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Rodney T. Smith

Bruce C. Driver

John H. Davidson

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Discussion Papers on

on

IRRIGATION WATER SUPPLY ORGANIZATIONS

**Prof. Rodney T. Smith, Claremont Mckenna College
Bruce Driver, Attorney/Consultant, Denver
Prof. John Davidson, Univ. of South Dakota School of Law
Tim De Young, Modrall, Sperling, Roehl, Harris & Sisk,
Albuquerque**

Natural Resources Law Center

University of Colorado School of Law

1991

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PREFACE

In December, 1990, the Natural Resources Law Center, with the support of a grant by the Ford Foundation, hosted a meeting on irrigation water supply organizations. The purpose of the meeting was to develop an agenda for change in each of four areas: (1) reallocation of western water; (2) water conservation; (3) water quality; and (4) issues of governance. Discussion papers in each of these areas were provided to meeting participants, listed on the next page, in advance of the meeting and presented by the authors at the meeting. The papers presented here are in the same form as presented to meeting participants, with minor changes.

PARTICIPANTS LIST

Irrigation Districts Meeting
December 6-7, 1990

Prof. A. Lee Brown
Grossmont College
8800 Grossmont College Dr.
El Cajon, CA 92020-1799

Hal Candee
Natural Resources Defense Council
90 New Montgomery St., #620
San Francisco, CA 94105

E. Walt Coward, Jr.
The Ford Foundation
320 East 43rd St.
New York, NY 10017

Prof. John Davidson
School of Law
University of South Dakota
Vermillion, SD 57069

Tim De Young
Modrall, Sperling, Roehl,
Harris & Sisk
PO Box 2168
Albuquerque, NM 87103

Bruce Driver
Water & Energy Consultant
2354 Albion St.
Denver, CO 80203

Prof. David Getches
CU School of Law
Campus Box 401
Boulder, CO 80309-0401

Prof. Merrill R. Goodall
Claremont Graduate School
McManus Hall 225
170 E. Tenth St.
Claremont, CA 91711-6163

Prof. Charles Howe
IBS Behavior & The Environment
University of Colorado
Campus Box 468
Boulder, CO 80309-0468

Lee Kapaloski
Parsons, Behle & Latimer
185 South State St.
Salt Lake City, UT 84111

Lee Lamb
US Fish & Wildlife Service
4512 McMurray Ave.
Ft. Collins, CO 80525

Prof. John D. Leshy
College of Law
Arizona State University
Tempe, AZ 85287

Larry MacDonnell
Natural Resources Law Center
Campus Box 401
Boulder, CO 80309-0401

Deborah Moore
Environmental Defense Fund
5655 College Ave., #304
Oakland, CA 94618-1540

Larry Morandi
National Conference of State
Legislatures
1050 - 17th St., #2100
Denver, CO 80265

Teresa Rice
Natural Resources Law Center
Campus Box 401
Boulder, CO 80309-0401

Lee Rozaklis
Hydrosphere
1002 Walnut, #200
Boulder, CO 80302

Suzanne Siskel
The Ford Foundation
320 East 43rd St.
New York, NY 10017

Prof. Rod Smith
Water Strategist
PO Box 963
Claremont, CA 91711

Gregory A. Thomas, President
Natural Heritage Institute
Golden Gate National
Recreation Area
1055 Fort Cronkhite
Sausalito, CA 94965

Prof. Charles Wilkinson
School of Law
University of Colorado
Campus Box 401
Boulder, CO 80309-0401

IRRIGATION ORGANIZATIONS AND THE REALLOCATION OF WESTERN WATER

Rodney T. Smith *

Introduction

Irrigation organizations find themselves at the vortex of economic, legal, and political developments of western water policy. It is now a cliché in the western water policy community that some water must be reallocated from "lower-valued" agricultural uses to "higher-valued" municipal, industrial, and commercial uses. In addition, the emergence of the public trust doctrine in California, state environmental laws throughout the west, federal environmental laws, and state and federal water quality laws are creating new standards for the use and protection of water resources. At the same time, urban interests will strengthen their control over state legislatures in western states after the 1992 reapportionment, as a result of the continued urbanization in the west. Therefore, when competing claims on agricultural water resources and

* Co-Editor, Water Strategist and Water Intelligence Monthly; Associate Professor of Economics, Claremont Mckenna College, California.

scrutiny over their use are intensifying, the political power of agricultural interests are on the wane.¹

In the long run, maintenance of traditional patterns of agricultural water use is not a viable option. The key issue is how will changes be orchestrated -- through voluntary trades and agreements, regulatory orders, legislative mandates, court decisions, or some combination of all four. The choice will not be the result of a "definitive, one-time" policy decision embodied in a blockbuster omnibus bill, governor's policy statement, landmark court decision, or bold regulatory order. Instead, the outcome will evolve from a multitude of decisions taken by interested parties who make strategic judgments about whether their objectives are best pursued in the market through voluntary trades, at the bargaining table through negotiated settlement, in the halls of the legislature through the exercise of political power, or in the courtroom or before the regulatory agency through the exercise of deft statutory interpretation and innovative explorations in legal theory.

This essay identifies issues which bear on the ability of irrigation organizations to adapt to the new economic, legal, and political realities of western water policy. I do so for two reasons -- one (perhaps) trivial and the other substantive. First, Larry MacDonnell asked me to do so. Second, it is time we focus our attention on the problems confronting these organizations. Over the past ten years, most policy analysts, commentators, and policy-makers have focussed

¹ For example, over 80 percent of Arizona's population resides in the three largest metropolitan areas that constitute three of the state's five Active Management Areas defined by the 1980 Groundwater Act. Therefore, legislative action on urban/agricultural water issues will be decided by legislators from urban districts.

on institutional, legal, and policy questions concerning state and federal government. Especially for proponents of water marketing, we have examined state and federal law and policy for potential impediments and obstacles to voluntary water transactions. In California, for example, the legislature has even been accommodating in passing the necessary legislation to remove identified obstacles. Yet water trading in the west is still dominated by the same transactions -- the monthly sale of units in the Colorado-Big Thompson project, shares in ditch and mutual companies.² It is time for us to examine why "water has not flowed" over lowered legal barriers.

Below, I argue that the outcome of "little new trading" can be explained by a simple fact: irrigation organizations that lack traditions of trading have yet to develop mechanisms for trading. Unless these organizations adapt, they will inevitably face politically/legally mandated reallocation. In the end, they must either change their practices on their own, or they will have their practices changed for them.

The core issue is the institutional capacity for irrigation organizations to change. Below, I concentrate on five areas which shape the ability of irrigation organizations to change: (1) institutional capacity of organization leadership; (2) the trustee relationship between district boards and water users; (3) district governance and local concerns; (4) the role of potential

² Water banks have emerged in Idaho and Kern County, CA, but they commonly involve one-year, irrigator-to-irrigator transactions at administratively-set prices. Over the past three years, one-year agreements for large blocks of water have been negotiated among northern and central California water agencies and the California Department of Water Resources, but these transactions are for drought management and not long-term transfers. For discussion of the historic agreement between the Imperial Irrigation District and Metropolitan Water District of Southern California, see section on "Institutional Capacity of Irrigation Organizations," *infra*.

transfers in regulatory/environmental review of agricultural water use; and (5) mechanisms for groundwater control. Many of these areas must be solved by local initiative and leadership, although there are some areas where state policy and legislation may play an important role.

Historical and Policy Context

It may be useful to set the historical and policy context before addressing the challenges facing irrigation organizations. Below, I offer a brief review of the development of irrigation organizations in the west, and the potential magnitude of transfers from agriculture to meet growing municipal water demands. Summary: Agriculture must make the largest percentage reductions in water use to meet growth in urban water use in the states with: (1) the significant reliance on groundwater, and (2) the highest share of irrigated acreage in irrigation organizations served by irrigation districts.

A Brief Historical Sketch of the Development of Irrigation Organizations

What are the various types of irrigation organizations? How did they come into existence? How important are they today in managing agricultural water in the west?

Early western water development was dominated by private ownership. Individual partnerships and mutual irrigation companies financed water diversion and distribution among members according to private contract. State incorporation laws established mutual irrigation

companies as nonprofit entities, in which rights to water service and responsibilities for payment of costs were prorated according to ownership of shares in the mutual.

With the passage of the Wright Act (1887) in California, local government entities with limited general taxation powers entered into water development. Local irrigation districts were empowered to raise revenues by any combination of water charges and property taxation chosen by its elected board of directors. Water rights were either prorated according to land ownership, or allocated according to discretionary powers of the board -- whose legal duty was to be "just and equitable."

Public irrigation districts were financial failures until the 1920s. Most of the Wright Act districts formed in California were dissolved within a few years of organization. Mutuals and partnerships remained the dominant source of irrigation development until the late 1920s and early 1930s. Then public ownership blossomed with the growth of federal water projects, and, after World War II, with the financial advantages of tax-exempt public district debt which grew with higher federal personal income tax rates.

An article by this author provides a review of the pattern of water use, irrigated acreage, and invested capital by mutuals, irrigation districts, projects operated by the U.S. Bureau of Reclamation, state/local governments, and other types of water agencies.³ The most recent data available is from the 1978 Agricultural Census, which was the last year that the national

³ See Smith, "Troubled Waters: Financing Water in the West", *Investment and Financing in the West* 13-27 (1984).

irrigation survey included questions about irrigation organizations. The following statements summarize the situation westwide.

- In 1978, less than 10 percent of westwide total agricultural acreage is irrigated, including range land;
- although large organizations are important to western water development, overall only 56.4 percent of irrigated acreage is served by formal organizations: mutual irrigation companies, public irrigation districts, USBR-operated projects, state and local governments;
- states in which groundwater supplies a large share of total water supply have smaller shares of their irrigated acreage served by formal organizations;
- between 1920 and 1978, irrigated acreage served by mutuals, irrigation districts, and USBR projects grew by 2.4 million acres, 9.0 million acres, and 5.3 million acres, respectively;
- public irrigation districts serve 54.8 percent of irrigated acres served by formal organizations, mutuals 32.9 percent, USBR-operated projects 1.6 percent, local governments 1.1 percent, and other agencies 9.5 percent;
- USBR projects are associated with relatively intensive water use, conveying 55.3 percent of water to only 44.7 percent of irrigated acreage served by formal organizations.

