taken place. In fact, fewer than a couple of dozen of such transfers have been executed over the last 20 years. Figure 4 provides a sampling of some of these long-term transfers.

FEDERAL-STATE-LOCAL REVIEW OF TRANSFERS

Under current law, a water transfer is potentially subject to review and approval by each level of government. We discuss the role of each of the federal, state, and local governments below.

Federal Review. The federal role in water transfers in California relates mainly to transfers of CVP water. While federal law authorizes CVP water users to transfer project water (within and outside the project's service area), a number of conditions must be met to attain the approval of

the Secretary of the Interior for the transfer. For example, transfers must not adversely affect the project's ability to meet its obligations to other water contractors and for fish and wildlife protection.

State Review. Under current law, the state is required to review a transfer mainly under three sets of circumstances:

- ◆ First, if a transfer requires a change (place of use, purpose of use, point of diversion)

Figure 4

Some Long-Term Water Transfer Agreements^a

Date	Buyer	Seller	Amount of Water ^b	Term	Source of Water for Transfer
1967	Metropolitan Water District (MWD)	Coachella Valley Water District (CVWD)	61,000	68 years	Exchange of CVWD's State Water Project (SWP) entitlement for MWD's Colorado River water. (CVWD lacks infrastructure to obtain the SWP water.)
1989	MWD	Imperial Irrigation District (IID)	106,000	35 years	Conservation improvements in IID's distribution system.
1992	MWD	Palo Verde Irrigation District (PVID)	93,000	2 years	Land following by PVID farmers.
1998 ^c	San Diego County Water Authority	IID	Up to 200,000	Up to 75 years	Agricultural conservation (such as irrigation efficiency improvements).

^a Sources: (1) Pacific Institute for Studies in Development, Environment, and Security; *California Water Transfers: An Evaluation of the Economic Framework and A Spatial Analysis of Potential Impacts* (April 1998); and (2) Department of Water Resources, *California Water Plan* (November 1998).

^b In acre-feet, per year.

^c Implementation of agreement is pending resolution of a "wheeling" agreement with MWD for the transport of the water.



in a water right permit issued by SWRCB, then the board must approve the change based on statutory criteria. These criteria relate mainly to a transfer's impacts on other water right holders and the environment.

- ◆ Second, DWR's contracts with the 31 contractors that have entitlements to receive SWP water place conditions on transfers, and approval by DWR is required for such transfers.
- ◆ Third, if SWP is used to convey (transport) the water being transferred, DWR is required to make a number of findings related to the economic and environmental impacts of the transfer before allowing the available capacity in SWP conveyance facilities to be used for the transfer.

Of the thousands of transfers that take place annually, most have not been affected by the circumstances discussed above. Consequently, very few transfers have in fact been subject to state review.

The SWRCB has reviewed on average seven proposed transfers a year over the past several years. This reflects two main facts. First, most transfers take place *within* the terms of an existing water right, meaning that the transfer can be accomplished without a *change* in the water right. (The terms of a water right, such as place of use of the water, can be very broadly defined.) Second, not all water rights which are the basis for a transfer have been acquired pursuant to a permit issued by SWRCB. These nonpermitted water

rights include surface water rights acquired prior to 1914 and groundwater rights (never subject to state permitting). It is important to note that while SWRCB does not have jurisdiction over "pre-1914" rights and in cases strictly involving groundwater rights, state law provides conditions that may apply to proposed transfers involving these rights. Enforcement of these provisions, rather than by SWRCB, is by the courts.

The DWR has reviewed about 25 transfer proposals annually in recent years. This small number reflects DWR's narrow jurisdiction, limited to cases where SWP facilities are being used for the transfer. Figure 5 provides information on the transfers reviewed by DWR in 1998.

Local Review. It is most likely that a transfer, if reviewed, will be reviewed by a local agency. This is because most of the developed water in California is supplied to the end user by about 1,000 local public water supply agencies, as opposed to being developed by the end user itself. Usually these local agencies hold water rights, although sometimes these agencies receive water under contract with a "higher level" supplier (such as the SWP) that holds the rights. Current law generally gives these local agencies the authority to veto transfers initiated by a customer of the agency. Statute largely leaves it to the local agency's discretion as to which user-initiated transfers are approved, although there are some statutory criteria for out-of-district transfers. Local agencies may also review a transfer if groundwater resources are used in, or impacted by, a transfer. Unlike most states, California does not have

