

Andrew Cohen

WATER, POLITICS & LAND USE

Water Supply and Land Use Planning: Making the Connection

Rampant urban growth lies at the source of some of the most compelling environmental problems of our times. We are becoming only too familiar with the legacies of settling too many people on too small a space with too little planning: gridlocked traffic, bad air, recurrent water shortages, dwindling populations of native plants and animals, and a general degradation of the natural landscape. These concerns have periodically given rise to community-based growth control movements. Although in the past the relationship of water to growth was a taboo subject among water agencies, after six years of drought it is becoming the focus of intense discussion.

In the preceding essay, Mr. Gilbert decries the fragmented nature of the institutional structures that deal with these issues, and the messy complexity that results. We cannot, however, avoid dealing with this complexity. Water supply and urban growth are linked issues and are best addressed by greater interconnections and communication between water and land use agencies. This interaction should take place in a context of

open public discussion and greater public involvement, for ultimately these are issues for the public to decide.

HISTORICAL TIES

Water decisions in California have always been decisions about growth. From the construction of the Los Angeles and Hetch Hetchy Aqueducts in the early part of the century, through the founding of regional water purveyors such as East

Bay Municipal Utility District (EBMUD), San Diego County Water Authority, and Metropolitan Water District of Southern California, to current attempts to transfer water from farms to cities, water agencies have always been at the forefront of growth issues. These agencies set the water management strategies and water pricing structures that direct or promote growth. Water agency officials participate in coalitions framing regional growth policies, and many of them have strong ties to the development-oriented business and political interests in their communities. The water industry itself has traditionally been a meeting ground for growth interests, including developers and realtors, builders and contractors, engineers and consultants, lawyers and bankers, and a varied assortment of elected officials promoting development. To say that water agencies have been tied to the forces of growth is more than an assertion of fact; it is the fundamental historical truism of California water policy.

Nevertheless, in official policy and planning, the connection between water and growth has generally been ignored or denied. Without an explicit, public mechanism for ensuring that water planning decisions and development approvals are consistent with each other, these decisions are left to the "back-door" route of unofficial, individual connections—with the result, all too common in California's history, of "build first and find the water later." The recent extreme levels of water rationing in some urban areas are, at least in part, a consequence of this approach.

MAKING THE CONNECTION

Bridging the gap between water and development planning requires work on both sides—from the agencies responsible for supplying water, and from cities and counties that are the lead agencies for approving developments. Every urban water agency should be responsible for assessing the impacts of projected growth on its ability to supply its customers. The agency should calculate how many residences and businesses it can supply during a drought without resorting to excessive levels of rationing. It should inform cities and counties of these limits, and avoid commitments to serve beyond them, unless and until it can augment its water supply.



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On the other side, every city or county should ensure that an adequate water supply is available to serve a proposed development before granting approval to that development. When growth is projected to exceed current supply, the city or county should carefully phase development to prevent over-reliance on limited supplies. Where several cities or counties depend on one water agency's limited supply, they should work with the agency to develop a reasonable mechanism for allocating the remaining available supply to the most needed developments.

All of this is common sense, but little of it is commonly done. Even where water agencies have clearly warned of limited water supplies, city councils and county boards have refused to moderate their approval of developments. For example, earlier this year Alameda County Zone 7, the water provider for Livermore Valley, informed the valley's cities and public agencies that their development plans called for considerably more growth than Zone 7 could supply. The cities basically told the water agency to keep quiet and mind its own business—that by merely suggesting there were limits to the water supply, the agency was meddling in growth control. John Marchand, Zone 7 Director, replied that “planning agencies and city councils are empowered to plan growth, but they must be properly informed. We are just putting everyone on notice so they can plan accordingly. Cities don't want it said, but we will not commit to sell water we don't have. It's a very simple idea, but it's something no one wants to hear.” Brazil, “A New E. Bay Water Fight,” *San Francisco Examiner* (Mar. 22, 1992).

That simple idea was incorporated in legislation sponsored by EBMUD and introduced by Assemblymember Dominic Cortese last year. Assembly Bill 455 (1991) (as introduced Feb. 7, 1991) would require lead agencies to determine that a reliable water supply exists before approving a development. This supply could be either water that a local water agency had available, or an alternative supply identified by the lead agency or developer.

Predictably, this bill was strongly opposed by the state's powerful construction and development lobby and, less predictably, by the Governor's Office of Planning and Research. These parties argued, with some inconsistency, that on

the one hand the bill would halt all development in the state, and on the other the bill's goals are already adequately met by existing laws. Letter from Richard Sybert, Director, Governor's Office of Planning and Research, to California Assemblymember Dominic Cortese (Mar. 13, 1992). However, as Zone 7's experience shows, existing laws fail to bridge the gap between supply limitations and the unchecked pace of development.