Potential Magnitude of Agricultural Water Transfers

With the continued demise of water development projects (witness the formal EPA veto of Two Forks), continued growth in the west must turn to water reallocation and conservation. Forecasting the potential magnitude of reallocation of water from agricultural to municipal use is a daunting task. The key points of an article that identifies the rough magnitude of water involved are the following:⁴

⁴ See "Evaporating Water Markets?: New Contingencies for Urban Water Use," *Water Strategist* 11, 16 (July 1989).

- Growth in urban water demand is not inevitable, the economic prospects of the west have changed within the past three years and locally incurred costs for waste water treatment may reduce urban water use by driving up water rates;
- if real water rates remain constant and with population growth projected by U.S. Bureau of Census in 1985, irrigation water use must decline westwide by 8.8 percent (6.5 million af/yr) by the year 2000 to meet growing urban demands;
- if real water rates remain constant and with population growth projected by Census in 1988, irrigation water use must decline westwide by 7.0 percent (5.1 million af/yr) by the year 2000 to meet growing urban demands;
- if real water rates double and with population growth projected by Census in 1988, irrigation water use must decline by only 2.1 percent (1.5 million af/yr) by the year 2000 to meet growing urban water demands;
- agriculture in Arizona, California, Nevada, Oklahoma, Texas, and Washington must make large percentage reductions, unless urban water rates double.

In sum, relatively modest reallocations of water are required to meet municipal demands, even if per capita urban water use remains constant. Moreover, higher water prices (reflecting anticipated waste water treatment costs) may reduce per capita use by 22 percent. In this situation, significant reallocation of water from agriculture to municipal areas will be limited to those states (or regions of a state) which have high population growth rates and small increases in water charges. Municipalities with average or below average growth may have little demand for water from agriculture.

Significant reductions in irrigation use will be concentrated in a few states -- see Table 1. Examining the estimated reductions from the third scenario (most recent population 8.75 growth estimates and doubled real water prices), reductions in irrigation use greater than two percent are likely to occur in only five states (Arizona, California, New Mexico, Nevada, and Texas).

Table 1
Reductions in Irrigation Use
Required to Meet Growth
in Urban Water Use and Irrigated Acreage in Organizations

State	Reduction in Irrigation Use (%)			Share Acreage in Organizations	Share Acreage in Mutuals	Districts
	I	II	III			
AZ	15.93	10.57	5.43	50.6	14.8	66.2
CA	5.82	8.24	2.41	68.0	13.2	83.5
CO	4.45	2.33	0.51	78.2	89.4	9.1
ID	2.65	0.48	*	75.3	61.9	29.5
KS	0.68	0.87	*	3.7	0.0	77.0
MT	0.97	0.04	*	80.1	61.1	24.9
ND	4.14	*	*	25.0	0.0	91.2
NE	0.40	*	*	14.1	7.5	90.8
NM	4.26	6.68	3.11	54.4	39.9	32.4
NV	13.50	6.07	2.91	87.4	50.6	42.2
OK	58.73	22.43	*	3.7	0.0	77.0
OR	9.74	0.71	*	55.7	35.9	60.6
SD	*	1.74	*	27.5	16.3	83.8
TX	25.44	23.38	8.42	15.2	1.5	71.3
UT	12.92	5.20	0.37	100.0	85.4	6.0
WA	17.93	9.06	*	30.0	10.6	77.4
WY	3.82	0.14	*	80.0	38.3	30.9
West	8.75	6.96	2.00	56.4	32.9	54.8

* denotes forecasted decline in urban water use.

<u>Scenario</u>	<u>Assumption</u>
I	1985 forecasted population growth, constant real water price.
II	1988 forecasted population growth, constant real water price.
III	1988 forecasted population growth, doubled real water price.

Sources: "Evaporating Water Markets?: New Contingencies for Urban Water Use," *Water Strategist* 11 (July 1989) (for reductions in irrigation use); Smith, "Troubled Waters: Financing Water in the West," *Investment and Financing in the West* 13-27 (1984) (for share of irrigated acreage in irrigation organizations and distribution among mutuals and irrigation districts).

Generally speaking, irrigation districts serve the greatest share of irrigated acreage served by irrigation organizations. Moreover, these states have a large share of their acreage irrigated outside of formal organizations -- an indicator of dependence on groundwater.

INSTITUTIONAL CAPACITY OF IRRIGATION ORGANIZATIONS

Traditionally, the function of irrigation organizations has been to develop reliable, low-cost water supplies for their customers. This activity required organizations to marshal expertise in hydrology, engineering, and, in the case of contractors with federal water projects, negotiating contracts with the federal government. Organizational staff focused on operational questions, such as "keeping the system running" and complying with the terms of federal contracts. Board of directors serve in a part-time capacity, bringing with them the expertise they have accumulated from successfully operating their own farms.

The growing regulatory scrutiny over water use and the emerging opportunities for water trades requires expertise well outside that found in traditional irrigation organizations. What are reasonable expectations about potential trading opportunities? How does the board distinguish good deals from bad? How does a board structure a transaction to assure that its customers receive benefits from a trade, not simply less water? And how does a board persuade residents that the trade contributes to the overall economic and environmental health of the community? These questions must be answered. Otherwise, the organization is paralyzed by confusion and dissension.

The above factors were responsible for the demise of the first Memorandum of Understanding reached between Imperial Irrigation District (IID) and the Metropolitan Water District of Southern California (MWD).⁵ While IID and MWD reached an agreement in late 1988, this should not be viewed as an exemplary example of a voluntary water trade. In September 1988, after IID had exhausted all avenues of legal appeal of an earlier board order (D-1600) holding that IID wastes water, the State Water Resources Control Board required IID to come up with a "written plan and definite implementation schedule" (which must detail how conservation projects would be financed) to conserve at least 100,000 af/yr by January 1, 1994. The agreement beat the deadline by nine days.⁶

In 1990, the Imperial Valley is still politically divided by the first IID/MWD agreement, and the wisdom of entering into subsequent agreements. Since negotiations began in the early 1980s, only one board member has been re-elected (he has not been a member of any of the many negotiating teams on which some board members have served). All others have been defeated by challengers interested in exerting leadership on the transfer issue. These challengers, in turn, have served four years before being replaced by yet other individuals.

The regular defeat of incumbents in Imperial Valley is not a rejection of trading. To date, challengers have simply questioned whether better deals could be made which provide something for water users and the local economy of Imperial Valley.

⁵ See Smith and Vaughan, "Taking Water to Market," *Civil Engineering* 70-73 (March 1987).

⁶ See *id.* for a discussion of the agreement. See also, "Let's Make a Deal: The IID/MWD Water Conservation Agreement," *Water Strategist* 5, 15 (Jan. 1989).

TRUSTEE RELATIONSHIP BETWEEN DISTRICT BOARDS AND WATER USERS

Structuring water trades to benefit water users may be politically necessary, but many may find that compensation is not necessarily suitable for irrigation districts. After all, a district is a quasi-governmental entity prohibited from making a profit. Can a district make a profit if it remits the proceeds to its water users. Or in other words, can a district structure a water trade which makes it operate "like a mutual?" In my view, the answer lies in the trustee relationship between the board and its water users.

The board of an irrigation district manages the district's water supply under a trustee obligation. As trustee, the board holds legal title to the water. It is legally obligated to administer those rights for the benefit of individuals who hold an "equitable and beneficial" interest in the trust. Statutes and case law in the west have generally bestowed landowners served by the district with the equitable and beneficial interest in the district's water supply.

A proposal has been suggested for structuring water trades to pass the benefits of transactions through to water users, while conforming with an economic interpretation of the trustee relationship between irrigation districts and water users.⁷ Beyond the specifics of the proposal, the discussion illustrates the fact that a water trade involves the board in negotiations with at least two types of parties: (1) the acquirer of water; and (2) its water users. Execution

⁷ See "Just Rewards: Making Water Marketing Work for Local Interests," *Water Strategist* 1, 2, 11,12 (July 1987). For a more extensive discussion of the relation of the proposal to California law, and of the economic effects of the method, see Smith, "Water Transfers, Irrigation Districts, and the Compensation Problem," 8 *J. of Policy Analysis and Management* 446 (1989).

of acceptable agreements to all parties may require an imaginative rethinking of the nature of the trustee relationship between districts and water users.

DISTRICT GOVERNANCE AND LOCAL CONCERNS

District boards must also address concerns about the effect of water trades on the local environment and local economies. Board members will address these concerns naturally by their self-interest in political survival if electors include a broader constituency than agricultural water users. But even if residents of local communities are disenfranchised, board members may still confront local concerns because of the need to secure local permits or pass environmental review of proposed water transfers.

Many several possible approaches have been explored for how a community may use a water trade to promote local economic development.⁸ Unfortunately, local economic development agencies do not have a promising track record. Even if a successful agency could be designed, irrigation organizations probably lack the power to establish or contribute monies to them. Moreover, holders of shares in mutuals or the equitable and beneficial interest in irrigation districts would probably view the dedication of proceeds from water trades to such activity as diminishing the legal nature, and certainly the economic value, of their water right.

⁸ See "Avoiding Owens Valley Syndrome: Using Water Trades to Promote Rural Economic Development," *Water Strategist* 5, 6, 13 (Oct. 1987).

Local environmental concerns about water trades and transfers can be more readily addressed through placing terms and conditions on the transfer projects. The historic agreement between Inyo County and the Los Angeles Department of Water & Power concerning Los Angeles' pumping of groundwater from the Owens Valley is illustrative.⁹ The agreement coordinates the amount of allowed pumping with monitoring of the water table and the status of local vegetation. The agreement offers the Valley environmental protection, enhancement of fisheries and recreational opportunities, local control of town water supply systems, auctioning of municipal lands owned by Los Angeles, and financial support of their local governments. The agreement offers Los Angeles a potentially larger but certainly more reliable supply from Owens Valley.