Figure 5

Water Transfers Using State Water Project Facilities^a

1998

Type of Transfer	Number of Transfers	Amount of Water Conveyed
For Agricultural Use		
Agriculture to Agriculture	11	99,026 acre-feet
Agriculture/Urban to Agriculture	1	85,700
Urban to Agriculture	1	100
Subtotals	(13)	(184,826)
For Urban Use		
Urban to Urban	4	159,701
Agriculture to Urban	4	2,494
Subtotals	(8)	(162,195)
For Environmental Use		
	2	15,081
Totals	23	362,102 acre-feet

^a Source: Department of Water Resources.

disparate group of local agencies. These agencies include local districts with statutory authority to manage groundwater (such as water conservation districts), local water agencies that have adopted groundwater management plans pursuant to statute, and about 12 cities and counties that have adopted local groundwater ordinances. Local groundwater ordinances are largely designed to protect the local jurisdiction’s water supply and, as such, can operate to

statewide regulation/permitting of groundwater use. Rather, in addition to court-adjudicated groundwater rights in some parts of the state (mainly in urban Southern California), groundwater is regulated on an ad-hoc basis statewide by a

limit groundwater transfers out of the local area.

We now turn to our review of the major issues and concerns that have been raised about the state’s water transfer law and practice, including a discussion of impediments to transfers.

PROBLEMS WITH CALIFORNIA’S WATER TRANSFER LAW AND PRACTICE

For purposes of this report, we surveyed a wide range of stakeholders of water transfers, including urban and agricultural water suppliers and associations, private water right holders, business associations, environmental organizations, and SWRCB, DWR, and CALFED staff. (The CALFED Bay-Delta

Program [housed in DWR] coordinates planning activities of 15 state and federal agencies to improve water management and preserve the ecological health of the Bay-Delta.) Our interviews and literature review revealed a range of problems with the existing “state of affairs” for water trans-



fers in California which are summarized in Figure 6. We also interviewed staff in other states in order to gain insight into water transfer reform efforts taking place in other jurisdictions.

We find general agreement that existing state law on water transfers does not reflect a clear and consistent policy. We also find agreement that the state does not have a comprehensive database of information on transfers that are taking place and on the impact of these transfers. According to stakeholders, the lack of a clear statutory policy and comprehensive database impedes transfers and undermines third-party protection.

Transfer proponents are concerned that there are impediments to transfers. These relate to (1) certainty of water rights, (2) capacity of conveyance facilities to transfer water and the cost to use these facilities, and (3) other transaction costs, such as the costs to attain required public agency approvals. Other parties have concerns about the level of protection afforded “third parties” impacted by transfers (the environment, other water users, the local

economy, etc.), viewing such protection as sporadic and inadequate under current law.

We discuss each of the above problems in further detail below.

LACK OF A CLEAR AND CONSISTENT STATUTORY POLICY

The Problem. Current state law on water transfers is found scattered throughout the Water

Figure 6

Problems With Water Transfers—Law and Practice

- ✓ **Lack of Clear, Consistent Statutory Policy**
 - Lack of clear policy impedes transfers and means the Legislature cannot be assured that its objectives for transfers are being met.
- ✓ **Lack of Information About Transfers and Their Impacts**
 - State collects and discloses little information about transfers; as a result, the potential for water transfers is not fully evaluated.
- ✓ **Uncertain Water Rights**
 - Lack of certainty about amount of water available to transfer under a water right and impact of transfers on water rights impedes transfers.
- ✓ **Infrastructure Constraints**
 - Regulatory constraints on the operation of conveyance facilities (to address environmental water needs) and disputes about pricing of use of public conveyance facilities have impeded transfers.
- ✓ **Transaction Costs Could Be Lower**
 - State is not taking an active role to facilitate transfers by reducing transaction costs.
- ✓ **Inadequate Third-Party Protection**
 - Local support for transfers dependent on protection of third parties (such as local economies) impacted by transfers; many consider third-party protection inadequate under current law.

Code, and does not reflect a clear and consistent policy. There is often not a clear policy basis for the different treatment of transfers under current law. This differing treatment is based on factors such as when water rights were acquired, who is supplying the transferred water, and who owns the conveyance facilities. Many of the statutory provisions were enacted in response to particular problems that arose at specific points in time, such as the 1987-1992 drought. As noted by one legal commentator, water transfer law is neither clear nor consistent as a consequence of this “sequential and situational” enactment of the law.

A primary example of the lack of a consistent policy is found in the law’s inconsistent protection of “third parties” impacted by transfers. For example:

- ◆ Statute protects fish and wildlife from injury from transfers involving a change to a “post-1914” water right, but not a “pre-1914” water right.
- ◆ The economic impacts of a transfer are reviewed in a limited set of circumstances, although such impacts are equally significant in other cases which are not reviewed. For example, DWR is required to make findings about a transfer’s economic impacts when SWP conveyance facilities are being used for a transfer, but the SWRCB is not generally required to evaluate these impacts under its approval process.

