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Commentary

Water and Western Growth[1]

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INTRODUCTION

The West's population is growing at the same time that water supplies face continued and new stresses. Western states benefit both from the continued population shift toward the sunshine and mountains and from immigrants who fuel the country's absolute population growth. Contrary to any concerns about limited water supplies, people want to live in the West. It is beautiful; large parts of it enjoy mild or bearable winters; it offers a full range of "lifestyle" and outdoor recreation choices; and settlement is much less constrained than it was when the West was an eastern and European colony. The modern service economy,[2] combined with extensive (and federally subsidized) highway, air route, and electronic infrastructures, facilitate a greater range of location choices for individuals and business than did the "old" cowboy-commodity production economy, which remains politically powerful but economically less important. Air conditioning has made year-round desert living feasible for many who otherwise would not bear the discomfort of the Southwest's summers.[3]

What are the consequences of this surging human tide? Urban growth impacts four water-related commons both in the areas which are growing and in areas where the water supply originates: (1) available surface and groundwater reserves; (2) community amenity levels; (3) the cultural commons represented by small ranch, farm, or raw commodity production communities[4]; and (4) water dedicated to aquatic ecosystem function support[5] or recovery.[6]

Increasingly, cities are asking what kind of physical and cultural landscape they want, and water provides a leverage point to facilitate more intelligent choices about urban form and the society that it produces than have been made in the past.[7]

Some communities, not always confined to the arid West, do face supply constraints and must factor these into their growth policies. In other areas, continued urban growth may come at the expense of environmental restoration and the preservation of remnant areas of irrigated agriculture. Cities may wish (or be forced) to integrate their water demands with those of other users. Population booms also threaten to destroy the land and water base of many small communities[8] and landscapes with under-appreciated ecosystem services and other values.[9]

This commentary examines the barriers that water, public utility, and land use law pose to using water availability as a strategy to limit population growth, and the water-land use linkage programs currently emerging in the region. We conclude that the current growth management debate continues to accept growth as inevitable and seeks only to accommodate it through conservation, reallocation of agricultural supplies, and possibly denser urban development. Nonetheless, the exit of the federal government from subsidizing regional development, along with state inaction, is forcing urban areas to begin linking land use and water resources planning for the first time. Western cities may not stop growing, but growth accommodation will be more difficult and more expensive than it has been in the past. Increasingly, some form of water supply planning will be necessary before growth can continue. Water will be more costly, and the trade-offs between growth and its alternatives will become more intense and obvious. Global climate change adds an additional wild card to the mix. We are still a long way from achieving sustainable human settlement in the American West.

BARRIERS TO LINKAGE: WATER AND LAND USE POLICIES FUEL UNLIMITED GROWTH

In light of the changing demographic, political and physical realities of the region, Western states and local governments can scarcely avoid taking a more coordinated approach to water and land use planning. Historically, however, water and land use planners have worked at different levels of government (water managers reporting to state agencies; land use planning re-

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volving around local government authorities) and have little reason to talk to one another.[10] Today, land use planners are increasingly interested in water supply issues,[11] although water managers show less interest in delving into local planning issues.[12]

States have four options to link water and land use policies: (1) capping growth; (2) continuing unlimited growth accommodation; (3) shifting the burden of supply acquisition to local governments and developers; and (4) constraining growth to match available and projected supplies. In this section we discuss the legal barriers that complicate states' decisions to choose among these strategies.[13] The next section examines linkage programs that Western states and cities are beginning to adopt.

Water Law: The Municipal Super-Preference

Water law has consistently supported unrestrained, sprawling urban growth. Water law has served as one of the drivers of suburbanization because all doctrines—the common law of riparian rights, prior appropriation, and the law of groundwater capture—contain a super-preference for accommodating growth. This is not a condemnation of urban growth or water law generally. The dedication of water to urban use is consistent with the long-established scheme of preferences for utilitarian applications of water, and is economically rational. Our point is simply that in major water fights, cities almost always win. We have detailed this super-preference in previous writings[14] so we offer here selected examples of the super-preference. This discussion assumes a basic understanding of the variations on water allocation systems adopted by the western states.[15] We concentrate on Western water law, but the common law of riparian rights equally supports urban growth.[16]

The Law of Prior Appropriation

Prior appropriation promoted the West as a democratic, irrigated society. The dominant rule of water allocation in the West also turns out to be an ideal law for urban expansion because it is a use-based rather than land-based system of property rights. Detaching water from land allows the entire flow of a stream to be diverted far from the watershed of origin to serve growing cities, as demonstrated in California and Colorado. Cities have thrived under prior appropriation, although in any given situation the doctrine can be invoked by agricultural water right holders with senior rights, and a municipality may bear the cost.[17]

Las Vegas's success in finding the water to keep putting people in a most inhospitable place illustrates the truth of both these statements. Las Vegas is finding water in distant communities in the state and may actually get a federal reservoir to capture California's runoff before it reaches Mexico. However, the search for new supplies has come at escalating financial and political costs.

Cities benefit from special rules that allow them to acquire water rights in advance of demand. Two special doctrines largely exempt cities from the antimonopoly principle that water rights cannot be held for speculative purposes. Cities enjoy an exemption from the antispeculation principle under the "growing cities" doctrine, which allows cities to perfect a water right to the amount of water that they will need in advance of demand.[18] There are few exceptions.[19] Under the related "progressive growth" doctrine, a claimant can perfect a water right based on expected anticipated need for the water.[20]

Groundwater: Pumps Have No 'Off' Switch

Groundwater law is even more favorable to cities because it imposes fewer legal restraints on water use than the laws governing surface waters. In many parts of the country, accelerating groundwater pumping by municipal suppliers and unregulated private wells is causing water tables to drop and land to subside.[21] Courts have refused to recognize a right to lift,[22] and neither judicial decisions nor state statutes do a good job of integrating surface and groundwater rights.[23] Cities have benefited from this lack of coordination.

The right to extract groundwater is controlled by the common law rule of capture, while surface water use is controlled by prior appropriation or dual riparian–appropriative regimes. For example, the reasonable use rule that (loosely) controls groundwater appropriation in places like rural Arizona is a modified rule of capture requiring only that municipalities compensate injured overlying owners when water is transported to non-overlying land.[24]

California and Nebraska replaced reasonable use with the correlative rights rule to bring groundwater closer to the common law of riparian rights, but at most these rules simply impose additional financial burdens on cities that wish to acquire new groundwater supplies. The California correlative rights rule posits that all overlying owners have a right to a proportionate share of the basin and that any surplus waters are subject to appropriation by non-overlying landowners.[25] Once the "basin" is defined, this rule formally puts non-overlying municipalities at a disadvantage because in-basin users have preferential rights.[26] New Jersey dealt with this problem by allowing municipalities to pump without compensating injured small well owners.[27]

California has developed special rules for municipalities that insure that the state's correlative rights rule does not cut off access to needed supplies. The famous case of *City of Pasadena v. City of Alhambra*[28] invented a new way to divide basins among municipalities, holding that overlying owners and appropriators have equal rights when they pump in excess of the safe annual yield. The mutual prescription rule tends to confirm municipal uses or to promote large-scale regional solutions.[29] It has been limited to conflicts between overlying and non-overlying water rights holders.[30]

Some states, such as New Mexico and Colorado, allow the state engineer to deny a groundwater appropriation that would impair senior surface rights, or to condition a new appropriation on the retirement of senior surface rights.[31] This level of integration has not, however, ended groundwater mining.[32] Colorado's rococo groundwater rules rank among the marvels of modern water law, but the net result is a

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strong preference for Front Range growth. For example, special rules for the Denver's "not nontributary" deep aquifer[33] provide for minimal augmentation of streamflow and thus promote use on new subdivisions on overlying land.[34] The Act mentions four aquifers by name but the Colorado Supreme Court has held that the legislative history of the statute supports the conclusion that it applies only to those portions of the four named formations that are located in the Denver basin.[35]

Arizona has the most aggressive groundwater conservation regime, but it too allows cities to prosper when water is limited. Arizona is gradually switching from relying primarily on groundwater to obtaining supplies from the Central Arizona Project and recycled water, and water use appears to have leveled off even as population continues to increase. The 1980 Arizona Groundwater Management Act requires that the state establish safe yield limits in designated Active Management Areas. But the Phoenix Active Management Area may exceed safe yield by 251,000 acre-feet and the state estimates that this overdraft will continue until the 2025 safe yield target date.[36] Smaller deficits have long been projected for Tucson, but the same result is likely—the 2025 safe yield goal will not be met.[37]

New Mexico's long history of groundwater mining to support the Albuquerque corridor is beginning to catch up with it. To meet its downstream Rio Grande compact and treaty obligations, all new uses must be offset by existing ones.[38]