With the continuation of drought in California, controversy has arisen in Inyo County over the effectiveness of the agreement to protect the local environment. In November, three incumbent supervisors in Inyo County faced recall elections because they approved the agreement. However, all recalls failed -- each received about 40 percent of the vote.

ROLE OF POTENTIAL TRANSFERS IN REGULATORY/ENVIRONMENTAL REVIEW OF AGRICULTURAL WATER USE

Thus far, I have addressed issues relating to the capacity and willingness of irrigation organizations to engage in voluntary water trades. However, irrigation organizations also face

⁹ See "Coming to Terms: A Proposed Agreement for the Owens Valley Dispute," *Water Strategist* 1, 2, 12-14 (July 1989). See also, "Coming To Terms Again," *Water Strategist* 5 (Oct. 1989).

the prospect of forced trades. I briefly discuss this prospect in two likely scenarios: (1) regulatory review of agricultural water use (e.g. California's State Water Resources Control Board concluding that the Imperial Irrigation District wastes water); and (2) consideration of water trading alternatives in environmental review of water right proceedings (e.g. consideration of water trade possibilities for alternative sources of supply to increased diversions from California's Bay-Delta, and Denver's Two Forks project).

In its decision D-1600, the State Water Resources Control Board (SWRCB) reached its decision without regard to the economic circumstances of water use in the Imperial Valley. Moreover, as already discussed, the SWRCB issued an order which placed great regulatory pressure for IID to enter into an agreement within four months or face the prospect of forfeiting its rights. During this time, MWD brandished a legal theory, based on a doctrine of physical necessity, which would justify MWD simply entering the Imperial Valley, undertaking the projects, paying the costs, and using the conserved water. In effect, IID faced a new doctrine of western water law -- "trade it or lose it."

A similar problem may arise from any environmental assessment that identifies water trading as preferable to an exercise of an existing water right or development of a proposed water source. For example, suppose that the Bay-Delta proceedings in California concludes that state and federal project diversions should remain at their 1985 levels, and that exports to the south could only be increased through the acquisition of conserved water from Central

Valley farmers.¹⁰ How will such a finding in the Bay-Delta hearings influence future board investigations into the reasonableness of water use by Central Valley farmers? When will these farmers effectively face an "obligation to trade?" And, how will the prospect of an obligation to trade affect the course of negotiations before regulatory investigations into the reasonableness of water use?

These questions are among the most perplexing of all issues and questions raised in this essay. Obviously, water use in agriculture (or any other use for that matter) must be held to a legal standard of reasonable use. Similarly, the prospect of water trades, and their environmental consequences, should be considered during environmental review of proposals for new water projects or expanded diversions under existing rights. (My concerns should not be read as stating a case for abandoning the reasonable use standard, or for banishing the prospect of water trades from environmental impact statements.) However, the development of criteria for regulatory review must take into account that it shapes the conduct of parties engaged in negotiations of potential water trades.

GROUNDWATER CONTROL

As already discussed, water reallocation is likely to occur in states where groundwater supplies a significant part of agricultural water use. Therefore, municipalities will be engaged in the acquisition of groundwater supplies. At the same time, many aquifers are, at best, partly

¹⁰ The scenario in the text is hypothetical, but not fanciful. The original draft staff report on the Bay-Delta hearings made this recommendation. The draft report was subsequently withdrawn.

regulated to control overdraft problems. Unless aquifers are controlled through schemes of tradeable pumping rights,¹¹ reallocation of water from agricultural to municipal use may result in aggravation of groundwater overdraft.¹²

Each legislative session, state legislatures in western states are empowering local areas to control the transfer of groundwater. Generally, the approaches to date leave much of the "specifics" of local regulation to local authorities. If local authorities use the overdraft problem as a pretense to prohibit or to impose unreasonable restrictions on groundwater transfers, then the 1990s will probably witness litigation analogous to the parade of cases created by El Paso v. Reynolds.¹³

A regime of tradeable pumping rights could have two components.¹⁴ The first specifies the amount of pumping that can be used on overlying lands. The second specifies the amount of pumping that can be used on nonoverlying lands. The second amount could be set to equal the portion of water use on overlying lands that does not recharge the aquifer. Under this rule, the original farmer's pumping and a municipality's exporting of pumped water would have

¹¹ See "Local Control of Groundwater Overdraft: The Lessons from Adjudicated Basins," *Water Strategist* 5, 13-15 (Jan. 1990) [hereinafter Local Control].

¹² A commonly neglected part of the history of Los Angeles water appropriations from the Owens Valley is that the bulk of L.A.'s exports involved the pumping of groundwater from unadjudicated basins.

¹³ See El Paso v. Reynolds, 563 F. Supp. 379 (D.N.M. 1983); El Paso v. Reynolds, 597 F. Supp. 694 (D.N.M. 1984).

¹⁴ See Local Control, supra.

the same effect on the basin. As a result, water trades need not conflict with the control of overdraft of rural basins.

CONCLUSION

Irrigation organizations will play an important role in the reallocation of western water. However, they lack the institutional capacity to address the myriad of economic and political issues generated by water trades. The issues discussed above fall into two broad categories: (1) those which will be solved by local initiative; and (2) those which may require intervention/assistance from state government. I conclude with four suggestions.

First, an institute or state agency could offer board members of irrigation organizations programs in assessments about the changing economic, legal, and political forces confronting their organizations, the challenges proposed by water trades, and alternative ways of implementing trades. Attendance would be voluntary -- to avoid the appearance that the assistance would be an indirect way for state government to assert control over local water resources. In fact, it would be preferable that the program be offered by a non-governmental group.

Second, legislation may evidently be necessary to resolve questions about (1) the trustee relationship between irrigation districts and its water users, (2) district governance and local concerns, and (3) groundwater control. Whatever the solutions to be employed, legislation

should be reactive to specific circumstances, rather than an attempt to solve all conceptual problems in one comprehensive bill.

Third, guidelines must establish criteria for regulatory review of the reasonableness of agricultural water use. Zach Willey of the Environmental Defense Fund recently informed me that EDF petitioned the State Water Resources Control Board in the late-1970s to establish criteria -- EDF had advocated use of economic principles. The Board ignored the petition and, to this day, no water user in California has any guidance on what constitutes unreasonable water use. Legislation directing agencies to engage in generic rule-making could start this needed process.

Finally, states must decide what legal significance should be attached to trading/transfer opportunities identified in environmental impact statements. I argued above that we should avoid creating an "obligation to trade." At the same time, we must assure that EIS don't become littered with hypothetical trading alternatives. Our (or at least mine) understanding of these problems is so primitive that the process should begin with a commission to study the severity of this problem and develop alternative solutions.

ISSUES IN WATER CONSERVATION

Bruce Driver^{*}

Background: Defining terms

Q: What is the objective of these Q&As?

A: To address some of the issues posed by the objective of conserving water used by irrigation districts.

Q: When you refer to "irrigation districts", what do you mean?

A: I mean any special water district that provides water primarily for irrigation. As such, I do not use "irrigation district" in a technical sense.

Q: When you refer to "conservation", what do you mean?

A: I mean reducing the amount of water that is applied to the land by irrigation districts and their customers without reducing district net income. As such, I do not mean "storage", unless "storage" is a component of a conservation measure.

^{*} Attorney/Consultant on water and energy-related matters, Denver, Colorado

Q: Why the reference to net income of the districts?

A: I am groping for some limitation on the amount of reduction of water applied to the land in order to distinguish conservation from a simple purchase and dry-up of agricultural land. Maybe there's a better way of distinguishing "conservation" from simple purchases or sales resulting in dry-ups. California law speaks in terms of "surplus" water.

Q: Give some examples of agricultural water conservation.

A: Agricultural water conservation can involve anything from more careful irrigation scheduling, shortening furrow lengths and other more precise methods of matching applied water to soil needs, crop changes (from water-intensive to less water-intensive), changing irrigation methods (from furrow to sprinkler to drip) and so on.

Q: Do you view water conservation by irrigation districts and their customers as a valid social policy objective?

A: Yes, but not without qualifications. Conservation, like any other social policy objective, has to be tested against the criterion of whether the benefits achieved by the conservation outweigh its costs. In some places in the West, conservation by irrigation districts and their customers will produce significant net social benefits. For example, conservation by irrigation districts on the West side of the San Joaquin Valley in California will undoubtedly produce benefits measured in the reduction of agricultural drainage, in reduced threats to wildlife, in potential

revenues for farmers and in additional water supplies for purchasers of conserved water. In other places, it may not. For example, allegedly, conservation may dry up wetlands and disturb return flow dependencies in the South Platte Valley of Colorado. In other words, not surprisingly, conservation is not in itself an unalloyed good.

Q: If conservation is not, itself, always a valid social policy objective, what is?

A: "Efficient" conservation is a valid social policy objective. I use "efficient" to refer to conservation in which net social benefits exceed costs.

Q: Isn't this criterion--net social benefits--impossible of application in the real world?

A: Technically speaking, yes, not the least because neither the price of water nor the prices of closely-related commodities equal their social marginal costs, whatever they are. But this does not mean we cannot develop policy to promote conservation of water by irrigation districts that would provide broad social benefits. It does suggest, though, that in doing so we keep an eye on all of the effects of potential policy changes as we consider them.

Present policy and conservation by irrigation districts

Q: Does present western water policy encourage efficient conservation by irrigation districts?

A: By and large, no. The water policy which provides the context in which irrigation districts and farmers operate was designed primarily to achieve social policy objectives other than efficiency (or at least as we view efficiency today). The prime "culprits" (some of them law/policy problems, others practical considerations) that get in the way of efficient conservation by irrigation districts and farmers are: (1) The "use it or lose it" doctrine; (2) Below-opportunity-cost prices of water to irrigation districts and their farmers; (3) Insufficient financial resources to implement conservation measures among districts and farmers; (4) The disinterest of irrigation district management and boards in conservation, particularly that which depends, for its efficacy, on a transfer of an entitlement to use water; (5) In some cases, Bureau of Reclamation contracts and administrative policies that (a) reflect "use it or lose it" concepts (b) reflect the bureaucratic objective of maintaining control over a project or (c) are unclear about how the bureau would respond to conservation initiatives; (6) State water policy that is unclear about agricultural water conservation and transfers; and (7) An absence of data and information.