- ◆ State law protects against groundwater overdraft resulting from surface water transfers, but only when transfers are done by local water agencies and their members.

Consequences. The consequence of the general lack of clarity is two-fold. First, transfers are likely delayed as additional time is required to understand and comply with the rules, or transfers may not be pursued in order to avoid the risk of a legal challenge. Second, the Legislature cannot be assured that the transfers that do take place are each satisfying criteria which it deems appropriate for transfers generally.

LACK OF INFORMATION ABOUT TRANSFERS

Who Needs Information? There are a variety of parties that have varying information needs about water transfers. These include state and federal policy makers; potential parties to a transfer; and community, environmental, and other interests impacted by transfers. We have found general agreement among stakeholders that more information is needed about transfers taking place and about the impacts of transfers, both generally and in the case of specific transfer proposals.

What Information Is Needed? The state currently lacks information needed to fully evaluate the potential for transfers to address water supply and other water-related issues. This is because there is no “baseline” data on transfers that are currently taking place. This is largely because under current law, most transfers take place without any state review or notice to the state.



Since water transfers relate to other elements of state water policy—such as water storage and conveyance facility development, water conservation, and ecosystem restoration—more complete information on transfers taking place would assist state water policy development.

Additionally, we have found general agreement among stakeholders that better information is needed on the environmental and economic “third-party” impacts of transfers, and on how these impacts can be mitigated. The issue of third-party protection is discussed further below.

CERTAINTY OF WATER RIGHTS

As with any market, a water transfer market requires secure rights in the property being transferred. Both transferors and transferees want to be sure that their rights to the water being transferred are secure. However, from both the transferor and transferee’s perspectives, uncertainty currently exists about water rights in the context of transfers. This uncertainty appears to have limited the number of water transfers, in particular longer-term transfers.

Transferors’ Concerns. Transferors are concerned that their rights are not reduced or lost simply by participating in a transfer. While there are several existing statutory provisions designed to protect water right holders and other water users who transfer water, potential transferors are of the view that the current protection should be made clearer and more comprehensive. In particular, potential transferors want clearer statutory assurances that when the term of a transfer ends,

all rights to use the transferred water return to the transferor without any potential for legal claims by the transferee for the supply to continue. Potential transferors have expressed concern that at the end of the term of a transfer agreement, a transferee might file a legal claim to continue the supply of water because he or she has come to rely on the transferred water.

Transferees’ Concerns. Transferees (and transferors as well) want to be assured of the quantity of water that attaches to a water right and that it is available for transfer. This desire for certainty, however, conflicts with the fact that existing rights to use or be supplied water (whether water rights or contractual entitlements) are subject to reconsideration and revision at any time by state and federal agencies to address environmental water needs. Rights may be revised or reconsidered by actions taken for a variety of environmental purposes, including:

- ◆ To attain water quality standards, for example by SWRCB’s current Bay-Delta water rights hearings.
- ◆ To protect threatened or endangered species, such as the recent federal actions to reduce water exports from the Delta (by limiting pumping) in order to protect the threatened Delta smelt.
- ◆ To protect the “public trust”—the public’s rights to water resources for purposes including navigation, commerce, fishing, and wildlife habitat. A prominent applica-

tion of this doctrine by the SWRCB is the revision of Los Angeles' water rights in order to raise Mono Lake levels to protect fish and wildlife habitat.

CAPACITY OF INFRASTRUCTURE TO ACCOMMODATE TRANSFERS

Water transfers require that there be available capacity in conveyance facilities (such as aqueducts) to move the transferred water. In addition, such transfers may require storage facilities to hold water prior to or after a transfer. However, the capacity of the state's water infrastructure to accommodate transfers is limited not only by its physical size, but also by regulations that affect the operations of the water supply system. For example, the federal government recently limited the amount of water that could be pumped from the Delta over a period of time in order to reduce the number of Delta smelt (a threatened species) that were getting caught in the pumps. This action reduced water exports, and potentially transfers, from the Delta to Southern California.

It appears that up until recently, the water infrastructure has for the most part accommodated proposed transfers. According to DWR, the SWP has been able to accommodate all requests in past years to use SWP facilities to transfer water. However, there is a growing concern that operational constraints resulting from environmental problems (like the Delta smelt issue) will increasingly limit transfers in future years, unless new ways of addressing environmental water needs are developed. In addition, if water transfers are to play an increasingly significant role in meeting the

state's growing water demands, the physical capacity of the existing infrastructure will likely need to be expanded; otherwise transfers will be limited.