Local governments have long assumed that they do not control access to water located within their boundaries because water rights are created and controlled by state law. They have also assumed (and been told) that water rights can be detached from the area of origin and moved to areas of demand. However, these assumptions are eroding in ways that may adversely impact cities. For example, California counties have the legal right to prevent groundwater exports beyond their borders. California has no statewide regulation of groundwater use, and state law allows local agencies to adopt groundwater management plans.[39] An intermediate appellate court opinion held that state law does not preempt a county ordinance from prohibiting withdrawals in excess of a safe yield, or from protecting preexisting and reasonably foreseeable overlying beneficial uses. The court dismissed the argument that the ordinance was intended to "hoard" water by protecting projected agricultural growth, invoking the principle that courts do not probe lawmaker motivation.[40]

Land Use Law: Growth Management Equals Growth Accommodation

The rate and degree to which cities must accommodate growth has long been a divisive land use issue. Growth management first emerged as a discrete local land use objective in the late 1960s as post-World War II suburbs expanded into farming areas near urban areas; eventually, these issues were partially folded into the environmental movement.[41] Since the 1960s, some local governments—generally smaller, affluent suburbs—began to question whether they had to accommodate *all* growth, and growth control and management emerged on the agenda. A series of precedent-setting cases gave communities considerable discretion to deflect and coordinate growth through their urban service capacity. Growth management also allowed growth to be deflected through low-density zoning, especially in the West where courts have not followed New Jersey, New York, and Pennsylvania in adopting strong antiexclusionary or inclusionary doctrines.[42]

"Growth management" as an explicit objective went somewhat out of favor when challenged by arguments that it simply raised the cost of housing for many moderate- and low-income families.[43] Smart Growth is the post-1980s growth management strategy, but the objectives are the same: to encourage denser, less automobile-dependent communities, and to preserve open space within an urban region.

As generally practiced today, growth management is little more than a sophisticated unlimited growth accommodation strategy. Cities generally accept growth levels as a given and seek to accommodate it by channeling development within urban growth boundaries and by using subdivision exactions to force new residents to pay for the costs of new public services directly. A perceptive analysis concluded that "growth management efforts remain acceptable only if they are limited to programs designed to channel growth to appropriate locations or minimize negative impacts associated with on-going growth."[44] The law of growth management supports the long history of market preference: Americans have a persistent preference for low-density development.[45]

Urban sprawl has immediate water supply consequences in areas that depend on groundwater. A recent report by American Rivers and other water and environmental nongovernmental organizations documents how urban sprawl reduces aquifer recharge by paving over recharge areas.[46] The report confirms another important facet of recent growth trends: Land consumption rates in this country far exceed the rate of population growth. Atlanta led the nation in the 1990s by increasing its land consumption 81 percent while sustaining a 41 percent population growth increase. Boston, the Washington D.C., metro area, Dallas, and Houston followed. Thus, the new concern and formal linkage between water supply and urban growth is not simply an issue in the West.

The core economic case against sprawl is that low-density development creates higher urban service costs, higher energy costs because of increased travel, and more external costs such as automobile exhaust emissions. For example, Kenneth Jackson celebrated the suburbs in his classic book, *The Crabgrass Frontier*, but predicted that "[b]y 2025 the energy-inefficient and automobile dependent suburban system of the American Republic must give way to patterns of human activity and living structures that are energy efficient."[47] There is no single, simple solution, but the important point is that alternative, more efficient sustainable land-use patterns exist and ought to be considered.

Cities have some authority to defer growth until water and sewer capacity is adequate to serve the new residents.

In addition, the regional impacts of individual municipal growth management decisions are often ignored. Growth controls tend to produce more European-type cores, with many amenities and more massed, usable open space, but they do so only by pushing low-density growth far into adjacent areas. If water is used as a growth control lever, the tension between growth control and affordable housing will be exacerbated. Lawyers and planners who must work with California's new water supply planning and certification requirement, described below, justifiably complain that the water mandates are inconsistent with other statutes mandating affordable housing components in city plans.

THE LIMITED POWER TO USE WATER TO RESTRICT GROWTH

Growth Moratoria

Cities have some authority to defer growth until water and sewer capacity is adequate to serve the new residents.[48] Growth moratoria are a long-established land use planning device to freeze development for a limited period of time to allow cities to formulate permanent land use plans for an area slated for development. The extra time is supposed to allow cities to secure water supplies, obtain financing, and construct the necessary infrastructure.[49]

Cities may impose moratoria on water service,[50] but if a moratorium is a de facto permanent freeze on development the city may be held responsible for an unconstitutional taking of property.[51] In 1987, the Supreme Court held in *First English Evangelical Lutheran Church of Glendale v. County of Los Angeles* that a landowner could recover damages for a temporary taking of property, and suggested that courts must now distinguish between unconstitutional temporary takings and "normal delays" in obtaining development permissions.[52]

After *Lucas v. South Carolina Coastal Council* [53], landowners argued that there was no justification for a temporary suspension of the right to develop, but in 2002 the Supreme Court refused to apply the *Lucas* rule to moratoria and endorsed them as a legitimate planning tool. In *Tahoe-Sierra Preservation Council, Inc. v. Tahoe Regional Planning Agency*, [54] the court characterized the potential taking as regulatory rather than a physical taking, and applied the *Penn Central* balancing test to uphold a 32-month moratorium.[55]

Thus, the *First English* compensation rule only applies after the court has determined that the moratorium is not a proportional, reasonable, and good faith response to the threats to a community posed by development. *Tahoe-Sierra Preservation Council* can best be characterized as an application of the precautionary principle because it allowed a public agency a reasonable period of time to respond to a substantial risk of an adverse impact if an activity were not limited. The case does not afford cities an excuse to delay developing new supplies unless they can demonstrate that development poses environmental issues that need to be studied and mitigated.

Judicial treatment of water moratoria is consistent with this analysis. Courts have approved water service moratoria but have suggested they are valid only so long as a true supply deficit lasts; cities cannot use moratoria permanently to limit growth.[56] One of the problems of a moratorium is calculating when there is a shortfall. A drought will satisfy this requirement, but the return of a "normal" wet year may eliminate the supply deficit.

Growth Caps

Capping urban growth is assumed to be off the policy agenda. Although the idea surfaces periodically, no area of the West has tried to stop growth or even cap it. The reasons are economic and political, but the lack of interest in this option reflects the widespread assumption in land use law that a community cannot isolate itself from the rest of the world.

The constitutional right to travel prohibits a state from barring the entry of new residents. The legality of a community to impose a flat cap on growth has been invalidated,[57] although the courts have rejected the argument that the right to travel applies to intrastate growth management programs.[58] Subsequent cases have held that the right is one of entry, not location: There is no right to locate in a particular community within the state.[59] Thus, communities retain considerable discretion to use their land use powers to decide where and under what conditions they will accommodate the growth.[60] However, the current "smart growth" movement is too incoherent to serve a compelling state interest should a court revisit the issue.

Service Denials

Many cities may wish to time the rate of growth to reliable, available "wet" water. The power of a city to defer growth puts it at the vortex of two potentially inconsistent doctrines: public utility law's "duty to serve" and land use law's authority for local governments to regulate the timing and manner of development on private land. Municipal water suppliers are generally either public utilities under state law or subject to judicially imposed public utility duties.[61]

Public utilities have a duty to serve all customers within a service area, provided that the system as a whole can absorb the cost and still yield a reasonable rate of return. A leading California case extended the duty to serve to include a duty on water providers to acquire the necessary supplies to meet projected demands.[62] The rationale for this rule is ultimately based on basic ideas of fairness and estoppel. It is designed primarily to protect those who had entered into a service relationship with a common carrier or were within the service area of a public utility but were denied service when the carrier or the utility was able or should have been able to provide service, at least in the short run.

The acquired water has often been sold to consumers at average or other marginal cost so there has been little, if any, incentive to conserve, although pricing practices are slowly changing as energy security and treatment costs increase.[63] The duty to serve has been criticized as out of step with the modern land use cases that allow cities to control the rate and location of new development short of totally deflecting it to other communities in the region.

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In response, courts have held that the duty to serve does not prevent municipalities from subordinating utility service to land use plans both within and without the territorial limits of the city. This includes the power to refuse service until an area is ready for development[64] and to deny subdivision approvals for new subdivisions with water and sewer service that is inconsistent with a county's land use plan.[65] Modern courts have recognized that a contrary rule would undermine the ability of cities to control their growth rates and their discretion to distribute the growth.

Indeed, a number of cities already limit service extensions as a de facto growth control tool. For example, Half Moon Bay, California, has done this because of limited available supplies and a lack of sewage treatment capacity. The small coastal town of Bolinas Bay north of San Francisco has frozen water meters and allows new connections only if a person buys an existing meter. And the even smaller community of Rockville, Utah, opted not to build a new water treatment plant explicitly because its leaders do not want to entice more residents to move there.[66]

THE EMERGING LINKAGE OF WATER AND LAND USE POLICIES IN THE WEST

All over the West, cities are beginning to realize that new municipal water supplies must be addressed in the context of other competing uses in the watershed or basin, and that there may be limits to the amount of available water to support new growth. This recognition takes many forms.