Q: Please elaborate on these problems:

A: (1) Use it or lose it: This doctrine is alive and well throughout the West. It probably is the greatest impediment to efficient conservation of agricultural water. Irrigation districts are afraid they will not be allowed to transfer water developed through conservation measures. Individual farmers are afraid the district management will draw down their entitlements if they conserve, without any benefit to them. The doctrine has solid, common-sense roots in equity: Why

should anyone benefit from water that they do not put to a beneficial use? But it impedes efficient conservation.

(2) Below-opportunity-cost prices for water: Most districts and farmers pay nowhere near the opportunity cost of water. Thus, they do not have the incentive to conserve water that would be socially cost-effective to conserve.

(3) Insufficient financial resources: Most districts and farmers cannot afford to implement some of the more expensive conservation measures, such as ditch-lining, drip irrigation etc.

(4) Resistance to transfer-dependent conservation: Most districts, reflecting the "institutional" resistance of their farmers to transfers of water to m&i use outside of district boundaries, are loathe to approve these transfers, thereby discouraging conservation measures. In states, like California, where district boards are powerful, this can be the death knell for interest in conservation.

(5) Bureau concerns: For some projects, in particular the Central Valley Project (CVP), the bureau is an impediment to conservation. Notwithstanding California law which promotes agricultural water conservation and transfers, regional bureau policy still (at least as of March, 1991) discourages conservation at almost every turn. For example, conservation to the bureau may lead to a drawing down of contract entitlements at contract renewal time. The bureau so far frowns on transfers of conserved water, except on an annual basis, between agricultural

contractors of the bureau. The bureau would rather control reallocation of CVP water rather than let market forces intrude. Conservation and transfer of water to a use outside of a bureau contractor's service area may not be a "beneficial use" under section 8 of the Reclamation Act, according to the bureau's regional office. And so on. Regional bureau policy may be forced to change as a result of the prolonged drought and pressure from Congress. The region, itself, proposed a draft transfer policy in 1990 that opened the way to greater transfers, including of conserved water. However, the policy was withdrawn.

(6) Unclear state policy: State policy is often unclear on whether districts and/or farmers may derive benefit from conserved water, either through transfers or otherwise. Partly, this is the "use it or lose it" doctrine. Partly, it is state law regarding the powers of the districts. Partly it is unsorted-out formulations of "beneficial use".

(7) Data and information gaps: Part of the problem is that districts and farmers do not know how much water they use. Another problem is less-than-sound knowledge of the effects of conservation on return flow users, fish and wildlife and other "third-party" interests.

Some proposals for reform

Q: Are there some steps that can be taken to encourage efficient conservation among districts and their farmers?

A: Yes. The encouragement of water conservation by water districts is a subject that touches more than water policy. It goes to other issues we are discussing at this meeting, in particular, issues of governance of the districts and values that westerners place in water. These are beyond this paper. Nonetheless, I can summarize a few steps that all levels of government might take that would appear to promote efficient conservation short of reaching the bigger issues. In summary fashion, they are:

1. I would start, first, with clarifications to state policy. States should consider clarifying their water law to assure that conservation and transfer of agricultural water (at least by the districts) is a beneficial use, subject to limitations to avoid environmental damage (such as cutting down phreatophytes, drying up wetlands etc.). Transfers of conserved water should be lawful, as long as no other water rights' holder is injured. And any forfeiture or abandonment provisions in state law that might render district or farmers vulnerable to the loss of water rights upon conservation should be set aside. In addition, states might attempt to overcome institutional resistance to conservation by requiring districts that are political subdivisions of the state to review their policies to ascertain whether they unnecessarily discourage conservation. (This step would be politically difficult in many western states.) Finally, states might entertain the notion of guiding municipalities seeking to augment water supplies through transfers of agricultural water to look to conserved water rather than wholesale purchases of water rights which dry up whole areas.

2. Districts should consider the use of inverted block rate structures for the sale of water to their farmers. Focusing on rate structures rather than rates is a way to send a price

signal without necessarily raising more than average-cost-based revenue requirements. One way of designing inverted blocks (among several that appear promising) is by pricing that amount of water needed to meet crop ET plus leaching equal to a districts' average cost of water. All water above that amount would be priced to reflect some understandable concept of the opportunity cost of water that is not really needed to grow the crops. Implementation of this type of rate design requires metering and information regarding the crops a particular farmer grows. Absent an internal problem in the district, like drainage, or amendment of state transfer laws to permit districts to transfer conserved water at value, there may be little support for inverted block rates. Districts can also lower "use it or lose it" policies they apply in the allocation of water.

3. The bureau can help as follows: (a) It could abandon federal interpretations of the meaning of "beneficial use" and "appurtenance", as mentioned in section 8 of the Reclamation Act. (This does put a burden on the states to get their act together in this area as well.); (b) It needs to let market forces gradually make inroads into the allocation of water it provides, thus following its own 1988 Water Marketing Policy Statement; (c) It needs to step up its assistance to districts and growers in the conservation area, not through regulations (which may not work where the bureau is concerned), but through information and technical assistance; and (d) It should take steps to make the reclamation-law rules-of-the-road clear as they bear on conservation and transfer of conserved water provided by the bureau. The Water Marketing Policy Statement and follow-up Criteria and Guidance are a good start, but more clarification is needed.

IRRIGATION DISTRICTS AND WATER QUALITY

John H. Davidson*

Introduction

We associate irrigation districts with water pollution control for the same reason that we associate them with the issues of water transfer and conservation: The districts have the water! When there are water controversies of any type in the American West, it is inevitable that irrigation districts or related forms of water distribution organizations will be principal players, and central to any useful resolution. Mr. Bushong's research into the recent censuses made this point clearly.¹⁵ To the extent that irrigation contributes to water pollution, irrigation districts must be involved in the solution of the problem.

WATER POLLUTION AND AGRICULTURAL RUNOFF: THE NONPOINT SOURCE

In its *1986 National Water Quality Inventory*, the United States Environmental Protection Agency stated:

* Professor of Law, University of South Dakota School of Law.

¹⁵ Bushong, "Introduction to Irrigation Districts," Natural Resources Law Center (Nov. 1990).

Which sources of pollution are more significant? Until the last decade or so, pollution control experts might have responded automatically that point sources such as industries and sewage treatment plants were the major contributors of pollution. After all, sewage outfalls, industrial pipes, and plumes of pollution can be easily identified as responsible for poor, often drastically degraded, water quality conditions. But as pollution control efforts were initiated in the 1960s and 1970s to attack these point sources, it became evident that nonpoint sources--more difficult to track and identify--were also major causes of water quality problems.¹⁶

According to that Report, sixteen (16) states identified control of nonpoint sources as an issue of special concern. Thirty-three (33) states reported nonpoint sources as a major problem, and fourteen (14) reported them to be a moderate problem. By far the most common nonpoint source reported by the States in 1986 was agricultural runoff--forty-seven (47) states listed agricultural runoff as the leading source of nonpoint source pollution.¹⁷ Agriculture was reported as the primary pollutant source for sixty-four percent (64%) of affected river miles, fifty-seven percent (57%) of affected lake acres, and nineteen percent (19%) of affected estuarine acres.¹⁸

In his letter transmitting the *1988 National Water Quality Control Inventory*, Administrator Reilly states:

The message presented by the States in these reports is that many point source-related surface water-quality problems, such as bacteria and oxygen-demanding materials discharged by sewage treatment plants appear to be diminishing as a result of pollution control programs. At the same time, the pollution problems that are most difficult to assess and control--e.g., sedimentation,

¹⁶ Office of Water, United States Environmental Protection Agency, "National Water Quality Inventory: 1986 Report to Congress" 14 (EPA-440/4-87-008, Nov. 1987).

¹⁷ *Id.* at 81.

¹⁸ *Id.* at 82.

nutrient enrichment, polluted runoff from farmlands, and toxic contamination of fish tissue and sediments--are becoming more evident.

... The leading causes of pollution cited by the States in impaired rivers and lakes are siltation and nutrients. . . . Agricultural activities are the most extensively reported source of pollution in rivers and lakes.¹⁹

Again in 1988 agriculture is the principal source of "major" pollution impacts--cited as responsible for nearly eighteen percent (18%) of all impaired river miles, a figure that is more than double the number attributable to the next source. Agriculture also is cited as having at least a "moderate" polluting impact on forty percent (40%) of all impaired river miles.²⁰

This paper is not the place for a lengthy recitation of facts in support of the general proposition that agriculture is a major contributor of pollutants to water in the United States. Suffice it that there is a great deal of factual support available,²¹ and that agriculture is the remaining major unregulated source of water pollutants.²²

¹⁹ Office of Water, United States Environmental Protection Agency, National Water Quality Inventory: 1988 Report to Congress i (EPA 440-4-90-003, April 1990).

²⁰ *Id.* at 7.

²¹ Office of Water Program Operations, United States Environmental Protection Agency, "Report to Congress: Nonpoint Source Pollution in the United States" (1984) [hereinafter NPS Report]; P. Thompson, "Poison Runoff: A Guide to State and Local Control of Nonpoint Source Water Pollution" (Natural Resources Defense Council 1989); Gould, "Agriculture, Nonpoint Source Pollution, and Federal Law," 23 *U.C. Davis L. Rev.* 461 (1990); Mandelker, "Controlling Nonpoint Source Water Pollution: Can It Be Done?," 65 *Chi-Kent L. Rev.* 479 (1989). See generally V. Novotny & G. Chesters, *Handbook of Nonpoint Pollution* (1981).

²² Offutt, "Agriculture's Role in Protecting Water Quality," *J. Soil & Water Conservation* (Jan.-Feb. 1990).