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THE NEED FOR BETTER PUBLIC PROCESS

Because water supply is so critical to decisions about the future development of communities, water agencies must have a clear and open process for planning and decision making to allow for adequate public involvement and accountability. Unfortunately, California's water agencies have tended to be obscure, inaccessible, and relatively undemocratic. In some agencies board members are appointed rather than elected. In many rural agencies the vote is restricted to landowners, who hold voting power in pro-

portion to the value of their land. Until recent years it was rare for any water agency elections to be seriously contested, if contested at all. Lack of accountability to the public ensures that water decisions continue to be made in the context of long-standing, unofficial ties between water agencies and development interests.

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DEFINING A RELIABLE SUPPLY

Historically, the urban water agency's goal was to provide unlimited amounts of low-cost water to anyone who asked for it, both in wet years and in dry. Anything less—such as having to restrict use during droughts or discourage use by adjusting prices—was considered a sign of failure, and proof of an unreliable supply. Although the 1976–1977 drought taught us that most agencies in California could not conceivably meet this standard, and the last six years of drought forcibly repeated the lesson, most agencies have retained the old definition of reliability.

How an agency defines reliability is important, because that in turn determines how much development it can reasonably serve. A growing community with a fixed water supply will eventually reach a point where adding one more house or business will exceed the definition of reliability. Hooking up that house or business to the system will result in unreliable service for existing customers, and every additional house or business will make service even less reliable.

Given the large year-to-year variability in river runoff in the western United States, it may be reasonable to ask of residents that they vary their water use as well. We might say, in essence, that drought comes with the territory, and that the practice of cutting back on water use during dry years is the price paid for living in the West. A reliable water system could then be defined, for example, as one that would not require more than a certain reduction from its customers during a “worst-case” drought. EBMUD has proposed such a standard for its own

system, ensuring that no more than a 325-percent reduction in use (in addition to reductions achieved by long-term conservation programs) would be needed during the worst envisioned drought.

Ultimately, the definition of reliability is a decision for each community to make. If the residents are willing to endure greater reductions, more people and businesses can be settled on a fixed amount of water. The water agency's responsibility is, through open public process, to develop and approve a clear definition of reliability, and then to make sure that it is not exceeded.

THE ROLE OF WATER PRICING

The price of water in California has rarely reflected all of its costs. This has been true for the price charged farmers for federal water, for the price of energy to pump water through government aqueducts, and for the price of providing water to new urban developments. Such pricing subsidies may be reasonable if they clearly reflect the objectives of an agreed-on social policy. However, in most cases neither the subsidies nor the objectives are clear to the communities that pay for them.

In relating price to growth, one must first understand the true, unsubsidized costs. As a community adds development, at some point new sources of water will be needed. The new sources are likely to be more expensive than the old sources, since the cheapest and easiest sources were usually exploited first. For new areas of development, major additions to the distribution system will be needed as well.

If new development is to pay its own way—that is, pay for all of the costs of securing the additional water and constructing the additional distribution facilities that new development requires—then two general approaches are available. One is to include the present value of these costs in annexation and hookup charges. The other is to charge differential rates: one rate for water from the old supply, and another, higher rate for water from the new. If, however, neither approach is taken and the additional costs are simply covered by overall rate increases, then existing customers will pay to subsidize new development.

THE ROLE OF URBAN WATER CONSERVATION

Urban water conservation strategies fall into two categories. Long-term conservation efforts center mainly on infrastructure: install low-water-using toilets, showerheads, appliances, and landscaping; build graywater recycling systems for residential irrigation; convert to more water-efficient industrial processes. Short-term conservation efforts for drought years focus mainly on behavior: flush the toilet less, shower less, and stop watering the lawn. There are also interactions between the two: because toilets are flushed less often during a drought, the

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water savings that can rightfully be credited to the installation of low-flush toilets will be less during a drought year than in a normal year. The complex interplay between behavioral and structural conservation means that some approaches improve water system reliability more than others.

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serve the environment. In contrast, water agencies have generally viewed water conservation as a means of enhancing supplies to support growth. When communities realize that their conservation efforts have served to fill some developer's pockets, they often rebel. "It's real hard to dig out your lawn, when across the street they're putting in 75 new homes," says a machinist in Reno. Brazil, "Parched Reno Talking of Ban on New Growth," *San Francisco Examiner*, p A1, col 5 (Mar. 17, 1992). Environmental writer Charles Bowden railed against Tucson's developer-boosting conservation program: "Instead of bragging about a reduced per capita consumption of water so that more people can be stuffed into this valley, let's turn on the faucets full blast . . . and get those hoses running. Let's have water roaring out of our yards and cascading over the curbs." Charles Bowden, "Beat the Peak Quackery," *Arizona Daily Star*, p C-3 (Aug. 2, 1981), as quoted in Martin, Ingram, Laney, and Griffin, *Saving Water in a Desert City*, p 32 (Resources for the Future, Washington, D.C., May 1984).