The most modest step is to incorporate water supply planning into land use planning. For example, water conservation is an element in the emerging Envision Utah regional planning process.[67] Some states have taken the additional step of giving local governments more discretion to coordinate water service and urban growth.[68] Several have taken the more far-reaching step of conditioning new development on an adequate water supply.[69] A few states are moving to require that "wet" water be in place before new developments can be approved, and many other states are imposing greater water assessment and planning duties on local governments.[70] Some water-stressed cities, such as Santa Fe, New Mexico, have developed innovative conservation measures.[71] An even more extreme step would be to close an area to urban development, but this is a step that all states and local governments seek to avoid.

Municipal Water Supply Planning

The most common strategy to link water and land use planning is to require water supply elements in comprehensive plans. The link with the most bite places the responsibility for supply acquisition on local governments and developers. This form of growth management pressures municipal water suppliers to acquire the necessary supplies or to devise an alternative strategy to meet future water demands because the issue is only where, not whether, the demand will exist. In many western states, however, water planning elements are integrated weakly if at all in the larger public planning process.[72] These new planning mandates are built on the old water resources planning framework. Until the 1980s, water resources planning meant primarily project planning. Water supply retains the single focus—more available water—but expands it to consider a wide range of supply options. The possibility of limiting growth to conserve alternative uses of water is seldom one of those options.

Cities facing more immediate shortages continue to rely on a mix of supply acquisition options, giving increased weight to conservation as opposed to a simple reliance on the acquisition of new water. Of course, the balance between the two strategies varies from city to city, and conservation cannot carry the entire burden of supplying new growth.[73]

San Diego illustrates one possible new growth accommodation model. The growing city faces the double problem of limited natural surface and groundwater supplies and a low-priority Colorado River entitlement. The city has linked water supply and growth as part of its ongoing growth management program with a five-part strategy. In the future, in addition to possible water transfers from the embattled and divided fiefdom known as the Imperial Irrigation District, San Diego will depend on a combination of: (1) more efficient use of existing supplies; (2) demand management; (3) reallocation of existing supplies through water marketing; (4) more limited new storage and distribution facilities; (5) desalination; and (6) greater conjunctive surface and groundwater use.[74] This strategy has allowed it to add some 300,000 new residents since 1990 without increasingly its water use during that period.[75]

State-Municipal Duty to Assure Adequate Drought-Proof Water Supplies

Arizona and California view the existence of an adequate, long-term, drought-proof supply of water as an urban consumer entitlement. This entitlement is unconnected to any idea of water as a limit on urban growth, as the Arizona experience illustrates. As the price for construction of the federally funded Central Arizona Project (CAP), Arizona had to agree to stop mining its aquifers to support urban growth; accordingly, in 1980, the state adopted the 1980 Groundwater Management Act.[76] Despite intense opposition, rules adopted pursuant to the Act imposed a duty on all new developments in the four groundwater basins included within the designated Active Management Areas, and thus on their municipal suppliers, to establish "a sufficient supply of water which will be physically available to satisfy the applicant's 100-year projected water demand."[77] The rules are structured to eliminate reliance on continued groundwater mining to establish an assured water supply.

Initially, the rules set off a scramble to acquire agricultural water rights in remote counties, but more recently municipal suppliers began paying the high CAP rates for Arizona's underused Colorado River entitlement. This price shock was alleviated by the creation of the Central Arizona Groundwater Replenishment District, which allows members to secure and withdraw groundwater.[78] As Phoenix and Tucson

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have used more surface (CAP) water, municipal water use has started to decline in part because of a wetter than average cycle, groundwater conservation, and the increasing reliance on recycled ("gray") water for turf irrigation.

Importantly, growth is expanding outside the metropolitan areas, beyond the reach of the Groundwater Management Act,[79] and there is no consensus as to how to address the environmental impacts of the growth. The state Department of Water Resources reviews building plans to determine whether the water supplies will last 100 years, but their determination has no legally binding effect. A review of state records in 2005 revealed that 35 percent of the applications reviewed by the state since 2001 were returned with an "inadequate water supply" finding, but most of those projects proceeded nonetheless.[80] As a result, many subdivisions in rural Arizona are constructed with tenuous and unreliable water sources.

Claiming that Arizona's state law "is a joke," the supervisors of Pima County (the county that includes Tucson and its fast-growing suburbs) recently drafted a new policy to take into account the impact of groundwater pumping when deciding whether to grant a rezoning or comprehensive plan amendment.[81] The new policy won't apply to developments that draw water from municipal supplies or other providers using renewable supplies, and it will only apply to developments exceeding four acres. The main change from existing procedures is that this new policy will require developers to provide information at the early stages in the process rather than after they have already received rezoning. Projects farthest from renewable water sources will require more extensive mitigation, or may be refused permission to develop.

California's approach shifts more responsibility directly to developers to find adequate supplies. The policy change began in 1993, when the then "green" board of the East Bay Municipal Utility District (EBMUD), which serves the booming East Bay region of the San Francisco Bay area, opposed an 11,000-unit development in Contra Costa County. EBMUD obtained a trial court verdict that the county had to consider the availability of an adequate water supply, but the case was settled on appeal.[82]

In 1995, California enacted legislation, primarily in response to the rapid and dispersed urban growth and conversion of prime agricultural land in northern California and the San Joaquin Valley. The legislation requires cities to have a firm water supply plan in place before large new developments are approved; unlike Arizona, the statute does not impose a de facto duty on cities to acquire sufficient water rights, and it was initially not enforced.[83]

The state legislature tightened the law in 2001, prohibiting approval of tentative subdivision maps, parcel maps, or development agreements for subdivisions of more than 500 units unless there is a "sufficient water supply."[84] Sufficient supply is defined as the total supply available during a "normal single-dry, and multiple dry years within a 20-year projection."[85] To calculate this, the supplier must include a number of contingencies such as the availability of water from water supply projects, "federal, state, and local water initiatives such as CALFED" and water conservation.[86] Enforcement is tied to the duty of water suppliers to prepare urban water management plans.[87] Water supply assessments must either be consistent with these plans or meet the available water supply criteria. Assessments may trigger a duty to acquire additional water supplies.[88]

These duties will be enforced primarily under the California Environmental Quality Act (CEQA).[89] The process, provided it is in fact honest, will allow objectors to probe the underlying assumptions and reliability of the data on which the assessments are made. This could be a serious impediment to business as usual, as evidenced by recent CEQA litigation on the subject.[90]

In 2000, an intermediate appellate court invalidated the environmental impact report (EIR) prepared in connection with the renewal of the California State Water Project contracts and the subsequent Monterey Water Users Agreement.[91] The court determined that the state drought delivery projections were "paper" water, and that reliance on this phantom entitlement could seduce local jurisdictions to approve developments in excess of the actual guaranteed supply. In 2003, to settle the suit, the state agreed, *inter alia*, to drop the word "entitlement" from state contracts and to prepare more accurate supply and delivery forecasts.[92]

Similarly, an intermediate court of appeal invalidated an EIR for a 2,555-unit housing and mixed use project in the Santa Clarita Valley north of Los Angeles.[93] The court found that the EIR was not sufficiently detailed because it did not include a discussion of the serious risks of reliance on less-than-projected State Water Project supplies.

This commentary concentrates on the water-stressed West but other areas of the country are beginning to experience similar stresses. Wet as it is, Florida faces a California-like imbalance between supply and population. Most of the water is in the north, and the population is in the south. Florida is trying to plan its way to a solution—at least until the political support for large-scale north-south diversions exists.[94] In 2002, the legislature expanded the local government comprehensive plan requirements to strengthen coordination of water supply and local land use planning.[95] One of the most significant new requirements is a 10-year Water Supply Facilities Work Plan, which must project the local government's needs for at least a 10-year period, identify and prioritize the water supply facilities and source(s) of water that will be needed to meet those needs, and include capital improvements identified as needed for the first five years. Each listed capital improvement must identify a financially feasible revenue source, none of which is speculative or contingent. Each year during the annual update to the five-year schedule, a new fifth year will be added, and capital improvements identified in the 10-year work plan will be incorporated. Initially, only those local

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governments with responsibility for all, or a portion of, their water supply facilities and located within a Regional Water Supply Plan (RWSP) area must prepare and adopt a 10-year water supply work plan.

These examples of new state legislation and local initiatives illustrate the extent to which the federal government and state governments are devolving much of their historic responsibility for water resources planning to local governments. Throughout the United States, local governments are assuming broader water supply planning duties. The focus on water planning remains the location of new, drought-proof supplies, but planning is being expanded to include greater consideration on the impacts on existing users, watersheds of origin, alternative sources of supply, and demand management-conservation. In addition, these plans can no longer be project wish lists or hydrologically weak assumptions about supply availability. Plans must be realistic assessments of what water will be available under worst case conditions.