IRRIGATION AND WATER POLLUTION

Of course, to report that agriculture is a principal source of water pollution is not to indict western irrigation, let alone our irrigation districts. One shortcoming of the several EPA reports just cited is that they fail to distinguish agricultural runoff and irrigation return flows. Without question, a significant share of runoff occurs from dryland farming in humid regions, especially the corn belt. Despite this there is reason to attribute serious water pollution to irrigation practices. In 1984, the EPA reported:

While irrigated farming, too, is a source of sediment, nutrients, and pesticides, it also causes special agricultural pollution problems. Salts and other minerals are carried to water courses by irrigation return flows and to ground water resources by percolation through soil and rock layers. The Soil Conservation Services (SCS) estimates that half of the 90 to 100 million tons of salt delivered annually to streams is from agriculture. This can make a significant contribution to salinity downstream, which affects aquatic habitat and downstream water users at great cost.²³

Most western irrigation states that reported to EPA for the 1988 Inventory cited agriculture as a principal pollution source.²⁴

²³ See NPS Report, *supra*, at 2-9, citing U.S. Dep't of Agriculture, "RCA Potential Problem Area II Water Quality: Problem Statement and Objective Determination" (July 1979).

²⁴ Office of Water, United States Environmental Protection Agency, "National Water Quality Inventory: 1988 Report to Congress" 8-9 (1990); and see Economic Research Service, USDA, "Irrigation in the United States," NTIS 85-195568.

Although water pollution problems associated with irrigation have been with us as long as irrigation itself,²⁵ the issue obtained currency in 1985 when the Sacramento Bee published a series of dramatic stories reporting selenium poisonings in California's Kesterson Wildlife Refuge and South Dakota's Bad River.²⁶ That story, which will be familiar to most interested persons, served to accent the connection between irrigation and water pollution. Additionally, a report of the National Research Council titled *Irrigation-Induced Water Quality Problems* was prepared in direct response to the Kesterson crisis and describes just how it is that this general problem develops.²⁷ It is essential reading for everyone interested in the issue.

REGULATION OF IRRIGATION RETURN FLOWS UNDER THE CLEAN WATER ACT

The federal Clean Water Act (CWA)²⁸ now exempts irrigation return flows from direct regulation, but this was not originally the case. The 1972 legislation cast irrigation return flows

²⁵ See Young & Horner, "Irrigated Agriculture and Mineralized Water," in National Center for Food and Agricultural Policy, *Resources for the Future, "Agriculture and the Environment"* 77-78 (T. Phipps, P. Grosson & K. Price eds. 1986) where we are reminded that the breakdown of a number of irrigation-based societies, including the Anasazi and those in the Tigris-Euphrates and the Indus basins, is attributable to a gradual decline in productivity caused by salinization and waterlogging. See E. Hyams, *Soil and Civilization* (1952, paperback ed. 1976).

²⁶ Harris & Morris, "Conspiracy of Silence: Toxic Chemical Threatens West," *Sacramento Bee* (Sept. 8-10, 1985).

²⁷ Commission on Irrigation-Induced Water Quality Problems, Water Science and Technology Board, National Research Council, "Irrigation-Induced Water Quality Problems: What Can be Learned from the San Joaquin Valley Experience" 37-41 (1989) [hereinafter NRC Irrigation Report]. Another excellent background source is Hertz, "Federal Law, Irrigation and Water Pollution," 22 *S.D.L. Rev.* 553 (1977).

²⁸ Enacted in 1972 as the Federal Water Pollution Control Amendments (FWPCA).

as point sources, causing them, therefore, to be subject to direct regulation. The early regulations of the United States Environmental Protection Agency stated that "[w]hen discharges from irrigation ditches result from the controlled application of water by any person, that pollution is considered a point source."²⁹ The EPA, seeing itself as burdened with an impossibly large administrative task, attempted to limit point source regulation to irrigators whose return flow was from more than 3000 contiguous acres or 3000 non-contiguous acres which used the same drainage system.³⁰ This exemption of "small" irrigators seemed reasonable to EPA since the land serviced by nearly 1100 irrigation entities (mostly irrigation districts), each of which provided water to 3000 or more acres, comprised eighty percent of all land under irrigation.³¹ Shortly afterwards, however, a federal district court invalidated the regulations which had sought to exempt whole categories of point sources.³² EPA's response was then to limit the statutory definition of "surface water" to mean "water that flows exclusively across the surface of land from the point of application to the point of discharge."³³ The effect was that water that percolated into the ground and appears later, bypass water, and tile drainage were no longer included in the EPA definition of irrigation return flow.³⁴

²⁹ 41 Fed. Reg. 7,964 (1976).

³⁰ Hertz, 22 *S.D.L. Rev.* at 569.

³¹ *Id.*, citing 38 Fed. Reg. 18,001 (1973).

³² *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369 (D.C. Cir. 1977), *aff'g* *NRDC v. Train*, 396 F. Supp. 1393 (D.D.C. 1975).

³³ 41 Fed. Reg. 28,496 (1976).

³⁴ Hertz, 22 *S.D.L. Rev.* at 571.

EPA's resistance to the direct regulation of irrigators is summarized by the following quote from a 1977 statement:

The 1973 decision to exclude most irrigation flow from the NPDES permit program was based on two fundamental reasons. First, EPA was faced with issuing approximately 70,000 NPDES permits to industrial and municipal facilities. Since there are approximately 300,000 to 500,000 irrigators in the country, the additional administrative burden of issuing individual permits to irrigators seemed overwhelming.

Second, it was clear that the program for developing nationally-applicable effluent guidelines was inappropriate to the geographical variations inherent in irrigation activities. These effluent guidelines, translated into effluent limitations in individual permits, are the key to pollution control for municipal and industrial point sources under the Federal Water Pollution Control Act.

Given these elements of administrative infeasibility and technical limitations, the 1973 amendments excluded the vast majority of irrigators from the NPDES permit program. The few permits issued to large irrigators with 3000 or more contiguous acres of land under the 1973 regulations contained only monitoring requirements. Many of these permits are still tied up in adjudicatory hearings contesting the provisions of the permits.³⁵

Shortly after the above was written, Congress eased EPA's pain by prohibiting it from directly or indirectly requiring any state to subject return flows to a permit program.³⁶

In the broader scheme of the CWA, however, irrigators and special water districts must be accounted for. The goal of the CWA is "to restore and maintain the chemical, physical and biological integrity of the Nation's waters . . . [and] that discharge of pollutants into the navigable waters be eliminated."³⁷ Although this is a general (and perhaps unattainable) goal, it does offer a background to the general issue: assuming that irrigation return flows are

³⁵ *Id.* at 574 n.118.

³⁶ 33 U.S.C.A. § 1342(l)(1).

³⁷ 33 U.S.C.A. § 1251(a).

seriously polluting our nation's waters, whether and by what means the problem shall be corrected. For the most part Congress chooses to control serious pollution problems by placing liability with those in control of the pollutants being discharged.³⁸ Although irrigation return flows are exempted from the statutory definition of point source, it is unlikely as a matter of policy that Congress will deviate from the general principle of placing responsibility with those who control the pollutants being discharged.³⁹

There are examples of situations where Congress has decided to place the burden of pollution control on other than those in control of the pollution being discharged. One such example is municipal waste water where Congress decided to make construction grants rather than require local governments to bear the full financial burden of meeting water quality goals. Another example is agriculture, where there exists a long history of direct federal financing of necessary remedial measures for the excesses of American agriculture. In the drought and depression years of the 1930s, excessive and improper farming practices had laid to waste huge acreages, and Congress, under the heading of "conservation," picked up the tab.⁴⁰ The approach of the conservation movement was to encourage voluntary remediation by landowners who would be given expert advice and direct financial assistance. When Congress enacted clean

³⁸ See generally W. Rodgers, Jr., 2 *Environmental Law: Air & Water* 150 (1986).

³⁹ See, e.g., *Friends of Sakonnet v. Dutra*, 738 F. Supp. 623 (D.R.I. 1990).

⁴⁰ In C. Meine, *Aldo Leopold: His Life and Work* 321 (1988), Leopold's opposition to New Deal expenditures for soil conservation is noted. He felt that wholesale public expenditures amounted to a taking over, by the taxpaying public at large, of the bills incurred by the private landowner who abuses land: "Abuse is no longer merely a question of depleting a capital asset, but of actually creating a cash liability against the taxpayer." As Meine summarized Leopold's position, "the environmental chickens . . . were coming home to roost on the taxpayer's doorstep."

water legislation in 1972, it was aware that agricultural runoff was a major source of water pollution and that the goals of the law would not be met unless the problem was addressed. The form finally given the problem in the statute had the effect of defining the inevitable tension between the traditional conservationist approach to agricultural runoff and the command and control system of effluent control advocated by the vigorous environmental movement. Since 1972 the history of the "nonpoint source" pollution problem has actually been the slow but forceful competition between the conservationist's approach and the environmentalist's approach. Shall efforts to get agriculture to reduce its water pollution be voluntary, subsidized, and locally controlled? Or shall agriculture be subjected to the same regulatory regime that has been applied to industry, commerce, and our municipalities? In many respects, the policy discussion of how irrigation districts will be asked to address water quality problem requires a rework of the conservation versus environment debate.

IMPEDIMENTS TO CONTROLLING POLLUTION FROM IRRIGATION

Numerous arguments have been put forth describing why it is difficult to hold irrigators directly liable for water pollution, and these will be catalogued briefly in this section.

1. As mentioned in the previous section, the EPA believes that the number of irrigators is so large that it is impractical to bring them under a regime of direct regulation, such as the NPDES permit system.

2. A second reason, also urged early on by EPA, is that national uniform effluent limitations are inappropriate to irrigation, which is subject to local geographical variations.

3. Irrigation return flows typically have percolated into the ground and reappeared on the surface elsewhere, following tile or natural drainage. Some argue that the resulting commingled waters are not the surface waters that are the concern of the CWA.

