

**GAO**

United States General Accounting Office

Report to the Chairman, Subcommittee  
on Water and Power, Committee on  
Energy and Natural Resources, U.S.  
Senate

May 1994

# WATER TRANSFERS

## More Efficient Water Use Possible, If Problems Are Addressed



GAO/RCED-94-35

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## Strategies Vary in Their Effectiveness

The strategies vary in their effectiveness in addressing certain third-party impacts and in the impediments they add to the transfer approval process. Moreover, each transfer situation is unique, and the strategies may effectively address certain impacts in some circumstances, but not in others.

### Strategy 1: Require a Public Interest Review

Before approving water transfers or the appropriation of new water rights, many states currently consider their impact on the public interest through a public interest review. Those transfers determined not to be in the public interest are modified or are not allowed. Typically, proposed transfers are announced through public notice, and concerned parties can submit protests describing their concerns. The concerns may be addressed further at a public hearing. Whether or not a transfer is in the public interest is usually decided by the state engineer or other water resource officials. The states vary in how the public interest is defined and in who is allowed to protest. Economic impacts and impacts on fish and wildlife may or may not be considered.

The federal government already conducts public interest reviews for certain federal actions. For example, the Corps of Engineers conducts a public interest review before approving the permits required under various environmental laws for the discharge and disposal of dredged material into U.S. waters and the ocean. The Corps solicits information from local, state, and other federal agencies, as well as from the general public, and considers many factors during its public interest review, such as compliance with federal laws and impacts on economies, the environment, historic values, fish and wildlife, recreation, and the water supply. To reduce or avoid duplication, the Corps develops joint procedures with local, state, and other federal agencies, and applications may be processed jointly with the state.

### Rating<sup>2</sup>

Most reviewers rated public interest review as good or excellent. However, some stated that its effectiveness depends on whether or not mitigating action will actually be implemented as a result of the review and what the standards for decision-making are. Some noted that it can result in gridlock.

### Addressing Third-Party Impacts

The reviewers generally agreed with GAO's conclusion that a public interest review can address most third-party concerns if all of the concerned

<sup>2</sup>Rating comments include general criticisms of strategies made by reviewers in response to our analysis. They are not necessarily provided as explanations of reviewers' ratings.

parties or their representatives—including government agencies—have an opportunity to become involved in the process and if the definition of the public interest includes the impacts on all parties. Conversely, if certain groups are not given the opportunity to protest or are not included in the definition of public interest, it is likely that the concerns of less powerful groups will not be considered.

However, the reviewers expressed concern about the difficulty of getting all affected third parties represented in the process. Some groups may be overlooked or be less well-funded and prepared than others. Some reviewers indicated that if the definition of the public interest includes consideration of all of the impacts, they may be considered by the reviewing agency, whether or not the affected groups can participate in protests or hearings.

The reviewers qualified their responses on the environmental impacts. Some indicated that the lack of access to reliable data on the environmental impacts, particularly groundwater and surface water impacts, can limit the effectiveness of addressing these impacts. It is technically difficult to determine these impacts, and the necessary data do not always exist.

### Minimizing Impediments

With public interest reviews, the approving water agency often may either approve, deny, or conditionally approve transfers pending changes in terms and conditions to address the third-party impacts identified. If this is the case, then a public interest review does not prohibit certain types of transfers from occurring outright. Transfers with adverse impacts can be approved if the impacts are mitigated through changes in transfer terms and conditions. Transfers can proceed so long as the buyers and sellers value the sale enough to make the changes. If mutually satisfactory changes cannot be found to mitigate harm to the public interest, the transfer can be denied.

Extensive review and consideration of impacts can add impediments to transfers by adding significant costs, delays, and uncertainty to the approval process. The applicants and protesters may need to hire lawyers, engineers, and other experts to determine the impact of the proposed transfers, and the outcome of the review is uncertain. The clearer the definition of the public interest, the less additional cost, delay, and uncertainty.

The reviewers generally agreed with these conclusions, but some noted that some transfer prohibitions and transaction costs resulting from a public interest review may be justified because of the potential impacts. Some reviewers stated that the public interest reviews may not add significant transaction costs, depending on the existing system for transfer approval, and may even reduce overall costs and uncertainty in the long run if costlier fights, such as litigation in the courts, are avoided.

## Strategy 2: Perform a Comprehensive Impact Assessment

An impact assessment involves predicting the likely impacts of proposed transfers to allow the consideration of mitigating alternatives, including the alternative of no transfer at all. For example, NEPA requires federal agencies to complete environmental impact statements for all major federal actions significantly affecting the quality of the human environment. Some states have similar requirements at the state level. Currently, the impacts examined under NEPA are primarily environmental, and studies are completed only for major actions with significant impacts. This requirement does not necessarily include all water transfers. The impact assessment strategy would involve a NEPA-like approach, with a more comprehensive analysis to assess the economic or social impacts as well as the environmental impacts.