Water-Constrained Growth

Truly supply-constrained cities may be able to limit development permanently for water-related reasons. Courts have upheld communities' discretion to deny development permission in areas with inadequate water supplies, and courts have also held that landowners have no constitutional right to use groundwater if individual well use poses public health risks or if a conservation regime has been put in place.[96] There is also no constitutional right to develop land in such a manner that will endanger future residents.

Santa Fe is coming close to making water availability the primary determinant of growth.[97] The city first restricted new water connections outside city limits unless the customer had a valid, preexisting agreement for water service. Next, the city's Water Budget Administrative Ordinance, enacted in 2003, required all new projects within the city to offset a project's water budget by retrofitting existing toilets with high-efficiency units.[98] The 2005 Water Rights Transfer Ordinance requires new, large construction projects to transfer water rights to the city prior to issuance of building permits.

Real water shortages may end up constraining growth in the area surrounding Prescott, Arizona. The groundwater within the designated Prescott Active Management Area (AMA) is in overdraft, but public and private water providers have continued to issue assured water supply commitments for subdivisions. The net result is that "even with maximum reuse of effluent, demands would outstrip supplies through the year 2025," according to a forecast by the Arizona Department of Water Resources.[99]

This will be a problem, because Prescott has very limited surface water supplies to turn to for augmentation. Before the Arizona Department of Water Resources could approve a management plan for the Prescott AMA, a land rush of subdivision applications sent the city searching for alternative supplies. One potential source is the Big Chino Valley north of Prescott, which provides the source of water for the Verde River, a rare semiarid perennial stream, rich in biodiversity and an important cultural, recreational, and scenic resource.

What are the reasonable expectations of those settling in areas such as the Prescott Valley in reliance on dependable water supplies? How about those living above groundwater being eyed by thirsty growing communities? The U.S. Constitution permits the state to conserve nonrenewable resources for the benefit of other users as well as for future generations. Groundwater pumpers have no constitutional right to a fixed quantity of water or to a fixed water table.[100] Water rights are property rights, but they differ significantly from land rights. A long history running from the Roman Empire to post-colonial America limits property rights to the continued beneficial exploitation or use of the property.[101] This tradition has died out in land use law, but it is at the heart of western water law. All water rights are based on the application of water to beneficial use. It is the use of water that triggers a constitutionally-protected investment-backed expectation. Thus, there is no constitutional right to the future use of groundwater.

The leading case establishing this principle is *Town of Chino Valley v. City of Prescott*.[102] Arizona groundwater law allows water to be transported within subbasins of AMAs. The community from which the water was being exported argued that the law took property without due process of law. Invoking the scientifically unsound analogy to things *ferae naturae*, the court held that "there is no right of ownership of groundwater in Arizona prior to its capture and withdrawal from the common supply and . . . the right of the owner of the overlying land is simply to the usufruct of the water."[103] This statement may not hold in all states. For example, states have recognized that groundwater is a component of the value of land taken by eminent domain.[104] Nonetheless, states hold the power to conserve groundwater by deciding how much will be used by whom under what conditions and that use—not abstract claims of ownership—are the basis of constitutionally protected investment-backed expectations.

The Supreme Court's decision in *Lucas v. South Carolina Coastal Council*[105] (which held that a beach erosion protection ordinance that prevented the construction of a house was a per se taking) may seem inconsistent with this assertion. The Court clearly held that if there is a total deprivation of all development potential, the state cannot justify a regulation on either consumer protection or resource conservation grounds.

Lucas, however, is not applicable to the denial of development permission to inadequately served land on the fringe of an urban or suburban area for two reasons. First, *Lucas* involved one of the two categorical per se takings that the Court recognizes: The state action affected a "wipeout" of all development value on the property. Second, in addition to some minimum rate of return on investment in land, the other fundamental principle embedded in takings jurisprudence is the right to equal treatment. Courts are more likely to balance the public benefit against an

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individual loss which falls short of a total deprivation if: (1) the area selected for non-development is relatively large; (2) the selected area is not part of an already developed area; and (3) the government's rationale is grounded on adequately documented scientific grounds.

Any land use plan or regulation which limits urban expansion runs the risk of being invalidated as a taking. However, land use policies that link growth restraints to water availability do not raise the unfairness concerns that the Supreme Court's recent taking jurisprudence has identified. Courts have long recognized that the police power can be used to protect land use consumers against risks that they may not fully understand.[106] The police power cannot be used to strip value from property simply by enacting legislation which limits the use of land, but over time, the police power can be used to dampen expectations and force land owners to adjust to new regulatory environments.[107] As the Supreme Court made clear in *Lingle*[108] and *Tahoe-Sierra*,[109] the primary function of the takings doctrine is to compensate landowners who have been unfairly singled out to bear a burden that should be borne by the public. Comprehensive water supply-based urban limits are not such a case.

CONCLUSION: IS WATER A LIMIT ON GROWTH?

Experience teaches us that the West's climate and landscapes do not pose insurmountable barriers to large-scale urban settlement. Toward the end of his life, the great western scholar Wallace Stegner said, "California . . . has the water and the climate and the soil to support a population like Japan, if it has to."[110] This lesson reflects the hard truth that, thanks to technology, we can put a great many people in most of the West. The real question, of course, is whether this is a future we wish to embrace.

Experience also shows that limits do, in fact, pose real resource constraints on settlement and quality of life. As population increases and urban conurbations spread ever outward, the resource use choices facing the West become tougher because their opportunity costs increase. Our challenge today is to understand the continuing consequences of the resource use choices that we have made and the possibility of alternative choices in the future. The late David Gaines, who led the fight to save Mono Lake, understood this. As he put it, his aim was to make people throughout California realize what would be lost if the lake continued to sink. If Californians, and particularly Angelenos, weighed those values, understood them deeply, and decided to sacrifice them for a convenient and inexpensive water supply, Gaines would (so he said) accept the choice. But it had to be a knowing choice.[111]

Moreover, we are coming to understand that limits manifest themselves through subtle combinations of political choices, market forces, and climatic factors, rather than in a more dramatic apocalyptic fashion that grabs the public's attention. The early environmental movement was filled with gloomy predictions of an immediate cataclysm that has not come to pass. Whether the impacts of global climate change will manifest themselves in such a fashion remains a matter of speculation (and Hollywood dramatization). In the meantime, we can recognize many signals that we are testing the limits of water in the West: declining and disappearing stocks of anadromous fish and their food webs; escalating economic and political costs of water service for new development; bitter and prolonged legal battles for overallocated river systems; and desperate attempts to build uneconomical and arguably unnecessary water projects in order to convert "paper" water rights to "wet" water.

The solution, of course, is far more complex than linking water and land use planning. The United States is still a growing country premised on a wider range of opportunities compared to most countries of the world. Thus, water availability will never be used as a tool to choke off growth on any large scale. But we can no longer be as indifferent to the environmental and other costs as we once were. In taking the first step and thinking more deliberately about the consequences of growth, by default, cities facing water supply constraints may begin to alter their course and seek a more sustainable way to live in and with this landscape.

ENDNOTES:

1. This article was adapted from a longer piece published in 2006: A. Dan Tarlock and Sarah B. Van de Wetering, *Western Growth and Sustainable Water Use: If There Are No "Natural Limits," Should We Worry About Water Supplies?* 27 PUBLIC LAND & RESOURCES L. REV. 33 (2006). The authors are grateful to the editors for permission to publish this adaptation here. A preliminary sketch of this paper was published as A. Dan Tarlock, *A Brief Examination of the History of the Persistent Debate About Limits to Western Growth*, 10 HASTINGS W.-N.W. J. ENVTL. L. AND POLICY 155 (Spring 2004). A different treatment of the subject, *Bridging the Governance Gap: Strategies to Integrate Water and Land Use Planning* (Public Policy Research Institute Collaborative Governance Report 2, 2007) is available at http://umtpri.org/media/Public_Policy_Water_Land_Report.pdf. We first became interested in the link between western growth and water supply while working on the *Report of the Western Water Policy Review Advisory Commission, Water in the West: Challenge for the Next Century* (U.S. Bureau of Reclamation, 1998). We subsequently explored the issue in more legal detail in an article we coauthored: *Growth Management and Western Water Law: From Urban Oases to Archipelagos*, 5 HASTINGS W.-N.W. J. ENVTL. L. AND POLICY 163 (Winter 1999). Matthew McKinney, Lora Lucero, and Scott Coulson reviewed earlier drafts of this article and provided valuable suggestions for improvement.

2. *See* HAL ROTHMAN, THE DEVIL'S BARGAINS: TOURISM IN THE TWENTIETH CENTURY AMERICAN WEST (University Press of Kansas, 1998).