4. Western irrigation economies are dependent upon a system of federal subsidies and lack the financial resources and incentives to address water pollution problems.⁴¹ Most importantly, since the cost of water is held at artificially low levels by the subsidy system, there is thus no incentive to save. As the NRC Irrigation Report so aptly stated:

The economic and legal factors determining water use in the West have created an immense irony. Water is in many ways the most valuable commodity in the arid West and the basis of much of its wealth. Yet because it is sold at artificially low prices, farmers often treat water as if it were a free commodity.⁴²

5. A lack of coordinated planning is often a feature of agricultural regions. Within a single county there may be city and county government, numerous irrigation districts, not to mention flood control, rural water, and conservation districts. In addition, several federal (BuRec, Fish & Wildlife, EPA, ASCS, and SCS) and state (water rights, water quality) agencies may have jurisdiction.⁴³

⁴¹ NRC Irrigation Report at 55-56.

⁴² Id. at 104-05.

⁴³ Id. at 105.

6. State water laws frequently are at odds with practices that might cause irrigators to reduce pollution. One frequently cited example is the state doctrine that denies the water right holder the benefit of conservation practices. Another example is doctrine that inhibits the free transfer of water.⁴⁴

SOME SUGGESTED APPROACHES

Charge water at full market price

If irrigators are required to pay the full cost of water, they will have a real incentive to use the water more efficiently.⁴⁵

Taxes

Create special drainage taxes on pesticides, water, and fertilizer, or impose higher property taxes on problem lands. The funds could be used to finance pollution reduction activities.⁴⁶

⁴⁴ Id. at 66-67.

⁴⁵ Id. at 103-04.

⁴⁶ Id. at 104-05.

Subsidies

Government pays for the necessary improvements. This approach is the most common one in agriculture.⁴⁷

Facilitate water transfers

Irrigators should be free to sell their water if the result is not harmful to other irrigators.⁴⁸

Reward water conservation

State water laws should create incentives to irrigators to adopt water conserving practices. For example, an irrigator who conserves a portion of its water right should be allowed to sell that water.

Involve special water districts in pollution control

Irrigation and other special districts are well suited to the unique function of water pollution control. Organized locally and often along the lines of natural watersheds, they are, by purpose and experience, the experts in local water management. Although their potential to

⁴⁷ Id. at 105.

⁴⁸ Id. at 106.

solve runoff problems is no doubt limited and imperfect, it seems to compare well with that of most existing governmental entities.

Districts have the capacity to bring economies of scale to pollution control and to mitigate the effect of the argument that farmers, as "price-takers" in the marketplace, are unable to pass the cost of pollution control regulation on to consumers. Districts can develop systematic pollution control measures for all lands within their jurisdiction, just as they did with water delivery plans. Such plans can be implemented in accordance with their corporate financial ability. The cost of pollution control can then be spread across all the landowners in the district, with a greater share being assumed by landowners who receive a proportionally larger share of district benefits. In addition, such districts can qualify to issue tax-exempt financial instruments and receive subsidized loans from the Farmers Home Administration as well as state government. In fact, irrigation districts are designed to finance local water management improvements efficiently and fairly.

Redefine point sources under the CWA to include irrigation return flows

As the events at Kesterson show, a high price has been paid for our failure to directly regulate irrigation return flows. It may now be time to do the obvious thing and return to the 1972 Act and include irrigation in the NPDES system.

Within the catalog of legal nonpoint sources there are some that, due to their natural circumstances, are susceptible to ready control; control of other sources remains elusive. An

example of the former is irrigation return flow, which, although a legal nonpoint source, enters surface water through discrete pipes and ditches and is subject to understood pollution control practices. An example of the latter is the runoff from unusual spring rains and snow melt. Still others, such as runoff from acid rain, require a unique control strategy. Thus, not all nonpoint sources are equal, and the controls available for application to one may be entirely impractical when applied to another.⁴⁹ Rodgers points out that the legislative history of the 1972 clean water legislation strongly supports a position that the point-nonpoint distinction can be explained as "singling out those candidates suitable for control at the source."⁵⁰ In Rodgers' words, "[p]ermit holders should include polluters from whom changes fairly can be expected."⁵¹

Despite its statements in support of the idea that all "controllable" sources should be point sources, Congress chose to exempt a number of "controllable" sources from regulation. These are sources that were designated nonpoint by Congress purely on policy grounds, and *not* because they fail to discharge effluent into surface waters at a particular point, nor because the polluter cannot control the discharge.

Redefinition from nonpoint to point source was recently accomplished in the case of stormwater discharges. In 1987, EPA was instructed by Congress to develop a phased approach to regulating stormwater discharges under the NPDES permit system.⁵² In addition, individual

⁴⁹ W. Rodgers, Jr., 2 *Environmental Law: Air and Water* 148-49 (1986).

⁵⁰ *Id.* at 150-53.

⁵¹ *Id.* at 152.

⁵² Clean Water Act of 1987, § 402(p); 33 U.S.C.A. § 1342(p).

states may redefine point source. Although this has not been done in the case of irrigation return flows, some states require permits for discharges into groundwater.

Require irrigation districts to apply for NPDES permits

As already mentioned, special districts may be well-designed to solve the water quality problems that are generated within their borders. The most direct method to force them to the task is to make them apply for water pollution discharge permits under the CWA.

As also mentioned, one argument frequently used in opposition to regulating irrigators is that it is impossible to develop uniform effluent limitations for irrigation systems. This argument had considerable merit during the mid-1970s, when EPA was still developing its experience with effluent limitations and had most of its attention on the industrial sector. But since then the concept of Best Management Practices (BMPs) has developed to a point where it is available to meet this need. BMPs are described by federal regulations in a variety of ways, but ultimately they come down to the correct way of doing things on a particular piece of ground.⁵³ The concept suggests the necessity for reasonableness and balancing. BMPs incorporate a recognition that nonpoint source pollution can rarely be addressed by the use of universal numeric standards.

⁵³ The development of BMPs is laid out in Davidson, "The 1987 Nonpoint Source Pollution Amendments and State Progress Under the New Program," *Water Quality Control: Integrating Beneficial Use and Environmental Protection*, Natural Resources Law Center, Univ. of Colorado School of Law (1988).

The concept of BMPs recognizes implicitly that uniform or general control standards cannot be used to regulate land management. Instead, local controls are needed which can consider climate, geology, and cultural practices, and develop flexible remedies. Landowner-controlled districts can be subjected to district performance standards by, for example, being required to reduce the flow of sediments into a river or lake by a specific percentage. How such a result is to be achieved can be left to the managers who know not only the land in the district, but also its farmers and its management history. That special water districts are usually organized along watershed lines is both apparent and basic. Political boundaries are irrelevant to flowing water, and whatever entity is ultimately assigned the task of controlling nonpoint pollution will necessarily have authority to operate throughout the relevant watershed.

Opposition to direct regulation of irrigation has also been based upon the argument that the number of potential permittees is so large that administration would be impractical. This concern may lose its force if irrigation districts are the point of regulation. A permit need only be required at the points where the irrigation district discharges into a watercourse. One district may combine hundreds of farm operations into one system of outlets and bring them under a single permit. How the district chooses to meet permit requirements can be addressed flexibly by the people who best know the land--the district members. By demanding performance, but leaving the solution to the district members, it may be possible to achieve some middle ground between voluntariness and coercion.

Water conservation plans

The Reclamation Reform Act of 1982 contains this provision:

Each district that has entered into a repayment contract or water service contract pursuant to Federal reclamation law . . . , shall develop a water conservation plan which shall contain definite goals, appropriate water conservation measures, and a time schedule for meeting the water conservation objectives.⁵⁴

Although aimed at the problem of water waste, the close connection between water conservation and pollution reduction makes this statutory provision of some interest here. Were BuRec to promulgate rules in which the elements of a water conservation plan were listed and defined, and were that list to include the reduction of water pollution as one of the "definite goals," some progress could be made. Of course, this provision does not appear to be enforceable directly.

Eliminate dual agricultural subsidies

Reference has been made to the fact that the price of reclamation water is heavily subsidized, resulting in excessive and improvident water use. There is more to it than that, as the following report in the November 12, 1990, issue of *The Food & Fiber Letter*, an agribusiness newsletter, so aptly describes:

In California and 16 other western states, some farmers are subsidized to cut production of the commodities they irrigate with subsidized water to increase yields and thus production. It's been

⁵⁴ 43 U.S.C. § 390jj.

an historical anomaly, but one that the Interior Department's Office of Inspector General wants stopped, for a saving of at least \$66 million a year. The \$66 million was "the most conservative estimate of the irrigation subsidy" the agency had available for its review.

Interior's sleuths looked at eight farms in California and Washington that received \$2.1 million in irrigation benefits in 1986 and another \$4.5 million from USDA to limit production. Two mostly cotton farms, each several thousand acres in the San Luis Unit of the reclamation bureau's Central Valley, got \$5.5 million of the \$6.6 million total.

The inspector general's report noted that Interior policy officials have not supported efforts to do away with the dual subsidy or submitted their own proposals to Congress, arguing that its elimination could create financial hardships for some farmers while not significantly reducing subsidy costs. We don't expect Interior to jump on the end-the-subsidy bandwagon quickly, but over time this is another [benefit] to large producers destined for oblivion.

Condition subsidies

The 1985 Farm Bill introduced "conservation compliance,"⁵⁵ which requires that farms with highly erodible land must have a soil conservation plan by January 1, 1990, in order to continue to obtain farm commodity benefits. These farms must be in actual compliance with the plan by January 1, 1995. The conservation plan is developed locally and reflects the unique needs and problems of individual farms. Taking into account such variables as climate, soil type, slope, types of crops and livestock, and drainage, the plan prescribes a set of improvements and land use practices intended to meet soil erosion control goals. Although compliance applies only to farms with highly erodible soils, and applies only to farms which are receiving farm program subsidies, the program represents an approach that has merit: those who receive subsidies to support their production should not be allowed to impose the cost of polluted water on society at large.

⁵⁵ 16 U.S.C. §§ 3801-56 (Supp. 1986).