## Rating

The reviewers did not agree on a rating for impact assessment—similar numbers rated it poor, fair, or good; a few rated it excellent. Some expressed concern that it is too expensive, complex, labor-intensive, and time-consuming and that no one is accountable for the decision-making process. Some indicated that it is more desirable for large transfers but inappropriate for small transfers, presumably because of the high costs and time involved. Some felt it would be better for environmental impacts than for others, such as social impacts, that are difficult to define, quantify, and evaluate.

## Addressing Third-Party Impacts

The reviewers generally agreed with GAO's conclusions that impact assessments that examine the economic, social, and environmental impacts can consider all community concerns and environmental conditions and can identify alternatives to mitigate the impacts. However, the reviewers indicated that the key issue on effectiveness is how the impact assessment is used and whether it would actually lead to mitigation. The current federal model for impact assessment, NEPA, does not by itself require that any particular action be taken—it requires only that the impact assessment be completed and that impacts that may trigger other environmental laws are identified. The reviewers' comments

indicate that to be effective, the process must have substantive standards for decisionmakers to follow in connection with how the assessment should be used.

### Minimizing Impediments

Comprehensive impact assessments are similar to public interest reviews in their impediments. They do not prohibit certain types of transfers outright; they can identify alternatives that can mitigate the impacts and still allow transfers to occur. However, such assessments can add cost, time, and uncertainty because they are labor-intensive.

### Strategy 3: Compensate the Community

Compensation attempts to improve the condition of the community from which a water rights holder is selling water by providing benefits that offset the losses imposed by the transfer. For example, compensation might include direct payments to local governments to compensate for losses to the local tax base, paying a severance tax on water removed from rural areas to compensate for losses from reduced economic activity, per capita payments, dedication of new parklands, or the establishment of a museum or cultural institute. For purposes of our analysis, we assumed that compensation is paid to the community, not to private parties, and can be negotiated on a case-by-case basis.

### Rating

Most reviewers rated compensation as fair or good. Some expressed concern that many impacts cannot be monetarily compensated and that the effectiveness in addressing some impacts depends on what the local government does with the money. Some felt that some sort of formula or backstop is necessary to determine an appropriate level of compensation. Otherwise, some parties will never be satisfied.

### Addressing Third-Party Impacts

Compensation paid to the local community can be an effective way to address some impacts, if the compensatory funds are dedicated to those impacts and if the concerned parties have the opportunity to be involved in the process. For example, the reviewers generally agreed with GAO's conclusion that compensation can address economic impacts by offsetting the economic losses that can be caused by water transfers. Some reviewers noted, however, that not all economic impacts may be compensated. For example, although short-term economic concerns may be addressed, the long-term impacts on economic development of removing water from the area may not be. In addition, the impacts on individuals may not be compensated if payment is made to the community government.

Similarly, compensation can pay for replanting agricultural fields to avoid adverse changes in soil conditions. However, the reviewers noted that in some cases revegetation is not possible or will not solve all soil problems. Farming can alter the soil to such an extent that native plants can no longer be grown where crops were grown.

The reviewers agreed with GAO's conclusions that many other impacts cannot be mitigated through compensation, including unquantifiable social values, such as lifestyle, and environmental changes in surface and groundwater conditions. However, some reviewers noted that compensation can help address these impacts in some cases. For example, new social services or compensation that provides new jobs or sources of community pride can help mitigate social impacts. Similarly, if compensation is used to purchase replacement water or money is used to mitigate environmental harm, surface and groundwater impacts can be mitigated, in some cases.

#### Minimizing Impediments

Compensation is similar to the previous two strategies in the impediments it can add. It does not prohibit transfers outright—transfers can proceed so long as buyers and sellers value the sales enough to negotiate and pay the compensation and still realize gains. However, compensation increases the cost of a transfer by the monetary value of the compensation and can add delays and uncertainties if it is negotiated after the transfer is proposed.

#### Strategy 4: Rely on Ad Hoc Negotiations Among Affected Parties

Ad hoc negotiation allows the affected parties to discuss their concerns and interests with one another and reach a mutually satisfactory agreement on the terms of the transfer. For example, if environmental impacts can be mitigated by changing the timing of a transfer, the transferrer may agree to modify the transfer. If economic concerns can be addressed through compensation, the parties can agree on appropriate compensation.