To facilitate transfers, current law provides that a state or local agency may not deny a transferor the use of a conveyance facility which has unused capacity if "fair compensation" is paid for that use. (This statute is commonly referred to as the "wheeling statute.") However, uncertainty over the meaning of "fair compensation" has made it difficult to execute some recent major transfer proposals.

Timely and widely disclosed forecasts of available conveyance capacity are also necessary to facilitate transfers. Transfer proponents have stated that more timely and widely disclosed information about SWP capacity, for example, would encourage transfers.

TRANSACTION COSTS

A water transfer potentially results in a number of "transaction" costs. These include the costs to find a willing buyer or seller, to obtain any needed regulatory approvals, and to resolve any challenges to the transfer. There is general agreement that actions can be taken to lower transaction costs for transfers.

State Agencies Not Meeting Requirements to "Facilitate" Transfers. A law enacted in 1986—the Costa-Isenberg Water Transfer Act—requires DWR to establish "an ongoing program to facilitate the voluntary exchange or transfer of water." The program is to consist of a number of components,



including (1) the development of a water transfer guide that reviews water transfer law and includes information and resources necessary to identify and mitigate third-party impacts and (2) the coordination of activities among state agencies to facilitate transfers.

To the extent that these program elements are met, they should contribute to reducing the transaction costs of parties to a transfer. However, we find that some of the program components are not being implemented. For example, DWR has never issued the water transfer guide, although SWRCB is beginning to work on one. Additionally, although DWR established a water transfer office during the operation of the state Drought Water Bank, it no longer has this office. Rather, DWR's current activity with respect to transfers, carried out by staff of its SWP Analysis Office, is mainly to review transfer proposals that use SWP facilities or may impact SWP supplies.

Multiple Agencies May Review a Single Transfer. In some cases, a single transfer may be reviewed by multiple public agencies. For example, a transfer may be reviewed by the SWRCB (because it involves a change in water rights), DWR (because SWP facilities are used in the transfer), and a local water agency (because the agency holds the underlying water right). The U.S. Bureau of Reclamation gets involved when CVP water is transferred.

Transfer proponents have argued that costs could be reduced by better coordination among multiple agencies reviewing a transfer. This could

include the review agencies coordinating their information requests made of parties to a transfer.

THIRD-PARTY PROTECTION

Current Law. Depending on the circumstances of a transfer, it is possible that either no agency, or a single agency, or multiple public agencies may be required to review certain third-party impacts of the transfer. The SWRCB reviews such impacts if a transfer involves a change in post-1914 water rights. The DWR and other public agencies generally review these impacts under specified circumstances when their water systems are being used for a transfer.

Of the various parties potentially impacted by transfers, water right holders other than the parties directly involved in a transfer are granted the most consistent and extensive protection under current law. Specifically, a transfer involving a change in water rights (pre-1914 and post-1914) or a transfer using public conveyance facilities (under specified circumstances) cannot proceed if any injury would result to these third parties.

Fish and wildlife and other instream uses (such as recreation) are afforded some protection against the negative impact of transfers, but only those transfers involving changes to post-1914 water rights if a change in water rights is involved. Furthermore, the protection only extends to "unreasonable" effects from a transfer. Finally, the local economy of the region from which water is transferred is protected in yet a smaller group of cases. This protection is limited mainly to circumstances involving the use of a public conveyance facility under

specified circumstances, and again involves protection only from “unreasonable” impacts.

As mentioned above, DWR has not developed information and resource materials to be used to identify third-party impacts and mitigation alternatives, as required by law enacted over ten years ago.

Examples of Third-Party Impacts. There are various potential impacts of water transfers on interests outside of the parties directly involved in the transfer. These include:

- ◆ Reduced farm-related employment and business income as a result of fallowing transfers.
- ◆ Lower groundwater levels and reduced groundwater quality, and higher pumping costs, for other groundwater users when groundwater is pumped to free up surface water for a transfer.
- ◆ Damage to wetlands and fisheries if flows for downstream uses are reduced as a result of a transfer.

Not all transfers are likely to have significant adverse third-party impacts. Rather, this depends on factors such as the source of water for the transfer, the length of term of the transfer, and the geographic region of the source water for the transfer. For example, a short-term transfer of surplus water from reservoir storage is unlikely to have an adverse impact on the economy of the source region, while a long-term transfer based on land fallowing is more likely to have such an impact. Studies of the impacts of the state

Drought Water Bank operated in the early 1990s found that while third-party impacts overall were minimal (most transfers were short term), third-party impacts were inordinately concentrated in a few counties. In fact, Yolo County filed a claim against the state for what it believed to be significantly increased social services costs due to fallowing-related farm unemployment.