Expand the statutory duties of irrigation districts

To involve irrigation districts more directly in water conservation and pollution control inevitably suggests a need to revise state enabling laws. Irrigation districts have always shared attributes of both public and private enterprise. They are public corporations because they are created under the authority of the state and are intended to achieve objectives that are believed to be in the public interest. They are private in that they enhance the value of the private capital of the landowner-irrigators, who also control the corporation. As Mr. Justice Stewart wrote in 1981: "[T]hough the state legislature has allowed water districts to become nominal public entities in order to obtain inexpensive bond financing, the districts remain essential business enterprises, created by and chiefly benefiting a specific group of landowners."⁵⁶ Perhaps a proposed revision of the basic format provided by the Wright Act will be an outgrowth of the Boulder conference.⁵⁷

The possibilities provided by the 1990 Farm Bill

Numerous provisions in the Conservation Title of the Farm Bill offer opportunities for irrigators and districts seeking to reduce water pollution. While a full catalog will not be provided here, some examples are noteworthy. The 1990 Bill initiates a "Water Quality Incentives Program" to encourage farmers to prevent pollution of surface and ground water.

⁵⁶ Ball v. James, 451 U.S. 355, 367 (1981).

⁵⁷ In recent years a variety of special districts focusing on environmental control have been authorized by state legislatures.

The policy statement is that "water quality protection, including source reduction of agricultural pollutants, henceforth shall be an important goal of the programs and policies of the Department of Agriculture." The measure is said to be a response to mounting evidence that source reduction can often be achieved through adjustments in farm management without taking entire fields out of production or reducing crop yields. Participants in the program may receive up to \$5,000 in annual incentive payments and cost-share assistance for implementation of water quality management plans approved by USDA. The plans are to specify pollution abatement measures to be employed on participating farms and are for terms of three to five years. A maximum of 10 million acres of agricultural land may enroll.

The new Farm Bill also obligates USDA to develop and implement water quality protection plans upon the request of any farmer.

The Conservation Reserve Program has been extended, making several new categories of environmentally sensitive lands eligible for the program.

Reconsider reasonable use

One way to reduce consumptive use by specific irrigators may be available through a redefinition of reasonable use, the doctrine whereby a landowner's water rights are limited to

the amount necessary for some reasonable or beneficial purpose in connection with the land to which it is applied.⁵⁸

Water pollution control areas

Most western states have enacted, through legislation or regulation, institutional vehicles for responding to water *shortages*, and these may provide models. One ready example is offered by South Dakota's Water Use Control Area legislation.⁵⁹ The state's chief engineer or at least fifty percent of the landowners in the area may petition the state's Water Management Board for creation of a Water Use Control Area in order to manage water that is in short supply. Creation of the area may be approved if the Board finds that it "is in the public interest, is necessary to *equitably apportion* the available water supplies for use among the water rights holders and is feasible."⁶⁰ Upon approval, a water master is appointed who is authorized to prepare an order which sets out a management plan. The engineer is given broad authority to reorder water use in order to solve the problem. Although the statute has not been the subject of judicial interpretation, it appears on its face to authorize the re-ordering of water rights, reduction of water rights and, perhaps, abandonment of prior appropriation in favor of correlative rights ("is necessary to *equitably apportion*").

⁵⁸ DuMars, "What in the World is Kesterson: Agricultural Return Flows Degrading Water Quality," 35 *Rocky Mt. Min. L. Inst.* 24-1 (1989).

⁵⁹ S.D. Codified L. §§ 46-10A-1 to -16 (1987 & Supp. 1990).

⁶⁰ S.D. Codified L. § 46-10A-5 (1987).

A format like the South Dakota Water Use Control Area may be transferable to the problem of agricultural runoff, especially in states such as South Dakota, where water rights and water quality permits are within the jurisdiction of a single administrative board.

SOME THOUGHTS ON GOVERNING SPECIAL DISTRICTS

Tim De Young*

I grew up at the southern edge of the Los Angeles urban sprawl in Orange County, California. To the north, expanses of orange and lemon groves had been replaced by endless stretches of tract homes, shopping centers, and the like. But to the south, there were still miles of groves, occasional truck farms and vineyards, and most importantly, the rolling golden hills of California. Most of southern Orange County had been held in large tracts since Spanish colonial times. Mission Viejo, Laguna Niguel, and the O'Neil and Irvine Ranches covered thousands of acres. Eventually, as is the custom in California, these ranches were subdivided and became suburban communities. While my story should be familiar, the use of irrigation districts, technically California Water Districts, as vehicles for south Orange County's development, however, is a largely untold story.

The Irvine, Los Alisos, Moulton Niguel Water Districts, for example, were formed and governed in the 1950s by large ranch corporations.⁶¹ Their control over district policy was assured by a weighted voting system for the selection of boards of directors, usually one vote

* Attorney, Modrall, Sperling, Roehl, Harris & Sisk, P.A., Albuquerque, New Mexico.

⁶¹ The purpose of this paper is to provoke further discussion of special district governance rather than make an empirical argument in support of any position. Consequently, citations to authority are largely omitted. The districts ostensibly were formed to serve an agricultural clientele, but as the orange groves gave way to development, the districts began to provide water and sanitation services to domestic and industrial users.

assured by a weighted voting system for the selection of boards of directors, usually one vote for each \$100 of assessed property value. Much like a closely held corporation, the weighted voting system assured control by vested interests.

Of course, building sewage treatment plants and municipal water delivery systems was an expensive proposition, but one which the districts readily assumed. To make a long story short, the ranchers (developers) used the districts to build a significant portion of the infrastructure necessary for their planned communities and industrial parks. The plan was simple and legal. Tax free general obligation or revenue bonds encumbered the districts with long-term debt. District policy often was to defer repayment of the debt as long as possible so that the developers would never shoulder the burden of repayment. Residents of the new suburbs eventually were able to get legislation passed whereby the weighted voting system automatically terminated once 50,000 people lived within the district boundaries. But by then, it was too late because the district's directors/developers had made the key financial and growth decisions.

In northern New Mexico, near my new home, acequias or community ditch associations are the dominant agencies of irrigation. Stanley Crawford's Mayordomo (UNM Press, 1988) weaves a rich tapestry of life on a community ditch and should be read by anyone interested in irrigation communities. At a recent annual meeting of his acequia, Crawford tells how two acequia commissioners recently revised the acequia bylaws to conform to the specifications of the Office of the State Engineer, whose approval was necessary for the acequia to receive a combined state and federal grant. Crawford observes:

The ditch probably operated without written bylaws for generations, if not hundreds of years, until about 1974 when Jerry Munster and I, then commissioners, cooked up a set to qualify for emergency aid from the federal government in order to relocate the dam a tenth of a mile downstream to its current and less satisfactory location The bylaws have never been read through by anyone other than lawyers in the State Engineer Office, whose files may well be filled with a thousand other such documents, all perhaps carefully inspected by the state, all perhaps as equally ignored in practice as ours.

Crawford goes on to note that a State Engineer official had objected to the date of the annual meeting and to the acequia's voting by membership, that is one person, one vote, instead of by shares, such as one vote per irrigated acre. Crawford describes the locals' reaction:

. . . it is immediately apparent from a flurry of muttered remarks that no one here this afternoon approves of the state-imposed changes. I suggest that we officially accept them while, in fact, continuing to do things the way we always have, particularly the vote by membership. Voting by shares as in a corporation would give the larger landowners more votes, an idea that appears to be offensive to all present--but of course none of our 2 (share) landowners . . . are here today. Someone points out that once we get the (project) built and paid for, then we can change the bylaws back the way they were before, an admirable solution.

As an aside, New Mexico acequias traditionally have used a weighted voting system, but the prevalence of such systems today apparently has not been studied.

Throughout Crawford's book, one is struck both by the lack of participation by those served by the ditch and the endless hours of thankless work required of Crawford as mayordomo. Crawford explains:

But given the nature of acequias, small associations of neighbors and therefore often of relatives offering at best the slimmest rewards, if any, to the politically ambitious, it is rare to find any one acequia tied down by any one individual or family or faction for more than a few years. Parciantes will become heated up for a season or two but after a time they will lose interest and drift on to something more prestigious or lucrative, or to a group that involves dealing with people other than neighbors and relations, and leave the ditch to be run by those who actually use the water. . . . Most years there will be three or four parciantes willing to serve

as commissioners and mayordomo, and at least one and often two of them are likely to be halfway responsible.

In New Mexico's acequias, we see both how traditional local irrigation districts used to work and how they now struggle to continue. They fiercely guard their autonomy, distrust the state but are willing to accept their benefits, and apathy by most farmers is the rule, rather than the exception.

TWO TYPES OF IRRIGATION DISTRICT

Irrigation districts in New Mexico and California perhaps represent two ends of the irrigation district continuum. Despite their differences, both represent a community of interests. In Crawford's words, the acequia is "bound together .-.by a narrow channel of water that flows through everyone's backyard." Notwithstanding the arrival of "back to the basics" newcomers who have replaced sons and daughters who have fled to urban centers, the community stays much the same. In the Orange County water districts, the community of interest was much smaller and less diverse, limited to surprisingly few developers. Eventually, the community became larger and more diverse through urbanization.

Second, all districts seem to share a parochial perspective to some extent. Its an "us versus them" mentality typical of locally based groups and institutions. Otherwise, the diversity of irrigation districts challenges even the careful observer. Rather than be overwhelmed by the multitude of district types, district powers, and district styles, let's consider two primary types of irrigation districts. The most predominant type of district might be called special interest or captured districts.

Merrill Goodall, a long time observer of California special districts, calls special interest districts the "preferred public appendages of private interests." Or to paraphrase Justice Stewart in his landmark decision, Ball v. James, 451 U.S. 355 (1981), special purpose districts, created to benefit a specific group of landowners, are nominal public entities formed in order to obtain inexpensive bond financing to accomplish private purposes.