#### Rating

Most reviewers rated ad hoc negotiation as poor or fair. A primary concern was whether the parties to the transfer are required to negotiate. The transferring parties must have some incentive to negotiate with the affected groups—whether it be a law requiring it, a more complicated review under a formal process, or the fact that the affected groups have the power to stop the transfer some other way.

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Addressing Third-Party Impacts

Because the negotiations are ad hoc, less powerful groups may be excluded and their concerns may not be considered. Although the negotiations may be effective in addressing the concerns of those parties who are involved, this option alone does not ensure that any particular concern will be addressed or conditions maintained.

The reviewers agreed with GAO's conclusion that many affected parties can be left out of ad hoc negotiations. Some felt that the economic interests are the most likely to be involved in the process, and some indicated that only those parties with the power to stop the transfer in some other way will be considered by transfer applicants in the negotiations. Conversely, a few thought that the informal nature of ad hoc negotiations makes it easier for underfunded groups to participate or that the parties to transfers may understand that all affected groups should be included.

According to the National Academy of Sciences,<sup>3</sup> negotiated resolutions that are not required by water transfer laws produce uneven and incomplete results. Some parties will be treated better than others, and some will be overlooked. Some transfers will entail high public visibility and political interest to empower affected parties, while others will not. Furthermore, the parties with an arguable legal right under some statute and the parties with access to legal mechanisms to delay or increase the costs of a transfer have greater bargaining power in the negotiations.

Minimizing Impediments

Ad hoc negotiations are similar to previous strategies in the impediments they can add to transfer approval. However, the costs, delays, and uncertainty may be less than those incurred through a formal hearing process. Experts are not necessarily required, and compromises can be reached directly among the concerned parties. Some states rely on negotiation as an option to informally resolve some concerns to speed up the formal process before a formal hearing is called.

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Strategy 5: Institute a Right  
of First Refusal

Under this strategy, the water users within a designated area, such as a water district or basin of origin, have first priority in purchasing the water proposed for transfer to a prospective buyer outside of the area, on the same terms and conditions. As a result, a transfer of water to an economically higher-valued use occurs, but the water users within the area or district have the opportunity to purchase the water before others do.

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<sup>3</sup>Water Transfers in the West: Efficiency, Equity, and the Environment, Water Science and Technology Board, National Research Council (Washington, D.C.: National Academy Press, 1992).

A version of this approach was included in the Central Valley Project (CVP) Improvement Act, which allows individuals as well as water districts to transfer CVP water to any other California user. As enacted for the CVP, the right of first refusal must be exercised on the same terms and conditions that were negotiated between the seller and the initial prospective buyer. The new buyer within the area must compensate the initial prospective buyer for the transaction costs associated with the development and negotiations of the transfer, such as hydrologic studies.

Rating

Most reviewers rated right of first refusal as poor or fair. Some felt that it is inadequate alone but is useful in conjunction with other methods.

Addressing Third-Party Impacts

The effectiveness of the right of first refusal depends in part on whether a local buyer within the area can pay the market price being offered outside of the area. If local buyers come forth, the local economy may be protected. If no buyer is available, the water leaves the area and the economy may experience losses. Local buyers will not always be available. In cases of transfers from rural agricultural areas to urban areas, it is unlikely that local users can often meet the market price that urban areas are willing to pay for water. The full value of water in the local community may include nonmarket values, such as social values that cannot be reflected in a market price. Even if the right of first refusal is exercised, this strategy may not address social impacts or maintain environmental conditions, because water will be transferred from one user to another regardless of impacts. For example, water that is transferred from traditional irrigation uses to resort development in the same area may still threaten existing lifestyles.

The reviewers generally agreed with GAO's conclusion that it is unlikely that local buyers could meet the market price, but some noted that a right of first refusal does provide an opportunity for the community to retain the water. It is possible that the water could be purchased by local businesses, by districts, or with government subsidies. Local purchasers may buy the water for social or environmental reasons. Moreover, if the right is exercised, many impacts should be less than if the water left the area.

Minimizing Impediments

This strategy by itself does not prohibit transfers because some transfer—either the initial transfer outside of the area or a transfer within the area—will be allowed to proceed. Compensating the negotiation costs and allowing others to intercede in the transfer increases transaction costs and delays, although some reviewers felt that the increases would not be

**Appendix I  
Strategies for Addressing the Impacts of  
Water Transfers on Third Parties**

great. This strategy creates uncertainty for potential buyers outside of the area—they may expend time, energy, and money to negotiate the transfer, yet another buyer can get the water instead.

**Summary of Strategies 1  
Through 5**

Table I.1 summarizes the conclusions for strategies 1 through 5 on their general effectiveness in addressing the five third-party impacts (indicated by Y or N)<sup>4</sup> and minimizing impediments (indicated by positive and negative aspects). However, the conclusions summarized in table I.1 are general and should not be assumed to hold in all cases. As indicated in the text for each strategy, each transfer situation is unique, and the strategies may effectively address certain impacts in some circumstances, but not in others. Therefore, table I.1 should only be considered with the accompanying text for each strategy.