3. *See generally* GAIL COOPER, AIR CONDITIONING AMERICA: ENGINEERS AND THE CONTROLLED ENVIRONMENT, 1900–1960 (Johns Hopkins Press, 1998), and MARSHA ACKERMANN, COOL COMFORT: AMERICA'S ROMANCE WITH AIR-CONDITIONING (Smithsonian Institution, 2002).

4. Gary Nabhan, *Heat's On,* Agriculture Headwaters News Perspective, *available at* www.headwatersnews.org/p.nabhan052604.html (May 26, 2004).

5. Barton H. Thompson, *Water Management and Land Use Planning: Is It Time for Closer Coordination?* in Craig Anthony Arnold, *Wet Growth: Should Water Law Control Land Use?* 95, 100-102 (ENVTL. LAW INST. 2005).

6. The conventional term is "ecosystem restoration," but the terms "recovery" or "revival" are preferable because "restoration" is narrowly defined as the return to prehuman intervention conditions.

7. The best guide for the perplexed remains KEVIN LYNCH, A THEORY OF GOOD CITY FORM (MIT Press, 1982).

8. *See generally* THOMAS MICHAEL POWER, LOST LANDSCAPES AND FAILED ECONOMIES: THE SEARCH FOR A VALUE OF PLACE (1996); A. Dan Tarlock, *Can Cowboys Become Indians? Protecting Western Communities as Endangered Cultural Remnants*, 31 ARIZ. STATE L.J. 539 (1999); and LAWRENCE J. MACDONNELL, FROM RECLAMATION TO SUSTAINABILITY: WATER, AGRICULTURE, AND THE ENVIRONMENT IN THE

AMERICAN WEST (University Press of Colorado, 1999) for analyses of the possibilities for conserving traditional landscapes in an era of rapid change.

9. The primary rationale for the protection biodiversity is that it conserves the socially useful functions that natural ecosystems provide. *See generally* HAROLD A. MOONEY AND PAUL R. EHRLICH, ECOSYSTEM SERVICES: A FRAGMENTARY HISTORY, IN NATURE'S SERVICES: SOCIETAL DEPENDENCE ON NATURAL ECOSYSTEMS (Gretchen C. Daily, ed., Island Press, 1997).

10. The reasons for the historic disconnect between water and land use planning are explored in A. Dan Tarlock and Lora A. Lucero*, Connecting Land, Water, and Growth*, 34 THE URBAN LAWYER 971 (2002), and 54 LAND USE LAW & ZONING DIGEST, No. 4, p. 3 (April 2002); and Lora A. Lucero and A. Dan Tarlock, *Water Supply and Urban Growth in New Mexico: Same Old, Same Old, or a New Era?* 43 NAT. RESOURCES J. 803 (Summer 2003).

11. Interest among professional planners has accelerated as communities face real or perceived shortages. For example, the 2006 annual conference of the American Planning Association included a separate track for planners interested in focusing their training in land and water issues.

12. There is some evidence to the contrary. For example, the November 2005 issue of WATER RESOURCES IMPACT, a publication of the American Water Resources Association, focused exclusively on water as a growth tool. *See* www.awra/org/impact.0511imp_toc.pdf. Several references to articles in this publication appear in notes within this article.

13. For an excellent summary of the issues facing Colorado water managers in the face of rapidly growing population and ongoing drought, see PETER D. NICHOLS, MEGAN K. MURPHY, AND DOUGLAS S. KENNEY, WATER AND GROWTH IN COLORADO: A REVIEW OF LEGAL AND POLICY ISSUES (University of Colorado School of Law, Natural Resources Law Center, 2001)

14. See A. Dan Tarlock and Sarah B. Van de Wetering, *Growth Management and Western Water Law: From Urban Oases to Archipelagos*, 5 HASTINGS W.-N.W. J. ENVTL. L. 163 (Winter 1999).

15. For an overview of these doctrines and their implications for water rights holders, see A. DAN TARLOCK, JAMES N. CORBRIDGE AND DAVID H. GETCHES, WATER RESOURCES MANAGEMENT: A CASEBOOK IN LAW AND PUBLIC POLICY (Foundation Press, 1993).

16. *See* Tarlock and Van de Wetering, *Western Growth and Sustainable Water Use*, *supra* n. 1 at 48-53.

17. City of Barstow v. Mojave Water Agency, 24 Cal.4th 224, 5 P.3d 853 (2000), is an example of the potentially adverse impact of priority enforcement on urban areas. In brief, the Mojave River basin in southern California is a severely overdrafted groundwater basin. After a lengthy negotiation, the trial court imposed a physical solution (much like compulsory unitization is imposed on holdout oil and gas pumpers) on all pumpers after over 80 percent of the basin water users agreed to it. Under the solution, pumpers were assigned a free production allowance; pumping in excess of the allowance was subject to a charge dedicated to the purchase of replacement water. For a prescient defense of the California Supreme Court's holding see Rebecca Sugerman, *The Mojave Basin Physical Solution: It's a Good Idea, But Is It Good Law?* 6 HASTINGS W.-N.W. J. ENVTL. L. AND POLICY 307 (2000).

18. *E.g*. City and County of Denver v. Sheriff, 96 P.2d 836, 841-842 (Colo. 1939); City and County of Denver v. N. Colo. Water Conservancy Dist., 276 P.2d 992, 1020-1022 (Colo. 1954; Moore, J., dissenting); Thornton v. Bijou Irrigation Co., 926 P.2d 1, 29 30 (Colo. 1996); Reynolds v. City of Roswell, 654 P.2d 537, 540 (1982); State Dep't of Ecology v. Theodoratus, 135 Wash.2d 582, 957 P.2d 1241, 1257-1258 (1998) (Sanders, J., dissenting). *See generally* Janis Carpenter, *Water for Growing Communities: Refining Tradition in the Pacific Northwest*, 27 ENVTL. L. 127 (1997); *Sometimes There is Nothing Left to Give: The Justification for Denying Water Service to New Customers to Control Growth*, 44 STAN. L. REV. 429 (1992); and Tarlock and Van de Wetering, *supra* n. 1 at 163.

19. The Washington Supreme Court limited the reach of this doctrine by holding that actual application to beneficial use rather than capacity of a private municipal water system is the measure of the water right. State Dep't of Ecology v. Theodoratus, 135 Wash.2d 582, 589-590, 957 P.2d 1241, 1245 (1998). The court left open the issue of whether the holding applies to municipal water suppliers. The "growing communities" doctrine was strongly endorsed in the dissenting opinion. *Id.* at 1257–1258 (Sanders, J. dissenting), and the legislature quickly preserved the result. For another example of judicial willingness to limit water rights to actual use see San Carlos Apache Tribe v. Superior Court, 972 P.2d 179 (Ariz. 1999) (statute that mandates the use of maximum theoretical capacity violates the doctrine of separation of powers because it prevents a court from basing a decree on a factual determination of the amount of water actually diverted or stored and applied to beneficial use.). *See also* Waterwatch of Ore., Inc. v. Water Res. Comm'n, 193 Or.App. 87, 88 P.3d 327 (2004) (read a public interest standard into the state's due diligence statute, O.R.S. 537.230, and held that the issuance of a permit for a proposed municipal diversion that would not apply the water to beneficial use until long after, if ever, the five-year statutory period was not in the public interest). The power of cities to obtain the water that they think they need for growth is illustrated by the aftermath of the case. The legislature quickly extended the time in which water must to be put to a beneficial use to 20 years. *See generally* Michelle Henrie, *Oregon's Municipalities Can Take the Time They Need to Grow*, 7 WATER RESOURCES IMPACT 12 (Nov. 2005).

20. *E.g.* State *ex rel*. Crider, 431 P.2d 45, 49 (N.M. 1967); St. Onge v. Blakeley, 245 P. 532, 539 (Mont. 1925).

21. *See* ROBERT GLENNON, WATER FOLLIES: GROUNDWATER PUMPING AND THE FATE OF AMERICA'S FRESH WATERS 32–34 (Island Press, 2002).

22. Wayman v. Murray Corp., 458 P.2d 861 (Utah 1969).

23. *See e.g*. Robert J. Glennon and Thomas Maddock, III, *In Search of Subflow: Arizona's Futile Effort to Separate Groundwater from Surface Water*, 36 ARIZ. L. REV. 567 (Fall 1994).

24. Higday v. Nickolaus, 469 S.W.2d 859, 866 (Mo. 1971); City of Blue Springs v. Central Dev. Ass'n, 831 S.W.2d 655, 658-659 (Mo.App. W.D. 1992); Forbell v. City of New York, 58 N.E. 644, 646 (1900); Canada v. City of Shawnee, 64 P.2d 694, 699 (Okla. 1936) (injunction conditioned on city's institution of condemnation action).