Local Support Crucial for Transfers. Local concerns about third-party impacts have blocked some transfer proposals. For example, DWR's transfer proposal to increase supplies to SWP contractors, developed over a six-year period beginning in 1990, was abandoned due to local concerns. The proposal—called the “Supplemental Water Purchase Program”—would have involved the annual purchase by DWR of up to 400,000 acre-feet of water from locally operated reservoirs in Northern California and from water users substituting groundwater for surface water supplies. The local concerns related to the proposal's impact on groundwater resources, recreation, the environment, and the local economy. There was also concern that the proposal could induce growth in Southern California, potentially putting increased pressure on Northern California water resources to satisfy increased demands in the south.

Problems About Current Law and Practice. The following problems have been expressed by stakeholders about current water transfer law and practice as they relate to third-party impacts:

- ◆ The extent of legal protections provided to third parties varies, and few statutory



requirements exist to identify and evaluate these impacts.

- ◆ Little in-depth analysis of third-party impacts, and of economic impacts in particular, is conducted by state agencies. State agencies have not developed standardized methodologies to evaluate third-party impacts.

- ◆ There is insufficient information on the impacts of actual transfers and on measures that can be taken to mitigate the adverse impacts of transfers.

- ◆ There is inadequate disclosure of information on proposed transfers and their potential impacts on parties potentially impacted by transfers.

ADDRESSING PROBLEMS WITH WATER TRANSFERS

A CLEARER, CONSISTENT STATUTORY POLICY ON WATER TRANSFERS

As discussed above, without a clearer, more consistent statutory policy on water transfers, the Legislature cannot be assured that current law is facilitating the types of transfers that satisfy the conditions which the Legislature considers to be important. Additionally, transfers may be impeded when parties are uncertain as to the characteristics of “allowable” transfers and the legal ramifications of transferring water.

Therefore, we recommend that the Legislature consolidate water transfer law into a single Water Transfer Act that includes clearly stated goals for a statewide water transfer policy. We think that the broad policy goals should include:

- ◆ Encouraging water conservation by both transferors and transferees.
- ◆ Providing certainty of property rights to the use of water.

- ◆ Protecting third parties from significant, adverse economic and environmental impacts of transfers.

This legislation should also include a consolidated set of criteria for transfers, consistent with the broad policy goals, that can be used by state agencies or other entities reviewing transfers. While the statutory criteria for “allowable” transfers may distinguish among different types of transfers and rights, this should only be done where justified on a policy basis. For example, the policy basis under current statute for applying different criteria depending on whether a water right is a pre- or post-1914 right is not clear. Nor is the policy basis clear for applying different criteria depending on whether or not a local agency is transferring water. We think that the following are among the criteria that should apply to *all* transfers that are subject to statutory criteria:

- ◆ Transfers must not cause injury to other legal users of water or unreasonably affect fish, wildlife, or other in-stream beneficial uses.

- ◆ Transfers must not have an unreasonable impact on the overall economy and environment of the region where the transfer originates.
- ◆ Transfers must not cause or increase long-term overdraft of groundwater basins. (Overdraft refers to the situation where, over a period of years, more water is pumped from a groundwater basin than is replaced by rainfall and other sources of water.)
- ◆ Transfers should not serve to discourage transferees from engaging in cost-effective water conservation, recycling, and other practices that result in more “efficient” use of water. In order to do this, the Legislature should consider the option of requiring urban water suppliers receiving transferred water to show that they are implementing an urban water management plan. This is because the implementation of these plans—which must be adopted by these water suppliers every five years—would provide evidence that the water suppliers are employing conservation measures to use existing supplies efficiently.

The broad policy goals and the criteria recommended above do not reflect a major change to current law. Rather, these goals and criteria have their basis in current law, but the application is not consistent. Our recommendation mainly involves making the goals and criteria apply more consistently.

Practical Impact of Recommendation. The practical impact of the above recommendation is not to expand the current jurisdiction of SWRCB, DWR, and other public agencies to encompass transfers not currently reviewed by them. Rather, it would expand the criteria used by these agencies when reviewing proposed transfers. Importantly, the SWRCB would now be required to consider a transfer’s impacts on the economy and environment of the region from which the transfer originates when the board receives an application of a change in water rights. Additionally, all agencies reviewing transfers are given more explicit direction to review impacts on groundwater resources. Finally, changes in pre-1914 rights would now be subject to the same criteria as changes in post-1914 rights.