<sup>4</sup>The conclusions presented in table I.1 were agreed to or agreed to with qualifications by a clear majority of the reviewers (at least three-fifths), although in some cases other reviewers disagreed. Many reviewers qualified their agreements with exceptions and comments. If no clear majority generally agreed or disagreed with our conclusions, we indicated this uncertainty with Y/N.

**Appendix I  
Strategies for Addressing the Impacts of  
Water Transfers on Third Parties**

**Table I.1: How Strategies 1 Through 5 Would Address Third-Party Impacts and Minimize Impediments**

	(1) Public interest review <sup>a</sup>	(2) Comprehensive impact assessment	(3) Compensation to community <sup>a</sup>	(4) Ad hoc negotiations	(5) Right of first refusal
Rating by reviewers (n = 23 reviewers)	Good or Excellent (n = 18)	No consensus	Fair or Good (n = 18)	Poor or Fair (n = 17)	Poor Fair (n = 16)
Policy goal: Addressing third-party impacts					
Economic <sup>b</sup>	Y	Y	Y	N	N
Social <sup>b</sup>	Y	Y	N	N	N
Surface water <sup>c</sup>	Y	N	N	N	N
Groundwater <sup>c</sup>	Y	N	N	N	N
Soil <sup>c</sup>	Y	Y	Y	N	N
Policy goal: Minimizing impediments	Positive: Do not prohibit certain transfers from occurring outright; they allow flexibility in transfer terms and conditions to allow transfers to occur if changes can address identified third-party impacts.				
	Negative: Can add significant transaction costs, time, and uncertainty to the approval process.				

**KEY**

Y(es) - Policy goal is likely to be achieved

N(o) - Policy goal is unlikely to be achieved; the strategy does not address the impact, although incidental benefits may result from the policy.

<sup>a</sup>Y(es) responses are valid only if all interested parties have the opportunity to become involved in the process.

<sup>b</sup>Economic and social concerns are addressed by the strategy if the strategy accounts for the significance of the impact and eliminates or reduces the adverse impacts to acceptable levels.

<sup>c</sup>Surface water, groundwater, and soil conditions are maintained if the strategy ensures that pre-transfer conditions are maintained at existing or better levels. Lower levels can be allowed when they are based on acceptable standards.

**Strategy 6: Rely on Water or Irrigation District Veto Power**

Several types of water and irrigation districts are chartered under state laws to manage water resources. Districts are usually initiated by local vote and governed by elected or appointed boards to serve geographic areas within designated boundaries. The districts were originally organized to provide local control over water delivery and to secure financing for expensive water supply projects. Irrigation districts have characteristics of both public and private entities—they may have taxing and assessment authority, tax-exempt status, and the ability to issue bonds. However, they are controlled by private landowners and operated for the benefit and profit of the members of the district, not for the general public.

Voting varies by state and by type of district. In some cases, only landowners or agricultural landowners within the districts are allowed to vote. Furthermore, while some districts have a one-person/one-vote system, other districts base votes on land acreage, including systems in which each landowner casts one vote for each acre owned. Some states require the district's approval before water is transferred outside of the district's service area. Other water organizations also distribute water to members; however, the Bureau largely contracts with water and irrigation districts.

Under strategy 6, the district veto power strategy, the reviewing agency would rely upon the district's judgment about whether water should be transferred to a purchaser outside of the district.

Rating

Almost all reviewers rated this strategy as fair or poor. Many stressed that districts reflect their own private interests, not broad public interests, and are likely to not consider many third-party impacts. In addition, the reviewers indicated that districts are more likely to veto transfers, because they encroach on district power, than to approve transfers. However, one reviewer indicated that districts do have legitimate concerns and should be able to veto a transfer if it substantially increases the cost or difficulty of continued service to customers.

Addressing Third-Party Impacts

The reviewers disagreed about whether or not economic impacts would be addressed with this strategy. Some agreed that impacts on agricultural communities are likely to be addressed, because it is in the district's interest not to have the local agricultural economy decline. However, the reviewers noted that not all economic impacts will be addressed. The districts will be mostly concerned with their own economic impacts—not with others outside of the district, such as the local community, the state, or the region.

Furthermore, as currently structured, the districts may not represent all interests in the community and may not have the expertise necessary to predict the social or environmental impacts of transfers. Therefore, all social concerns may not be addressed, and the environmental conditions may not be maintained. The reviewers agreed, but some noted that some social concerns will be considered by districts. In addition, if the districts veto transfers, the status quo is maintained and environmental impacts will not occur.