California's water agencies depend on their customers conserving when necessary, and should not abuse their willingness to do so. Water agencies need to orient conservation efforts toward improving reliability rather than promoting additional growth, and should ensure that water conservation results in clear benefits to the environment.

THE ROLE OF NEW SUPPLY PROJECTS

Supply projects commonly discussed include new or increased diversions of surface water, new or increased extractions of groundwater, purchasing current diversions or extractions from existing users, new storage projects including new or larger dams or groundwater storage, reclamation of wastewater, and desalination of ocean or brackish water. Most of the traditional approaches provide more water in normal or wet years than they do in drought years, and therein lies a dilemma for water supply managers.

Most public discussions of urban water supplies concern the water rights, contracted amounts, and flows available in normal years. Thus, most development

decisions, to the extent that they consider water supply at all, are based on normal-year supplies. As a result, development is freely encouraged up to the limit of normal-year supplies, and then when a drought occurs there is not enough water to go around. If a new supply is then acquired with the usual characteristics—providing considerably less water in drought years than in normal years—the cycle of overdevelopment inevitably followed by drought crisis begins anew.

From a water manager's point of view, the ideal supply mix provides just as much water in drought years as in normal years. For a system that already suffers from a lack of drought-year water, an additional supply that provides more water during drought years, or that provides water *only* during drought years, would be even better. Some new approaches to water supply have the potential to meet these ideals.

Many reclamation and most desalination projects, for example, will provide as much water in dry years as in wet. These are essentially treatment processes for various types of nonpotable water, and in most cases the supply of nonpotable water vastly exceeds the likely plant capacities in both normal and drought years. For reclamation projects built to handle the full normal-year flow of wastewater, there will be some drought-year decline in output, but even then the reduction is likely to be less than the reduction in the primary water source.

Storage projects could be constructed and operated to provide water mainly or solely for drought years. Of particular promise are projects involving the true conjunctive use of groundwater basins—using available flows to recharge unfilled basins during normal and wet years, then withdrawing the water for use during droughts. Theoretically, surface reservoirs could be operated in the same way, but experience suggests that reservoir water is likely to be raided for use in normal years to support new development.

A variation on this approach is for water wholesalers to make their unused reservoir capacity in dry years available to customers who lack storage but who wish to hold over water in case the following year is even drier. In the recent drought several local agencies that owned sufficient storage capacity, such as EBMUD

and the San Francisco Water Department, carried over water to ameliorate the worst drought impacts. The state and federal water projects could provide their customers with similar opportunities. Such an approach is technically straightforward; the only obstacles are institutional.

Finally, water transfers from farms to cities could be structured to provide only drought-year water, with benefits to both parties. With long-term "contingency contracts," water could be transferred under specified drought conditions at a

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price agreed to in advance. Such arrangements would provide an assured supply of water to cities at the times they need it most, and provide a cash boost to farmers in marginal years without threatening their supply in other years. This type of transfer would support farming's survival in the long run. Although most farm-to-city transfers have been vehemently opposed by farm groups, this approach has been endorsed by the California Association of Family Farmers.

ENVIRONMENTAL IMPACTS

Because water supply and growth are so interlinked, the assessment of impacts from decisions about supply or growth should rightfully be interlinked as well. Development decisions should take account of the environmental impacts of securing the additional water needed for development. Decisions to increase water supplies beyond those needed for existing customers should take account of the impacts of the development that additional supplies will support.

In this case too, agencies on either side of the picture have responsibilities to each other. Water agencies must inform cities and counties of the environmental impacts of securing new supplies, *i.e.*, the considerable and well-documented impacts of damming rivers and diverting flows, as well as the subtler impacts that may result from groundwater storage, water transfers, reclamation, desalination, and other supply projects. Cities and counties should consider these impacts in their decisions about development.

Cities and counties in turn should provide water agencies with information on the impacts of growth that proposed supply projects will support or induce. The ultimate goal should be informed community decisions about both development and the supporting infrastructure, with full awareness of all resulting impacts.

THE REWARDS OF DOING IT RIGHT

Growth is inherently neither good nor bad. Growth can enhance community life, create meaningful work, support and be sensitive to environmental values, and decrease the economic disparities between groups. But growth can also undermine stable neighborhoods and communities, generate hazards and destroy environments, and intensify economic injustice.

Integrating water supply planning with development planning would enhance the opportunities for positive growth and reduce the obvious risk of settling a large population on inadequate resources. In contrast, keeping water and development plans disconnected makes damaging, disproportionate growth more likely. This will hardly matter to those developers seeking growth at any cost. But to public officials, it ought to matter quite a lot.