ADDRESSING INFORMATION NEEDS AND REDUCING TRANSACTION COSTS

As discussed above, various parties—including parties to a transfer, public agencies reviewing transfers, and parties impacted by transfers—have information needs regarding transfers that are not being met adequately. We think that transfers would be facilitated, and that transfers could play a more significant role in the development of state water policy, if these information needs were better addressed.

In addition, transfers would be facilitated by taking actions to reduce the transaction costs for parties to a transfer. These transaction costs could be reduced by the state providing increased assistance to parties to a transfer and by coordi-



nating the activities of multiple agencies involved in reviewing a transfer.

Recommend Creation of Water Transfer Information Office. As discussed above, current law provides for the establishment of an ongoing state program, with specified components, to facilitate voluntary transfers. In order to effectuate this requirement, we recommend that the Legislature establish a water transfer information office. While DWR operated a water transfer office between 1992 and 1995, it no longer has such an office. We think that it would be more appropriate to locate this office in SWRCB, rather than in DWR. This is because the duties of the office could conflict with DWR's role, as a water supply agency, in protecting the interests of its customer base and in meeting its contractual obligations to these customers.

The functions of the new office should be set out in statute to include the current requirements for an ongoing program as well as some additional duties that would help facilitate transfers. These functions should include:

- ◆ Coordinating multiple information requests by public agencies made of parties to a transfer. The office should develop a checklist to guide parties to a transfer regarding these information needs. In addition, the office should issue the water transfer guide required under current law to be developed by DWR.
- ◆ Acquiring technical expertise which can then be provided to transfer proponents
- ◆ Providing forecasts to transfer proponents on available capacity in state conveyance facilities.
- ◆ Collecting information on *all* executed transfers (whether or not state agency approval or a change in water rights is required). This information should be collected for a period of two to three years, and then periodically updated, in order to establish baseline data that can be used in state water policy development. Information collected should briefly describe the transfer, including (1) parties to the transfer, (2) amount of water transferred, (3) term of agreement, (4) source of water for the transfer, (5) any changes in water rights required, and (6) any approvals attained for the transfer (water district, SWRCB, DWR, etc.). To reduce the reporting burden on parties to a transfer, water supply agencies (such as local water districts) could be made responsible for reporting on the transfers initiated by their members or customers.
- ◆ Providing wide public notice, including over the Internet, of proposed transfers

that involve a change in water rights. (This requirement will only affect a small proportion of transfers, since most transfers do not involve a *change* in water rights.) In effect, this would provide the public with notice not only of transfers currently requiring the approval of SWRCB, but also of transfers proposing changes in pre-1914 rights. While the latter category of transfers are not currently under the SWRCB's jurisdiction, they are nonetheless subject to a number of statutory provisions designed to protect third parties impacted by the transfer. Notice of the transfers would first be given to the water transfer information office by parties to a transfer prior to the transfer. In addition to disclosing the six items listed in the preceding paragraph, this notice should include information on likely changes in the quality and quantity of water available to other water users or for other uses.

Expanding Public Notice Requirements. Under current law, notice of proposed transfers is disclosed to the public in the limited cases when a SWRCB hearing is required. We recognize that broader public disclosure of proposed transfers, as recommended above, could be seen as a potential impediment to transfers. However, we think that the notice requirement, combined with the water transfer information office's role in improving the analysis and mitigation of third-party impacts, will in the long run facilitate transfers by reducing

some of the local controversy that has surrounded transfers. Over time, transfers which adequately address local concerns in advance of the transfer, and are therefore less subject to local opposition and potential delays, should become more or less routine. In addition, a "before-the-fact" notice of transfers should reduce delays and save some transaction costs to the extent the notice allows local concerns to be addressed earlier rather than in later challenges and litigation.

To reduce the overall reporting burden and not unduly impede transfers generally, we suggest limiting the public notice requirement to proposed transfers involving a change in water rights. Transfers that take place "within" the terms of a water right—such as between farmers served by the same irrigation district holding the water right—are the most common transfer. Generally, these transfers are less likely to negatively impact third parties than transfers requiring a change in water rights. This is because they are less likely to involve significant changes in the purpose and place of use of water so as to affect other parties to a meaningful extent.

Finally, to make the public notification process manageable and to ensure benefits for parties to a transfer from the process, the Legislature should consider the option of placing a time limit on challenges to a transfer. This would provide greater certainty to parties to a transfer, and reduce transaction costs associated with challenges later in time.