Minimizing Impediments

Districts' veto power can impede transfers. If districts are free to determine their own approval criteria, these criteria can vary. Depending on the criteria chosen, the additional transaction costs and time delays to meet these criteria would vary. If the criteria for transfer approval are clearly established, the additional costs, delays, and uncertainty will be reduced. Conversely, if the criteria are not clearly established, there will be considerable uncertainty for buyers and sellers, and they may incur additional costs and delays in satisfying uncertain criteria. Furthermore, if the districts are free to develop their own criteria, they are free to prohibit some or all transfers outright and maintain their control over the water, whether or not individuals would rather sell it.

Strategy 7: Provide Local Governments With Veto Power

The local government veto strategy is similar to the water and irrigation district veto approach, except that a democratically elected body of local government, such as a county board of supervisors, would decide whether a transfer out of the local area should proceed.

Rating

Most reviewers rated this option as fair or poor. A few rated it good or excellent.

Addressing Third-Party Impacts

If the government body is democratically elected and representative of the entire community, all community concerns should be addressed. However, the reviewers stressed that only local economic and social concerns will be addressed—not those outside of the local jurisdiction. Furthermore, some expressed concern that the elected officials may not represent all interests in the community.

The reviewers disagreed over whether environmental impacts will be addressed. Many indicated that local governments may not be competent and may not have the expertise necessary to make decisions about these impacts, or they may not be concerned about these impacts. In addition, local governments may not be concerned about the regional, basinwide, or downstream impacts resulting from transfers.

Minimizing Impediments

As with district veto power, the additional transaction costs and time delays to meet criteria will vary, depending on the criteria chosen. If the criteria for transfer approval are clearly established, the additional costs, delays, and uncertainty will be reduced. Conversely, if the criteria are not clearly established, there will be considerable uncertainty for buyers and sellers, and they may incur additional costs and delays in satisfying uncertain criteria. If local governments are free to develop their own

criteria, they are free to prohibit some or all transfers outright and maintain their control over the water, whether or not individuals would rather sell it.

**Strategy 8: Rely on District Veto Power With Criteria Specified**

Strategy 8 is another variation of the district veto strategy that would require water and irrigation districts to follow specified criteria in reviewing and vetoing transfers, to ensure that transfer decisions are made on the basis of all community concerns—not just district concerns—and to avoid arbitrary vetoes. Districts could not veto a transfer unless it meets the criteria, and vetoes would be subject to administrative review if considered arbitrary. A version of this option was included in the Central Valley Project Improvement Act. Among other things, the act allows individuals, as well as water districts, to transfer CVP water to any other California user.

**Rating**

The ratings for this strategy varied greatly. The responses indicate that some think it is unrealistic to assume that districts will consider other third parties in an unbiased way.

**Addressing Third-Party Impacts**

The reviewers generally agreed theoretically with GAO's conclusions that if the criteria specify that all community and environmental concerns are included, then all concerns will be addressed and all environmental conditions can be maintained. However, they expressed doubts that this approach would work and that districts could change their focus so significantly to protect third-party interests that do not involve their members.

**Minimizing Impediments**

If the criteria for district veto power are clearly specified beforehand, this strategy would reduce additional impediments by reducing the uncertainty, transaction costs, and delays associated with district veto power. Applicants can form expectations about the outcome of their proposals and can focus on satisfying the specified criteria. However, depending upon the criteria, certain types of transfers may be prohibited outright, regardless of the value to buyers and sellers.

**Strategy 9: Require Comprehensive Planning to Identify the Public Interest**

Comprehensive planning gives citizens of the community the opportunity to help define what is meant by the public interest in the community and what impacts and local values should be considered when reviewing proposed transfers. Such planning could be used in conjunction with a

public interest review process to clarify or prioritize the values included in the public interest.

Rating

Most reviewers rated planning as good or excellent. However, some expressed concern that plans are too general and speculative to anticipate all relevant impacts in each transfer situation; therefore, it is difficult to predict how the plan will hold in each case and how useful it will be.

Addressing Third-Party Impacts

If all interested parties or their representatives—including government agencies—have the opportunity to become involved in the process, then all community concerns should be addressed and all environmental conditions maintained. Conversely, if certain groups are not given the opportunity to be involved, it is likely that the concerns of these often less powerful groups will not be considered. The reviewers generally agreed with these conclusions, but some expressed concern that not all affected interests will get involved. They noted that it is very difficult to ensure that some groups are not overlooked. Some indicated that public input and agreement on the plan are crucial to its effectiveness.