25. Katz v. Walkinshaw, 74 P. 766, 771 (Cal. 1902).

26. California groundwater law divides rights among overlying, appropriative, and prescriptive holders. Overlying owners have priority over nonoverlying users; nonoverlying users may obtain appropriative rights only if there is surplus water—water in excess of safe yield. Wright v. Goleta Water Dist., 174 Cal. App. 3d 74, 85-89 (1995). Nonoverlying pumpers can also obtain prescriptive rights. These rules are difficulty to administer, in large part because most groundwater basins are overdrafted, and in the past the courts have preferred basinwide solutions that equitably distribute the burdens of limiting ground water use to safe yield among all basin users.

27. *E.g*. Woodsum v. Pemberton, 412 A.2d 1064, 1078 (N.J.Super. 1980) (correlative rights rule does not include a right to lift).

28. 207 P.2d 17, 33 (1949).

29. The doctrine of mutual prescription ignored the California Code section that prohibited prescription against municipalities. City of Los Angeles v. City of San Fernando, 537 P.2d 1250, 1304–1306 (Cal. 1975), corrected this error, but went on to create a series of favorable rules for Los Angeles. It held that a nonmunicipal pumper may not prescribe against the state, but a municipal pumper may prescribe against a nonmunicipal one. *Id.* at 1305-1306. In addition, it announced a liberal safe yield test that will delay the start of any prescriptive period. *Id.* at 1309, and confirmed Los Angeles's pueblo rights as successor to the Pueblo of Los Angeles. *Id.* at 1277. Pueblo rights have been questioned as a historically inaccurate reading of Spanish colonial law. *See generally* Peter L. Reich, *Mission Revival Jurisprudence the Pueblo Rights Doctrine Meets Prior Appropriation: State Courts and Hispanic Water Law Since 1850*, 69 WASH. L. REV. 869 (1994). Nonetheless, these rights operate in California as a super-preference for cities. New Mexico has rejected them for cities.

30. Tehachapi-Cummings Water Dist. v. Armstrong, 122 Cal. Rptr. 918, 1001 (Cal. App. 1975).

31. *E.g.* City of Albuquerque v. Reynolds, 379, 439-440 P.2d 73 (N.M. 1962). The impact of New Mexico's tight groundwater management policies on urban growth is explored in Lucero and Tarlock, *Water Supply and Urban Growth in New Mexico: Same Old, Same Old or a New Era?*, *supra* n. 10.

32. ALLETTA BELIN, CONSUELO BOKUM AND FRANK TITUS, TAKING CHARGE OF OUR WATER DESTINY: A WATER MANAGEMENT POLICY GUIDE FOR NEW MEXICO IN THE 21ST CENTURY, 25 (1000 Friends of New Mexico, 2002).

33. COLO. REV. STAT. § 37-90-103 (10.7)(2005).

34. *See generally* Chatfield E. Well Co. v. Chatfield E. Prop. Owners Ass'n, 956 P.2d 1260 (Colo. 1998).

35. *In Re* Application of Water Rights of Park County Sportsman's Ranch LLP, 986 P.2d 262, 268-274 (Colo. 1999).

36. Arizona Department of Water Resources, Phoenix Active Management Area www.water.az.gov/watermanagement_2005/Content/AMAs/PhoenixAMA/default.htm.

37. *Safe Yield Goal Proving Elusive*, 7 ARIZ. WATER RESOURCE 1 (Sep.–Oct. 1998), http://ag.arizona.edu/AZWATER/awr/sept98/feature1.html. Skyrocketing urban growth and severe, perhaps more frequent droughts have undermined the initial AMA planning assumptions. *See generally* Matt Jenkins, *Arizona Returns to the Desert*, HIGH COUNTRY NEWS (March 21, 2005).

38. Lucero and Tarlock, *supra* n.10 at 805-806.

39. CAL. WATER CODE §§10750, 10753.9 (2005).

40. Baldwin v. County of Tehema, 36 Cal. Rptr. 2d 886, 893-895 (Cal. App. 3d Dist. 1994).

41. *See generally* THE USE OF LAND: A CITIZEN'S POLICY GUIDE TO URBAN GROWTH (Rockefeller Fund Task Force, 1973).

42. ROBERT C. ELLICKSON AND VICKI L. BEEN, LAND USE CONTROLS, Ch. 9 (Aspen Publishing, 2005), provides an extensive survey of the duty of cities to consider regional needs.

43. CENTER FOR ENVIRONMENTAL JUSTICE, SMART

GROWTH AND ITS EFFECTS ON HOUSING MARKETS: THE NEW SEGREGATION IV (National Center for Public Policy Research, 2002) ("had Portland Oregon's urban growth boundary's policies been applied in major metropolitan areas nationwide over the last 10 years, over a million young and disadvantaged families, 260,000 of them minority families, would have been denied the dream of home ownership.")

44. GABOR ZOVANY, GROWTH MANAGEMENT FOR A SUSTAINABLE FUTURE, 37 (Greenwood Publishing Group, 1997).

45. *See generally* KENNETH T. JACKSON, THE CRABGRASS FRONTIER: THE SUBURBANIZATION OF THE UNITED STATES (Oxford Press, 1985). The book has spawned a new generation of students of suburbia who are increasingly reacting against what they see as the elite bias against sprawl. *See, e.g.,* Jennifer Howard, "Revising the Suburbs, A New Wave of Scholars Challenges Common Assumptions About Sprawl and Urban Growth," 52 CHRONICLE OF HIGHER EDUCATION 29 (March 24, 2006).

46. American Rivers et al., *Paving Our Way to Water Shortages: How Sprawl Aggravates the Effects of Drought* (2002) (available at www/smartgrowth.america.org/waterandsprawl:html). *See also* Sid Perkins, *Paved Paradise: Impervious Surfaces Reduce a Region's Hydrology, Ecosystems—Even Its Climate*, 166 SCIENCE NEWS ONLINE No. 10, p. 152, www.sciencenews.org/articles/20040904 /bob8.asp (Sept. 4, 2004).

47. *See* Jackson, *supra* n. 45 at 304.

48. *E.g*. San Mateo Coastal Landowners' Assn. v. County of San Mateo, 45 Cal. Rptr. 2d 117, 136-137 (Cal. App. 1st Dist. 1995); First Peoples Bank of N. J. v. Township of Medford, 599 A.2d 1248, 1254 (N.J. 1991); *C.f.* Neenah Sanitary Dist. v. City of Neenah, 647 N.W.2d 913, 918 (Wis. App. 2002) (city need not give objective reasons for refusal to extend sewer service and absent showing of bad faith implied, contractual duty of good faith and fair dealing not violated); Bailey v. City of Goodman, 69 S.W.3d 154, 158 (Mo. App. S.D. 2002) (City has discretion not extend water service to new area in its service area).

49. See Diane Albert, *Building Moratoria: Strategies and Tools for Governing Bodies*, 7 WATER RESOURCES IMPACT 5 (Nov. 2005).

50. Swanson v. Marin Mun. Water Dist., 128 Cal. Rptr. 485, 490-491 (Cal. App. 1976); McMillan v. Goleta Water Dist., 792 F.2d 1453, 1457 (9th Cir. 1986), *cert. denied*, 450 U.S. 906 (1987).

51. Lockary v. Kayfetz, 917 Fed.2d 1150, 1155-1156 (9th Cir. 1992). *See* Dennis J. Herman, *Sometimes There is Nothing Left to Give: The Justification for Denying Water Service to New Consumers to Control Growth*, 44 STAN. L. REV. 429, 443-446 (1990).

52. First English Evangelical Lutheran Church of Glendale v. County of Los Angeles, 482 U.S. 304, 314-322, 107 S.Ct. 2378, 26 ERC 1001, 96 L.Ed.2d 250, 55 USLW 4781, 17 ENVTL. L. REP. 20,787 (1987).

53. Lucas v. S.C. Coastal Council, 505 U.S. 1003, 112 S.Ct. 2886, 34 ERC 1897, 120 L.Ed.2d 798, 60 USLW 4842, 22 Envtl. L. Rep. 21,104 (1992).

54. Tahoe-Sierra Pres. Council, Inc., et al v. Tahoe Reg'l Planning Agency, et al., 535 U.S. 302, 122 S.Ct. 1465, 54 ERC 1129, 152 L.Ed.2d 517, 70 USLW 4260, 32 Envtl. L. Rep. 20,627, 02 Cal. Daily Op. Serv. 3495, 2002 Daily Journal D.A.R. 4399, 10 A.L.R. Fed. 2d 681 (2002).

55. *See generally* Matthew G. St. Amand and Dwight H. Merriam, *Defensible Moratoria: The Law Before and After the Tahoe-Sierra Decision*, 43 NAT. RES. J. 703 (2003).