The incredible diversity in special district enabling legislation simply may reflect the diversity of special interest needs. Conservancy districts and California Water Districts are early examples of successful efforts by special interests to modify the Wright Act electoral and financial provisions. More recently, special interests have literally designed the scope and extent of their powers as well as the opportunities for subsidy by forming districts through special legislation. California's Metropolitan Water District and New Mexico's Albuquerque Metropolitan Arroyo and Flood Control Authority ("AMAFCA") are cases in point, but there are examples in each of the western states. In short, a narrow band of economic interest groups formed and dominated special interest districts.

In contrast to special interest districts, some districts represent a community of diverse interests. Community districts include many, but are by no means limited to, mutual ditch and water companies, acequias and California's Municipal Utility Districts. In general, community districts are found in relatively stable rural areas where the need to cooperate led to the formation of some form of collaborative enterprise. Unlike special interest districts, community districts are more governmental in the sense that they represent a diverse array of interests. In

many areas, community districts were the first form of government, but their number, and more importantly their vitality, is declining rapidly.

INSTITUTIONAL DECAY

After formation and over time, special interests and community districts, like all things, change. Crawford's book is also about institutional decay. Crawford, author of four novels and educated at the University of Chicago, the Sorbonne, and Berkeley is a member of an identifiable group of urban refugees who have moved to rural areas in a valiant attempt to preserve the culture of irrigation communities. Although I am just guessing, I would bet that the current directors of the water districts I mentioned in California are not unlike Crawford in some important respects. They are more concerned with management and maintenance of systems that have been built than in devising the system that best reflects the interests of their constituents.

These second generation institutions are not governed, they are managed. Maintenance replaces construction and administration replaces capture. Table 1 represents an attempt to summarize the above. Our job, then, is to fill in the matrix with the type of governing system appropriate to both the type of district and to the district's stage of institutional development.

In special interest districts, democratic election procedures uniformly have failed to elect good directors, although they may be a fairly effective means to remove bad ones. As we noted in our special district workshop several years ago, voter participation tends to be abysmal

Table 1

District Type at Various Stages of Development

	Special Interest District	Community District
STAGE OF INSTITUTIONAL DEVELOPMENT	Formation:	
	Maintenance:	
	Decay:	

DEBUNKING DEMOCRACY

Any discussion of democratic institutions and irrigation districts should at least mention Chief Justice Rehnquist's controversial opinion in Salyer Land Company v. Tulare Lake Basin Water Storage District, 410 U.S. 719 (1974) and the subsequent extension in Ball v. James, *supra*. Although I severely criticized and disagreed with the Ball decision shortly after its announcement, I now see that for perhaps the wrong motives, Justice Rehnquist and the majority were probably right in certain respects. In particular, I admire their courage in rejecting the blind application of our most cherished democratic formula for government: one person, one vote.

in all districts.⁶² If democracy is the rule of the majority, then I fail to see how an election by eight to ten percent of the qualified voters equals or even approximates majority rule. In effect, popular election of board directors is a de facto appointment system. The only real difference between elections and appointive systems is that in the former, appointers become qualified by their voluntary decision to vote whereas in the latter, other criteria are used.

The folly of the Ball and Salyer decisions was the Court's approval of weighted voting, an equally inappropriate method of selection. Weighted voting systems are premised on the corporate principle that control should be allocated in direct proportion to shares or investment. If special interest districts in fact are "essentially business enterprises," then corporate methods of selection may be appropriate. To the extent that districts must represent a diverse community of interests, weighted voting assures unequal representation skewed in favor of wealth and privilege. If one views districts as vehicles for public subsidies, such as subsidies to agriculture in the form of low cost irrigation water, then a weighted voting system similarly assures that the subsidy will be allocated in direct proportion to the wealth of the recipient. While avoiding any pun about potential trickle down effects, we all know that reclamation subsidies were intended to go to small farmers. Weighted voting therefore seems to be directly contradictory to the achievement of this goal. Finally and perhaps most obviously, weighted voting discourages participation as a direct function to the distribution of votes; the more votes controlled by any individual, the less incentive for other voters to participate.

⁶² See Special Water Districts: Challenge for the Future J. Corbridge, ed. (1983).

Shortly after the Ball decision, John Leshy speculated that this case was exemplary of the Supreme Court's "historic deference to state law in creating such political subdivisions." Certainly, there is language supporting this view, but perhaps the majority recognized the failure of democratic processes in governing special districts. Professor Leshy further predicted that the decision "seems to end the matter as far as the federal Constitution is concerned" but will be a matter of concern in the states. A cursory and preliminary review of cases citing Ball indicates that weighted voting and other undemocratic attributes of special districts has not given rise to much litigation, but a few cases have emerged.

The Ninth Circuit Court of Appeals recently revisited the Salt River Project Agricultural Improvement and Power District in Gorenc v. Salt River Project Agr. Imp. & Power, 869 F.2d 503 (1989). In certain respects, the decision is remarkable. An employee of this irrigation district had filed a civil rights suit alleging that the district had terminated his employment under "color of state law." The Court of Appeals held that the district, although designated as a political subdivision under the Arizona Constitution, was not a "state actor." Therefore, civil rights protections are inapplicable to special districts. In explaining the decision, the court noted that the district is "owned and operated by private individual landowners...it is not operated for the benefit of the general public but for the benefit of the private landowners in the district...it only serves a governmental function when it engages in 'the reclamation and irrigation of arid lands, the drainage of water logged lands, and the production of electricity for these purposes.'"

The court conceded that the district could levy property taxes, sell tax-exempt bonds, and exercise eminent domain, and was immune from taxation on the sale of electricity. However, the court quoted Ball to the effect that the district could not enact any general laws governing a person's conduct, provide general governmental services such as schools, street maintenance, or sanitation, impose ad valorem property taxes or sales taxes, and unlike public entities, its employees are allowed to strike under their labor contract. Moreover, the district was not immune from banking laws, exempt from the city's power of eminent domain, or immune from tort liability in the maintenance of its irrigation canals. Overall, this decision solidifies the Ball decision, a decision that in effect allows districts to be chameleons. They affect public colors when it is advantageous to do so, but resort to private camouflage when needed.

Along the same lines, an Arizona Court of Appeals recently held that irrigation district elections are not general elections and thus are not subject to state constitution residency requirements. Porterfield v. Van Boening, 744 P.2d 468 (1987). In this case, Potterfield, a losing candidate for an irrigation district election, brought a suit challenging the district's practice of allowing foreign corporations to vote as landowners in the district. Van Boening in fact would have lost if only residents of Arizona were allowed to vote. The court disallowed Porterfield's challenge on the basis that the voting franchise in irrigation district elections is by its nature based on landownership (read special interest) and is not based on traditional notions underlying a one-person, one-vote principle (read community of diverse interests). Accord People ex rel. Cheyenne Soil Erosion Dist. v. Parker, 118 Colo. 13, 192 P.2d 417 (1948); but see Foster v. Sunnyside Valley Irr. Dist., 687 P.2d 841 (Wash. 1984) (constitutionally qualified

electors significantly affected by district decisions must be given an opportunity to vote). Because special interest districts legally are not governments, there apparently are no constitutional requirements for democratic elections. Are there other compelling reasons for requiring one-person, one-vote systems? I think not.

Advocates of democracy seem to confuse process with outcome. Those who would elect and require democratic elections across the board may argue that there is some inherent value to the democratic process and to this argument, I have no response. But if democracy is being advocated because it produces real advantages in terms of outcomes, then I need to be persuaded. A common argument made for popular elections is that elections provide a mechanism for accountability. The electorate will turn out to oust the rascals or when they are very displeased with district directions, to defeat certain proposals such as bond referenda. This sounds good in theory, but I wonder how often it happens in practice. Not unlike judicial approval elections, special district elections tend to be exercises in ratification rather than a means for oversight or accountability. In the 1990s, I predict that like judges, popular elections of district directors will be considered increasingly inappropriate, especially in special interest districts.

If it is true that most special districts have entered the age of management and maintenance, then the most important function of the directors is to act as a personnel committee for hiring a competent manager. Whether called mayordomo, manager, or chief executive officer, a well governed district must be administratively well managed. One problem with democratic directors in this regard is their tendency to meddle with management.

In the snake shaped Middle Rio Grande Conservancy District, for example, district directors have been elected since the mid-1970s. Prior to that time, directors were appointed by district court judges. In the period from the district's formation in the late 1920s until 1975, the district had relatively few but competent professional managers whereas since 1975, district managers are fired and rehired at an alarming rate. My tentative hypothesis in this regard, then, is that elected boards tend to obstruct rather than assist the professional management of districts.

A MODEST PROPOSAL

Given the problems of apathy and the resultant failure of democratic processes on the one hand and the inherent problems of weighted voting on the other, then what is the solution? While it is laudable to try to increase the political awareness of the electorate, it may not be realistic. Moreover, increased public involvement often increases the difficulties of management both in terms of making essentially administrative decisions and achieving management continuity. After several years of study and thought, I am convinced that some form of appointment works best. Of course, appointive systems are used widely, but little research has documented their relative costs and benefits. However, the rationale for such systems is clear.

Both special interest and community districts increasingly are being called on to be responsive members of the intergovernmental community. Efforts to control nonpoint source

water pollution, increase recreational opportunities, and preserve open space are three areas where districts can play a pivotal role. Because state governments are principally responsible for natural resources management, an elected official at the state level such as the governor or his designee should be allowed to appoint at least some of the directors of each irrigation district. In light of a long tradition of local autonomy in water resources management and the practical need for local knowledge, some of the directors should also be appointed by elected local government officials. Appointment by elected officials probably is required constitutionally and practically, makes appointment somewhat more palatable to true democrats and others afflicted with technocracy phobias. Florida has adopted such a system and perhaps can provide a model for the western states.

Perhaps a majority or popular vote should be required to form either a community or special interest district, but after formation, then appointment or approval voting should be used. In community districts that serve diverse constituents and provide a range of service, community interest may be sufficient to allow for popular elections. But in most cases, districts are one of several governments in an area. Appointed directors enhance the chances for intergovernmental cooperation, whereas elected directors tend to be accountable only to the narrow band of constituents or special interests that they represent.

Admittedly, these ideas and proposals are preliminary and sketchy. I look forward to further discussion of these issues.

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