Minimizing Impediments

The reviewers generally agreed with GAO's conclusions that identifying community values before transfers are proposed can reduce the transaction costs, time delays, and uncertainty associated with public interest reviews, because the public interests are more clearly defined and prioritized. Some reviewers, however, noted that developing plans is slow and expensive.

The reviewers also agreed that planning can be used primarily to define the public interest more clearly and allow flexibility and balancing of interests, or it can identify the values that will be protected rigidly from all transfers, regardless of the value of the transfer to the buyer and seller. Depending upon how rigidly the preferences and criteria are set, this strategy could prohibit certain transfers from occurring outright, regardless of the value to the buyers and sellers.

Summary of Strategies 6  
Through 9

Table I.2 summarizes the conclusions for strategies 6 through 9. As with table I.1, the conclusions summarized in table I.2 are general and should not be assumed to hold in all cases. Exceptions are discussed in the text above for each strategy.

**Appendix I  
Strategies for Addressing the Impacts of  
Water Transfers on Third Parties**

**How Strategies 6 Through 9 Would Address Third-Party Impacts and Minimize Impediments**

	(6) Irrigation or water district veto	(7) Local government veto <sup>a</sup>	(8) Irrigation district veto power with criteria specified <sup>b</sup>	(9) Comprehensive planning to identify public interest <sup>a</sup>
Reviewers (Reviewers)	Poor (n = 15)	Poor or fair (n = 17)	No consensus	Good or excellent (n = 16)
Addressing third-party impacts <sup>c</sup>	Y/N	Y	Y	Y
Surface water <sup>d</sup>	N	Y	Y	Y
Groundwater <sup>d</sup>	N	Y/N	Y	Y
Soil conditions <sup>d</sup>	N	Y	Y	Y
Transaction costs	Positive: If criteria are clearly established, additional costs, delays, and uncertainty will be reduced.		Positive: Can reduce transaction costs and be more timely and certain compared to previous options; approval criteria more specifically identified beforehand.	
Outright prohibitions	Negative: If criteria are rigid, some types of transfers may be prohibited outright. If criteria are unclear, can add transaction costs, delays, and uncertainty.		Negative: Depending upon how rigid the criteria are, it might prohibit certain transfers outright.	

KEY

Y(es) - Policy goal is likely to be achieved.

N(o) - Policy goal is unlikely to be achieved; the strategy does not address the impact, although incidental benefits may result from the policy.

Y/N - Reviewers disagreed whether the strategy would address these impacts.

<sup>a</sup>Y(es) responses are valid only if all interested parties have the opportunity to become involved in the process.

<sup>b</sup>Y(es) responses are valid only if all third-party impacts are included in the criteria to be considered.

<sup>c</sup>Economic and social concerns are addressed by the strategy if the strategy accounts for the significance of the impact and eliminates or reduces the adverse impacts to acceptable levels.

<sup>d</sup>Surface water, groundwater, and soil conditions are maintained if the strategy ensures that pre-transfer conditions are maintained at existing or better levels. Lower levels can be allowed when they are based on acceptable standards.

**Strategy 10: Establish  
Minimum Streamflows or  
Lake Levels**

Some states establish minimum streamflows or lake levels to protect environmental conditions, such as water quality and fish and wildlife habitat, that may be harmed by changes in surface water resulting from

transfers and new water rights. Under this strategy, water transfers that would reduce the water in the protected water body below the minimum level would not be allowed by the reviewing agency. This strategy can be effective only for those water bodies that have minimum levels established.

**Rating**

Most reviewers rated the establishment of minimum streamflows or lake levels as good or excellent. Some noted that although it is not sufficient as a general solution to all impacts, this is an effective solution for avoiding the degradation of surface water conditions. However, some also noted that these standards do not exist for many areas of the West.

**Addressing Third-Party Impacts**

Minimum levels will address economic and social concerns only to the extent that they relate to recreation, tourism, aesthetics, or subsistence for the poor. Other economic and social concerns, such as those related to reductions in agricultural production, will not be addressed by this strategy.

Minimum streamflows and lake levels can maintain desirable surface water conditions for the instream and reservoir values that the levels are established to protect. However, some surface water impacts, such as habitat along irrigation canals or wetlands dependent on irrigation runoff directly from fields, will not necessarily be protected. In addition, minimum streamflows and reservoir levels would not necessarily maintain groundwater and soil conditions, although some reviewers noted that minimum streamflows can help protect groundwater where surface and groundwater systems are connected. The reviewers generally agreed with our conclusions.

**Minimizing Impediments**

This strategy sets predetermined standards within which transfers must fall. Transfer applicants must demonstrate to the reviewing agency only that their transfers satisfy clearly established, specific standards that hold for all transfers. Therefore, this strategy has limited transaction costs, delays, and uncertainty. However, once the standards are exceeded, transfers cannot occur. Therefore, this strategy can prohibit certain types of transfers from occurring outright, regardless of the value of the transfers to the buyers and sellers.