56. See cases cited Notes107–109, *supra*.

57. City of Boca Raton v. Boca Villas Corp., 371 So.2d 154, 157 (Fla. Dist. Ct. 1979). Several cases have upheld caps for resource-constrained areas. *See generally* City of Hollywood v. Hollywood, Inc., 432 So. 2d 1332 (Fla. Dist. Ct. App. 1983), *petition for review denied*, 441 So. 2d 632 (1983) (3,000-unit density cap for small strip of land on the Atlantic coastline), and Home Builders Ass'n. v. Cape Code Comm'n, 441 Mass. 724, 808 N.E. 2d 315 (2004) (building permit cap valid to protect sole source aquifer on town of Barnstable on Cape Cod). For an effort to revive the population-environmental quality link in the context of sustainable development, *see generally* Tom Pierce, student author, *A Constitutionally Valid Justification for the Enactment of No-Growth Ordinances: Integrating Concepts of Population Stabilization and Sustainability*, 19 HAW. L. REV. 93 (1997).

58. Constr. Indus. Ass'n. v. City of Petaluma, 522 F.2d 897, 906-909 (9th Cir. 1975), cert. den., 424 U.S. 934 (1976). See also Vill. of Belle Terre v. Boraas, 416 U.S. 1, 94 S.Ct. 1536, 6 ERC 1417, 39 L.Ed.2d 797, 4 Envtl. L. Rep. 20,302 (1974). *But cf.* United Bldg. and Constr. Trades Council v. Mayor and Council of City of Camden, 465 U.S. 208, 104 S.Ct. 1020, 33 Empl. Prac. Dec. P 34,151, 79 L.Ed.2d 249, 100 Lab.Cas. P 55,437 (1984).

59. *Cf. e.g.* Tobe v. Santa Ana, 892 P.2d 1145, 1161-1166 (Cal. 1995) (city has no duty to provide camping space to facilitate right to travel for the homeless). *See* Robert Ellickson, *Controlling Chronic Misconduct in City Spaces: Of Panhandlers, Skid Rows, and Public-Space Zoning*, 105 YALE L.J. 1165, 1239-1242 (1996).

60. Constr. Indus. Ass'n. v. City of Petaluma, *supra* n. 58, remains the leading case upholding phased growth but suggests there are limits on the city's accommodation strategy. Courts have invalidated phased growth ordinances if the rate is substantially less than the actual rate of growth in the community. Stoney-Brook Dev. Corp. v. Town of Freemont, 474 A.2d 561, 563-564 (N.H. 1984). The leading cases upholding a growth cap for a resource-constrained area is City of Hollywood v. Hollywood, Inc. 432 So.2d 1332 (Fla. Dist. Ct. App. 1983), pet. for rev. denied, 441 So.2d 632 (3000-unit density cap for small strip of land on the Atlantic coastline) and Home Builders Ass'n v. Cape Cod Comm'n, 441 Mass. 724, 808 N.E.2 315 (2004) (building permit cap valid to protect sole-source aquifer on town of Barnstable on Cape Cod).

61. Reid Dev. Co. v. Township of Parsipanny Troy Hills, 89 A.2d 667, 670-71 (N.J. 1952).

62. Lurawka v. Spring Valley Water Co., 146 P.2d 640, 646 (Cal. 1915).

63. Anne Gonzales, *Liquid Gold*, SACRAMENTO BUSINESS JOURNAL (March 14, 2003). An intermediate California court of appeals has refused to accept this as the inevitable fate of California. Portions of the 2000 Bay-Delta Programmatic EIS were found to be inadequate because of its failure to identify potential sources of water for ecosystem restoration and its failure to consider the alternative of reduced water exports. In re Bay-Delta Programmatic Envt'l Impact Coordinated Proceedings, 34 Cal. Rptr. 3d 696 (Cal. App. 3d Dist. 2005), *rev. granted*, ___ P.2d ___ (2006) (intermediate appellate decision published). The court held that the EIS did not have to identify the ultimate sources of water, but it could not simply list potential sources of water, especially "given today's climate of antipathy toward massive water storage projects and recent efforts to decommission existing dams and reservoirs," but had to include a full analysis of supplying water "from whatever the source." *Id.* at 757. On the issue of reduced water exports, the court refused to accept the conclusion that this was not a feasible alternative because southern California was continuing to grow. "Taking an assumed population as a given and then finding ways to provide water to that population overlooked an alternative that would provide less water for population growth leaving more water for other beneficial uses." *Id*. at 774. The California Supreme Court's decision to accept review voids the intermediate court of appeals' opinion, but the breadth of the court's holding illustrates that one can rely less and less on "conventional wisdom" of the inevitability of unrestrained growth in water-stressed areas.

64. Dateline Builders, Inc. v. City of Santa Rosa, 194 Cal. Rptr. 258, 266 (Cal. App. 1983); Moore v. City Council of Harrodsburg, 105 S.W. 926, 926 (Ky. 1907) ("In the absence of fraud, corruption, or arbitrary action, the judgment of city official as to extension of water service is beyond judicial control."); County of Del Norte v. City of Crescent City, 84 Cal. Rptr.2d 179, 186 (Cal. App. 1 Dist. 1999) (municipal supplier is not held to the same duty as a private utility to serve the present and prospective needs of the service area).

65. Serpa v. County of Washoe, 111 Nev. 1081, 1083–84, 901 P.2d 690, 691–692 (1995), holds that Washoe County (Reno) can prohibit five acre or less subdivisions "until a new water source is available," and the county's action did not impair state water rights because the power to define rational growth "includes the ability of a county government to determine water availability for itself." Accord Schofield v. Spokane County, 980 P.2d 277, 281 (Wash. App. 1999) (county has power to deny rezoning for riparian land because no central sewer system existed to serve proposed ranchettes); City of Attalla v. Dean Sausage Co., Inc., 889 So.2d 559, 569 (Ala. Civ. App. 2003), cert. denied as to one party (state order to financially strapped city to improve antiquated sewage sufficient reason to terminate previously extraterritorial service); and Gould v. Santa Fe County, 37 P.3d 122, 127 (N.M. App. 2001) (county improperly granted variance to allow subdivision of 20-acre minimum lot in water stressed area to permit extended family to live together because it was personal rather than statutory factors; the ordinance allowed family transfers for cultural reasons but limited them to lots no smaller than half of the minimum lot size). *Cf.* Wilson v. Hidden Valley Mun. Water Dist., 63 Cal. Rptr. 889, 897-898 (Cal. Ct. App. 1967) (water district may be formed to preserve agriculture community).

66. Rockville is nestled in a scenic pocket of Utah's canyon country, just outside Zion National Park and within rapidly growing Washington County. As Rockville's mayor told a reporter, "The people here have elected to stay little, and we can benefit from the growth of the other communities. We just have to travel there to take advantage of it." Christopher Leonard, *Hot Spots of U.S. Population Growth,* CHRISTIAN SCIENCE MONITOR (June 7, 2005). *Available at* www.csmonitor.com/2005/0607/p03s01-ussc.html.

67. *See* Environmental Protection Agency, *Growing Toward More Efficient Water Use: Linking Development, Infrastructure, and Drinking Water Policies,* 9–11, www.epa.gov/smartgrowth/pdf/growing_ water_use_efficiency.pdf.

68. *See* Notes 76–97, *infra*.

69. *E.g.*, CALIFORNIA GOVT. CODE §66473.7; ARIZ. REV. STAT. §§ 45-401 *et seq*. (1980 Groundwater Management Act) and implementing regulations at Arizona Department of Water Resources, R.12-15-703(b)(Feb. 7, 1995).

70. Nevada requires that all water suppliers prepare conservation plans based "on the climate and living conditions of" the service area, NEV. REV. STAT.ANN. §540.131, and includes weak future supply assessment duties in the state's mandatory comprehensive regional water plans. The plan must only include drought reserves and future growth margins. §540A.140(3)(b).

71. See Kyle Harwood, *Santa Fe Water, Resources and Policy Evolving: "Wet Growth" Regulations,* 36 THE WATER REPORT, p. 22, Feb. 15, 2007.

72. A recently completed master's thesis examining the potential links between water and land use noted that, "Unlike land-use planning . . . water supply 'planning' does not generally provide explicit opportunities for public involvement by current city water users who have ownership in the process, or source-water communities who are not part of the municipal electorate. Most importantly, alternative policy scenarios for obtaining the necessary water supplies are not subject to broad evaluation and public participation." Scott Coulsen, "Locally Integrated Management of Land-Use and Water Supply," 19 (University of Colorado Dept. of Urban and Regional Planning, 2005). The author goes on to recommend coordination of water services by adopting comprehensive plans that are consistent with water supply constraints, including public information on the costs of future water supplies.

73. For two examples of cities securing future water supplies by building offstream storage facilities, see Tarrah Henrie, *Why Some Water Districts Decided to Dam It*, 7 WATER RESOURCES IMPACT 9 (Nov. 2005). For an overview of options for integrating water into land use decision making, *see* Environmental Protection Agency, *Growing Toward More Efficient Water Use: Linking Development, Infrastructure, and Drinking Water Policies*, *supra* n. 67.