MAKING WATER RIGHTS MORE SECURE

Making Rights Protection Clearer and More Comprehensive. In order to facilitate transfers, transferors must be certain that their water property rights are not jeopardized by transferring water. To address the concerns expressed by potential transferors that the protection afforded them under current law is neither clear nor comprehensive, we recommend the enactment of legislation that consolidates several existing statutory provisions providing protection of water rights into a single provision that:

- ◆ Clearly provides that transfers of water, or negotiations or offers to transfer water, shall not in and of themselves be the basis for a loss or reduction of any right to use water.
- ◆ Assures transferors that when the term of a transfer ends, all rights to use the transferred water return to the transferor without any potential for legal claims by the transferee for the supply to continue.

Senate Bill 970 (Costa), proposed this session, incorporates the above two concepts.

Addressing Environmental Water Needs. As discussed above, existing water rights may be revised, and operational constraints may be placed on the water supply infrastructure, at any time in order to address environmental water needs. This makes the amount of water available for transfer under a water right somewhat uncertain, thereby impeding transfers. In order to reduce some of this uncertainty, the Legislature

might consider some of the mechanisms used in other states to meet environmental water needs. While unlikely to totally replace the need to revise water rights or place operational constraints on the supply system, these mechanisms can serve to reduce the need to use such means to address environmental water needs.

For example, in order to increase in-stream flows to protect fish and wildlife, Oregon changed its water rights laws in 1987 to establish water rights for in-stream uses. Unlike most western states, current California law does not provide water rights for instream uses (fisheries, wildlife habitat, recreation, etc). While current California law authorizes an existing right holder to dedicate a portion of a right for in-stream uses, it is the difficult responsibility of that right holder to track other parties' water use to ensure that the dedicated water is actually used for in-stream purposes. (The SWRCB has received only a couple of requests for such water rights changes since 1991.)

Under the Oregon law, state agencies can establish new water rights for in-stream uses, and existing right holders can voluntarily lease, sell, or donate part or all of their rights for in-stream uses. In exchange, water right holders donating part or all of a right receive a tax credit. A nonprofit organization—the Oregon Water Trust—has been formed to acquire rights for in-stream uses. According to the Oregon Water Trust, the Oregon program has worked well to increase environmental protection, mainly because it is based on the cooperation of willing private landowners and water districts. For example, in 1997, over

500,000 acre-feet of agricultural water was sold or donated by farmers or ranchers under the Oregon program to help protect fish and wildlife.

Since the Oregon Water Trust was established in 1993, other states have followed suit. For example, the Washington Water Trust began operating in 1997, and the Texas Legislature recently approved the Texas Water Trust funded by public funds.

ADDRESSING CAPACITY ISSUES

Forecasts of Available Capacity in Conveyance Facilities. As recommended above, one of the functions of a new water transfer information office should be to provide timely and wide public disclosure of projected available capacity in state conveyance facilities for transfers. The Legislature should also encourage local public agencies to provide similar disclosure of available capacity in their conveyance facilities.

Cost of Using Conveyance Facilities. In order to facilitate transfers, we recommend that the Legislature clarify current statutory provisions that require state and local agencies to make unused capacity in conveyance facilities available for transfers if “fair compensation” is paid for that use. Some transfers have been held up due to disputes over the meaning of fair compensation. A primary issue in these disputes has been the extent to which fair compensation includes recovering costs, such as capital costs, that are in addition to the incremental cost to the facility owner of transporting the transferred water. Senate Bill 506 (Peace), proposed this session, is an attempt to clarify the meaning of fair compensation.

ENHANCING THIRD-PARTY PROTECTION

We think that several of the concerns expressed about the impact of water transfers on third parties are addressed by a number of our recommendations above. First, we recommend the enactment of legislation to establish a clearer, more consistent statutory policy and criteria on water transfers. By doing so, the Legislature can provide more consistent and comprehensive protection to third parties impacted by transfers. Specifically, we recommend that statutory criteria related to the economic impacts of transfers apply to a broader group of transfers than currently and that there be more comprehensive protection of groundwater resources affected by transfers.

Second, our recommendations for the creation of a water transfer information office help to address concerns about the need to better understand the third-party impacts of transfers and potential measures to mitigate the adverse impacts. The new office would also serve to address concerns about inadequate disclosure of information about proposed transfers to parties potentially impacted by them.

Funding for Review of Transfers. We also think that protection of third parties impacted by transfers would be enhanced by ensuring that state agencies have adequate resources for their review of transfers. As mentioned previously, some statutorily required reviews (economic impacts in particular) are not taking place at an in-depth level.