The reviewers agreed, but some noted that such prohibitions under minimum streamflows or lake levels are not a negative result, if the levels are legitimate, because they indicate that the transfer should not occur, presumably because it would have adverse impacts.

**Strategy 11: Limit the  
Amount of Water  
Transferred From the Area**

This strategy would place a cap on the amount of water that can be sold from a local area, such as an irrigation district or basin of origin. Limits on the amount of water that can leave an area ensure that some water stays in the area. The goal is to preserve the local economy and way of life.

**Rating**

Most reviewers rated limiting transfers as fair or good. Some felt it might be useful in some areas, but not in others. In addition, some noted that reaching agreement on the cap could be difficult.

**Addressing Third-Party Impacts**

If the basis for establishing the cap is to protect the local economy and way of life, then restricting the amount of water that can leave an area generally would reduce adverse economic and social impacts, because the existing lifestyle would remain largely intact. However, determining an effective limit to protect existing economies and cultures is difficult, and restrictions may be arbitrary: They may be insufficient to maintain local conditions or, conversely, may be too stringent and limit the economic benefits that can occur from water transfers.

While reducing water loss might incidentally reduce adverse environmental impacts, the reviewers agreed with our conclusions that all conditions would not necessarily be maintained—transfers below the limit could occur without the consideration of these impacts, and the limits established to protect economic and social values may be too high to prevent environmental impacts. However, some reviewers noted that certain environmental values, such as surface water conditions, may be protected if they form the basis for the cap.

**Minimizing Impediments**

This strategy sets predetermined standards within which transfers must fall, which limits transaction costs, delays, and uncertainty. However, once the standards are exceeded, transfers cannot occur. Therefore, this strategy can prohibit certain types of transfers from occurring outright, regardless of the value of the transfers to the buyers and sellers. The reviewers generally agreed with our conclusions.

**Strategy 12: Prevent or  
Limit Fallowing of  
Agricultural Land**

This strategy would limit or prevent transfers that involved removing agricultural land from production, to protect the agricultural economy and way of life.

**Rating** Most reviewers rated limiting fallowing as poor. They indicated that it may be harmful to limit declining agricultural economies that need to diversify their economy from realizing the economic benefits of transfers. In addition, some noted that many other economic factors can cause farmers to fallow land.

**Addressing Third-Party Impacts** Limiting fallowing of agricultural land would reduce social impacts on agricultural communities because the agricultural way of life would be maintained. However, the reviewers disagreed on this strategy's effectiveness in addressing adverse economic impacts. Some noted that only some economic and social concerns are addressed—primarily agricultural concerns. Furthermore, some indicated that this strategy may actually hurt declining agricultural economies, because it limits the economic benefits that can result from transfers.

The reviewers generally agreed that this strategy would limit soil problems resulting from fallowed farmland but would not maintain other environmental conditions. For example, transfers that involve increasing irrigation efficiency rather than fallowing farmland can change surface water conditions by reducing runoff and seepage from the irrigation canals that sustain wetlands or other wildlife habitat. Similarly, irrigators may also contribute to groundwater overdraft by replacing transferred surface water with pumped groundwater to continue farming.

**Minimizing Impediments** As with strategies 10 and 11, limits on fallowing set predetermined standards within which transfers must fall, which limits transaction costs, delays, and uncertainty. However, once the standards are exceeded, transfers cannot occur. Therefore, this strategy can prohibit certain types of transfers from occurring, regardless of the value of the transfers to the buyers and sellers.

**Strategy 13: Prevent Transfers From Sensitive Areas With Zoning** The use of zoning would prohibit transfers out of specified areas that are determined to be sensitive to the impacts of transfers. For example, zoned areas might include areas of critical environmental concern or areas susceptible to economic decline.

**Rating** Most reviewers rated zoning fair or good. Their concerns centered on the difficulty of establishing zones, such as determining what areas should be zoned, defining sensitive areas, and determining who makes zoning decisions. Such issues could be controversial and divisive.

Addressing Third-Party Impacts

The use of zoning generally will address all impacts in zoned areas because transfers from the area will not occur. However, some reviewers noted that zoned areas can experience some spillover impacts caused by transfers in neighboring unzoned areas. Zoning will not address either these spillover impacts or the other impacts of transfers that occur outside of the zoned area. Others noted that zoning does not allow beneficial transfers either, and therefore agricultural areas in decline could be hurt by this restriction. Some felt that this approach would be more effective in protecting environmental values in sensitive areas.