74. *See e.g.*, San Diego County Water Authority, 2005 Urban Water Management Plan, www.sdcwa.org/manage/pdf/2005UWMP/FinalDraft2005UWMP.pdf (Dec. 2005). Barton H. Thompson Jr., "Water Management and Land Use Planning: Is It Time for Closer Coordination?" in *Wet Growth: Should Water Law Control Land Use?* 95, 106–117 (Environmental Law Institute 2005) explores the limitations of this strategy including a backlash against stringent use limitations.

75. Editorial, *Lakes Saved*, THE SAN DIEGO TRIBUNE (Jan. 19, 2002).

76. ARIZ. REV. STAT. § 45-401 *et seq*.

77. Ariz. Dept. of Water Resources, R12 15 703(b) (Feb. 7, 1995).

78. Katherine L. Jacobs and James Holway, *Managing for Sustainability in an Arid Climate: Lessons Learned from 20 Years of Groundwater Management in Arizona, USA*, 12 HYDROLOGY J. 52, 58-60 (2004).

79. Populations outside AMAs have doubled since the passage of the Act in 1980, and now total more than one million people. Shaun McKinnon, *Solutions to Water Concerns a Hard Sell to Rural Residents*, THE ARIZONA REPUBLIC (June 28, 2005).

80. Shaun McKinnon, *Developers Cashing in on Weak Water Laws*, THE ARIZONA REPUBLIC (June 27, 2005).

81. Erica Meltzer, *New Water Policy May Curb Homes on Fringes*, ARIZONA DAILY STAR (Dec.13, 2006).

82. *See generally* Ryan Waterman, *Addressing California's Uncertain Water Future by Coordinating Long-Term Land Use and Water Planning: Is the Water Element of the General Plan the Next Step?* 31 ECOLOGY L.Q. 117, 125-131 (2004).

83. CAL WATER CODE §§10910 - 10914.

84. CAL. GOVT. CODE §66473.7(b)(1) (2005). However, if the supplier has less than 5,000 connections, the adequate supply requirement applies to any subdivision that will amount to a 10 percent increase in service connections. *Id.* at §66473.7(a)(1).

85. *Id.* at §66473.7(a)(2).

86. *Id*. at §66473.7(a)(2)(D).

87. CAL. WATER CODE §10910(c) (2005).

88. *Id.* at §10911.

89. Cal. Pub. Res. Code §§ 21000 et seq. (2005)

90. *See, e.g.*, Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova, 40 Cal.4th 412, 150 P.3d 709 (Feb. 1, 2007) (setting forth specific rules governing this evaluation, including requirements that an EIR clearly explain how a project's long-term water needs will be met, what the impacts this would have on supply sources, and how those impacts would be mitigated). Note that this is a disclosure requirement rather than a mandate that water definitely be available; the California Supreme Court ruled that CEQA is satisfied if the EIR fully explains the uncertainties and analyzes their impacts and potential mitigation. *Id.*

91. Planning and Conservation League v. Dept. of Water Res., 83 Cal.App.4th 892, 100 Cal.Rptr.2d 173, 31 Envtl. L. Rep. 20,178, 00 Cal. Daily Op. Serv. 7782, 2000 Daily Journal D.A.R. 10,331 (Cal. App. 2000).

92. Settlement Agreement, www.montereyamendments.water.ca.gov (May 5, 2003).

93. Santa Clarita Org. for Planning the Env't v. County of Los Angeles, 106 Cal.App.4th 715, 131 Cal.Rptr.2d 186 (Cal. App., 2003) (certified for partial publication).

94. For a summary of Florida's program, *see* James R. Cohen, "Water Supply as a Factor in Local Growth Management Planning in the U.S.: A Review of Current Practice and Implications for Maryland," 23–39 (University of Maryland, Urban Studies and Planning Program, 2004).

95. FLA.STAT. §163.3177(b)-(h). *See* Department of Community Affairs, Department of Environmental Protection, Water Management Districts, Agency Coordination of Comprehensive Planning and Water Supply Planning in Florida, November, 2002, *available at* http://my.sfwmd.gov/pls/portal/url/ITEM/1D33C54502871D24E040e88D48520D40.

96. Courts have consistently held that there is no fundamental right to use water from a particular source. The usual rationale is the protection of public health. Thus, a city may prohibit well use and require public water supply hookups. *E.g.* Stern v. Haligan, 158 F 3d. 719 (3d Cir. 1998). Johnson v. Township of Plumcreek, 859 A.2d. 7, 13 (Commwlth. Ct. 2004) rejected the argument that post 9/11 terrorist threats dictate a different result. No imminent risk was found and a city does not have a duty to guarantee that terrorists, who are private actors, will not contaminate a water system. *See generally* Deshaney v. Winnebago County Dept. Social Services, 489 U.S. 189, 109 S.Ct. 998, 103 L.Ed.2d 249, 57 USLW 4218 (1989). Prior cases may be qualified by the Supreme Court's decision in Vill. of Willowbrook v. Olech, 528 U.S. 562, 120 S.Ct. 1073, 145 L.Ed.2d 1060, 68 USLW 4157, 30 Envtl. L. Rep. 20,360, 00 Cal. Daily Op. Serv. 1359, 2000 Daily Journal D.A.R. 1909, 2000 CJ C.A.R. 897(2000)(per curiam), which held that discrimination against a class of one can be the basis for an equal protection challenge to a municipal action. The village denied the Olechs' request to connect to the city's water system because they refused to dedicate a 33-foot easement. Other property owners had been asked only to dedicate 15 feet. The Supreme Court held that a class of one could support an equal protection claim if a municipality acted arbitrarily or wholly arbitrarily. The Seventh Circuit has since required either a showing of ill will or intentional differential treatment. The former is a much higher standard than the latter. The more recent cases treat these as alternative standards, *e.g.* Nevel v. Vill. of Schaumburg, 297 F.3d 673, 680 (7th Cir 2002), but other circuits continue to require ill will. *E.g*. Bryan v. City of Madison, 213 F.3d 267, 276 (5th Cir. 2000), cert. denied, 121 S.Ct. 2081 (2001).

97. See Kyle Harwood, *The Evolution of Wet Growth Regulations: City of Santa Fe*, 7 WATER RESOURCES IMPACT 5 (Nov. 2005). Santa Fe County faces a dilemma of inadequate supply to meet projected demand, leading officials to consider whether to continue supplying water on a first-come, first-served basis or to pursue a more comprehensive approach to link water supply to comprehensive plan priorities. *See also* Julie Ann Grimm, *County Wades Into Long-Range Planning for Water Allocation*, THE NEW MEXICAN (March 1, 2006).

98. Harwood, *supra* note 97 at 6.

99. Arizona Department of Water Resources, Prescott Active Management Area, www.azwater.gov/WaterManagement_2005/Content/AMAs/PrescottAMA/default.htm (accessed March 2006).

100. *See* Doherty v. Ore. Water Res. Dir., 783 P.2d 519, 526 (Ore.1989) (Oregon groundwater management law "does not mandate depletion to the lowest water level from which irrigation water may be profitably pumped today").

101. *See generally* John Hart, *Land Use in the Early Republic and the Republic and the Original Meaning of the Takings Clause*, 94 NW. U.L. REV. 1099 (2000); John Hart, *Colonial Land Use Law and Its Significance for Modern Takings Doctrine,* 109 HARV. L. REV. 1252 (1996).

102. Town of Chino Valley v. City of Prescott, 131 Ariz. 78, 638 P.2d 1324 (Ariz. 1981), *cert. denied*, 457 U.S. 1101 (1982).

103. Town of Chino Valley, 131 Ariz. at 82, 638 P.2d at 1328 (Ariz. 1981)

104. Sorenson v. Lower Niobrara Natural Res. Dist., 376 N.W.2d 539 (Neb. 1985). Nebraska has since moved from its longstanding opposition to groundwater transfers to acceptance of regulated transfers.

105. Lucas v. S.C. Coastal Council 505 U.S. 1003, 112 S.Ct. 2886 (1992).

106. *See generally* Alison Dunham, *Flood Control via Police Power*, 107 U. PA. L. REV. 1098 (1959).

107. Palazzolo v. Rhode Island, 533 U.S. 606, 633 (2001) ("regulatory regime in place at the time the claimant acquires the property at issue helps to shape the reasonableness of those expectations.") (O'Connor, J. concurring.)

108. Lingle v. Chevron, USA, 125 S.Ct. 2074, 2080 (2005).

109. Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Planning Agency, 535 U.S. 302, 321-322 (2002).

110. WALLACE STEGNER AND RICHARD W. ETULAIN, CONVERSATIONS WITH WALLACE STEGNER ON WESTERN HISTORY AND LITERATURE (University of Utah Press, Revised ed., 1990).

111. JOHN HART, STORM OVER MONO: THE MONO LAKE BATTLE AND THE CALIFORNIA WATER FUTURE, 184 (University of California Press, 1996).