In addition, we think that the costs to review a transfer are properly borne by the parties to a transfer. However, we find that a substantial amount of the state agency review costs, rather than being recovered from parties to a transfer, is either funded from the General Fund (in the case of SWRCB) or subsidized by other fund sources (such as SWP contract revenues in the case of DWR).

Under current law, the SWRCB levies a flat \$100 fee to approve a transfer. (The fee is augmented by potentially up to several thousands of dollars for out-of-basin transfers, based on the amount of water involved.) According to the board, the statutory fee rates do not allow it to recover its costs to review transfers. Typically, its costs to review a transfer have ranged from about \$5,000 for a mid-sized transfer to over \$120,000 for a large transfer. In the case of DWR, there is not explicit statutory authority for it to recover its review costs from parties to a transfer.

To ensure that water transfers subject to review by state agencies receive an appropriate level of review that is fully funded by parties to a transfer,

CONCLUSION

Water transfers are one of many tools available to address projected future water shortfalls. While there have been water transfers for many years, most of these have been for a short term to address temporary water needs. In contrast, there have been few long-term transfers that address ongoing, increasing water needs. This reflects a number of impediments to transfers, including uncertain property rights, regulatory constraints

we recommend the enactment of legislation authorizing the SWRCB and DWR to assess water transfer fees (on transferors and/or transferees) of an amount sufficient to:

- ◆ Recover the costs of SWRCB/DWR to review transfers.
- ◆ Reimburse other state agencies, such as the Department of Fish and Game, for their assistance to SWRCB/DWR in reviewing a transfer.
- ◆ Provide at least partial support for a newly created water transfer information office in SWRCB.

Given the actual costs by state agencies to review past transfers, we do not think that most transfers would be impeded by charging a fee that fully recovers these review costs. The Legislature may want to consider fee exemptions or lower fee rates for certain types of transfers that it considers important. This might include, for example, transfers for environmental purposes.

on the operation of the water supply system, and local opposition to transfers. We also find that the state has not had a program to actively facilitate transfers, apart from the operation of the Drought Water Bank in the early 1990s.

We recommend a number of actions, summarized in Figure 7, that the Legislature should take to remove some of the impediments to transfers

Figure 7

**Addressing Concerns About Water Transfers
Summary of LAO Recommendations**

Recommendations

Statutory Policy on Water Transfers

- Consolidate water transfer law into single act, with a consolidated set of criteria for transfers consistent with clearly stated goals for a water transfer policy. Policy should protect water rights; encourage water conservation; and provide adequate protection against the adverse impacts of transfers on local economies, other water users, groundwater resources, and fish and wildlife resources.

Information Generation and Disclosure About Transfers and Their Impacts

- Establish water transfer information office in State Water Resources Control Board. Office would coordinate the information needs of various agencies reviewing a transfer, develop a technical expertise on the impact of transfers and potential mitigation measures, and collect information on all executed transfers to assist in state water policy development.
- Expand public disclosure of proposed transfers.

Certainty of Water Rights

- Consolidate and clarify statutory protection of water rights when a transfer takes place.
- As an option, consider establishing a process for the voluntary sale or donation of water rights for environmental purposes, as in other states. This could serve as an alternative to the regulatory revision of existing water rights to address environmental water needs.

Capacity Issues

- Establish water transfer information office (see above) to distribute forecasts of available capacity in public conveyance facilities.
- Clarify statutory definition of “fair compensation” to be paid for use of public conveyance facilities.

Transaction Costs

- Establish water transfer information office (see above) with specified duties to facilitate transfers and reduce transaction costs.

Third-Party Protection

- Authorize assessment of water transfer fee to ensure appropriate level of state agency review of transfer impacts.
- Establish statutory criteria for transfers that provide more consistent and comprehensive protection for third parties impacted by transfers.
- Establish water transfer information office (see above) to assist in the evaluation and mitigation of third-party impacts and to enhance disclosure to the public of proposed transfers and their potential impacts.



and provide a more active state role in facilitating transfers. Of these actions, we think that it is fundamentally important for the Legislature to enact legislation that provides a clearer, more consistent statutory policy on water transfers. This is needed both to facilitate transfers and to provide an appropriate level of protection to “third parties” that may be adversely impacted by transfers.

Finally, while the adoption of our recommendations should enhance the potential for water transfers, this potential will be limited by the capacity of the water supply system to store and transport water for transfers. Therefore, a state water transfer policy needs to be developed and implemented in conjunction with a state policy on the development and operation of facilities to transport and store water.

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