Minimizing Impediments

As with previous strategies, zoning sets predetermined standards within which transfers must fall, which limits transaction costs, delays, and uncertainty. However, once standards are exceeded, transfers cannot occur. Therefore, this strategy can prohibit certain types of transfers from occurring, regardless of the value of the transfers to the buyers and sellers.

Strategy 14: Tax the Transfers

Under this approach, transfers would be taxed and the proceeds used to mitigate the impacts of transfers. Taxes could be paid in money or in a percentage of the water transferred. This option is different from compensation in that taxes are pre-established amounts that hold for all transfers; they are not negotiated to address the specific circumstances of a transfer and are charged for all transfers, whether the impacts are positive or negative. A version of this option, in the form of a charge per acre-foot of water transferred, was included in the CVP Improvement Act.

Rating

Ratings for taxing transfers varied greatly; similar numbers of reviewers rated it poor, fair, or good, and a few rated it excellent. Some reviewers thought that this would be a good strategy when used in combination with other mechanisms, and some indicated that its effectiveness depends on how the tax revenues are used.

Addressing Third-Party Impacts

Taxes can offset local economic impacts and help maintain the community. They can also be used to pay for replanting to mitigate soil problems. However, taxes will address only those concerns to which the proceeds are dedicated, and as with compensation, some social and environmental impacts cannot be mitigated by a tax. Funding social services could mitigate social impacts, in some cases. In addition, some surface and groundwater impacts could be mitigated if taxes were used to keep water in the stream or to purchase replacement water (if allowed by the state) or if the tax itself is a percentage of the water transferred.

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**Appendix I  
Strategies for Addressing the Impacts of  
Water Transfers on Third Parties**

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**Minimizing Impediments**

Pre-established transfer taxes would not add delays or uncertainties to the approval process and would not prohibit any transfers from occurring outright. So long as buyers and sellers are willing to pay the tax, water can go to other uses. However, taxing transfers can impede transfers by directly adding costs to the transfer. For example, taxes will effectively preclude some transfers that are only marginally profitable without the tax.

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**Summary of Strategies 10  
Through 14**

Table I.3 summarizes the conclusions for strategies 10 through 14. As with the previous tables, the conclusions summarized in table I.3 are general and should not be assumed to hold in all cases. Exceptions are discussed in the text for each strategy.

**Appendix I  
Strategies for Addressing the Impacts of  
Water Transfers on Third Parties**

**Table I.3: How Strategies 10 Through 14 Would Address Third-Party Impacts and Minimize Impediments**

	(10) Establish minimum streamflows and lake level standards <sup>a</sup>	(11) Limit overall amount of water to be transferred out of the area	(12) Prevent or limit fallowing of agricultural land	(13) Zoning: Preventing transfers from sensitive areas <sup>c</sup>	(14) Tax the transfers <sup>d</sup>
Rating by reviewers (n = 23 reviewers)	Good or Excellent (n = 14)	Fair or Good (n = 16)	Poor (n = 15)	Fair or Good (n = 15)	No consensus
Policy goals: Addressing third-party impacts					
Economic <sup>e</sup>	N	Y	Y/N	Y	Y
Social <sup>e</sup>	N	Y	Y	Y	N
Surface water <sup>f</sup>	Y/N <sup>b</sup>	N	N	Y	N
Groundwater <sup>f</sup>	N	N	N	Y	N
Soil <sup>f</sup>	N	N	Y	Y	Y
Policy goal: Minimizing impediments	Positive: Limited transaction costs, delays, and uncertainty—these policy options establish specific criteria that hold for all transfers.				Positive: Timely and certain; does not prohibit any transfers
	Negative: Prohibit certain transfers outright, regardless of the value of the water to the buyer and the seller.				Negative: Adds costs

**KEY**

Y(es) - Policy goal is likely to be achieved.

N(o) - Policy goal is unlikely to be achieved; the strategy does not address the impact, although incidental benefits may result from the policy.

Y/N - Reviewers disagreed whether the strategy would address these impacts.

<sup>a</sup>Y(es) response is valid for water bodies with established streamflows or lake levels.

<sup>b</sup>Y/N indicates that some surface water impacts would be addressed while others would not.

<sup>c</sup>Y(es) response is valid only for zoned areas. Outside of zoned areas, response is negative.

<sup>d</sup>Y(es) response is valid only for impacts for which revenues are earmarked.

<sup>e</sup>Economic and social concerns are addressed by the strategy if the strategy accounts for the significance of the impact and eliminates or reduces the adverse impacts to acceptable levels.

<sup>f</sup>Surface water, groundwater, and soil conditions are maintained if the strategy ensures that pre-transfer conditions are maintained at existing or better levels. Lower levels can be allowed when they are based on acceptable standards.