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Just a Big Hot Fuss - Assessing the Value of Connecting Suburban Sprawl, Land Use and Water Rights through Assured Supply Laws

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States and localities increasingly recognize the need to link land use and water supply planning. As the populace grows and sprawl continues, the strain on available natural resources, particularly water, makes this recognition all the more important. This Article addresses an increasingly common type of this planning link—"assured supply" laws that require developers to prove they have secured adequate water stock before commencing construction. The Article performs a qualitative analysis of the potential benefits and costs of such laws and finds that, on balance, assured supply laws provide at least five significant benefits: consumer protection, greater holistic project- and agency-level planning, improved efficiencies in water rights allocation, and increased water conservation. Notably, however, these laws appear to do very little to diminish sprawl and, if designed incorrectly, may actually exacerbate it. The Article then extracts five dimensions around which localities might design their assured supply laws to maximize their benefits and minimize possible costs, concluding that such laws are most likely to deliver optimal benefits when they are (1) mandatory, (2) stringent, (3) statewide, (4) broadly applicable, applying to more than only large projects, and (5)
interconnected with broader land-water and environmental planning mechanisms.

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INTRODUCTION

Take one step in Las Vegas and you know you’re not in 1988 anymore. In 1989, developers unveiled the Mirage and Excalibur mega-casino-hotels, and Las Vegas, a city branded “The Meadows” in 1829 by Spanish traders, then briefly settled by Mormon pioneers from 1855-57 as a missionary-mining encampment, ushered in a new era as the entertainment capital of the world—an industrial rebirth of a city consecrated to change. This time, pushed to the side, if not the shadows, was the city’s previous flaunting of every “vice from gambling to prostitution” that gave Las Vegas its reputation as “the moral sinkhole of the country,” and thrust center stage, literally, on “the Strip” was a juggernaut of spectacular, family-friendly tourism-cum-entertainment. No longer was Las Vegas burdened by its old “glitter-speckled image of limousine-riding big shots, stone-eyed card players and forlorn losers with pawn shop tickets in their pockets.” This was the new Las Vegas—a mecca of fun, and often, more clean than not.

So, out went the tired old over-the-top excess of Vegas mainstays like the Dunes, the Silver Slipper, and El Rancho, digs that came complete with a “30-foot plexiglass sultan,” giant high heel shoes “painted silver and studded with light bulbs,” and other neon paraphernalia evocative of times spent, lost, gone, and now, closed, rebuilt, and demolished to the firework celebrations of thousands of

4. Rick Bragg, Las Vegas Is Booming After City Reinvention; Gambling Still Reigns at the Family Resort, N.Y. TIMES, May 4, 1997, at A22. Of course, one might attribute the acceptance of Las Vegas as a place suitable for family vacations as much to changed American mores as to the city’s transformation. See, e.g., Anderson, supra note 2. For an incisive examination of Las Vegas’ recent rise, and some of its impacts, see generally ROTHMAN, supra note 2. For a more under-the-seams look, see PETE EARLEY, SUPER CASINO: INSIDE THE “NEW” LAS VEGAS (2000).
5. The Treasure Island resort, for instance, where “[p]eople line up by the hundreds to see the . . . mock sea battle, complete with pirates[,] makes only about half its money from its casino.” Bragg, supra note 4, at A22.
onlookers. In came the sparkly new over-the-top excess of jumbo resorts such as the Venetian, Mandalay Bay, and Paris Las Vegas, events-unto-themselves boasting gondola rides in mimicked canals, faux beaches with authentic shark tanks, and half-scale Eiffel Towers dominating the night sky. Out of fashion went the smoky must of worn-out nickel-slot rooms backing onto $9.99 all-you-can-eat surf-and-turf buffets. In came the elegance of Wolfgang Puck’s Spago; Aureole’s soaring four-story “wine tower” serviced by women ascending in scanty catsuits at the sommelier’s orders; and the Bellagio’s Italian marble floors, original Picasso paintings, and “man-made lake with 1,200 fountain spouts.” And, out went the kitsch of Liberace, Engelbert Humperdinck, Elvis impersonators, and topless showgirls as the main attraction. In came the glam of Cirque du Soleil, Siegfried & Roy, Celine Dion, and The Killers. The new Las Vegas, in short, is much less the Las Vegas of Casino or The Godfather, Part II, and much more that of Ocean’s 11—the Clooney and Pitt brand, not the Sinatra version.

Las Vegas’ sea change, however, was not simply commercial and cultural. The massive expansion of Las Vegas’ tourism industry naturally brought with it jobs, and with the jobs, people. Between 1990 and 2000, Nevada was, by far, the fastest growing state in the Union, adding nearly 800,000 residents to its 1990 population of 1.2 million—a stunning increase of 66 percent. Las Vegas was the engine driving this growth. During that same decade, Clark County, where Las Vegas sits, itself added more than 634,000 people to its population, an even more staggering increase of 85 percent.


9. This is not even to mention the Mirage’s fifty-foot volcano, the Luxor’s 357-foot glass Egyptian pyramid, or the New York, New York’s mock Statue of Liberty.


11. Wayne Newton, however, persists. See Karlen, supra note 6.

12. As one writer observed, “[T]here are enough Armanis and skinny sideburns in casino showrooms to indicate that Las Vegas no longer belongs just to the legions of blue-haired and mutton-chopped Americans who had been scarifying off the style-conscious for decades.” Id. But cf. Richard Corliss, That Old Feeling: The Show at the Casino, TIME.COM, Nov. 19, 2003, http://www.time.com/time/columnist/corliss/article/0,9565,546855,00.html (chronicling two decades of Las Vegas entertainment spectacles).

13. U.S. Census Bureau, American FactFinder, http://factfinder.census.gov [hereinafter Population Finder]. To obtain these numbers, follow the “DATA SETS” hyperlink to the decennial census, where total population numbers from the 2000 and the 1990 censuses are available for comparison.

14. Id. This figure can be calculated by following the same steps as in note 13 supra, and continuing further to break down Nevada to the county level to see information specific to Clark County. Clark County’s population in 2000 was 1,375,765, whereas in 1990 it was only 741,459.
The net effect of this influx was perhaps unsurprising. Las Vegas began to sprawl in every direction. As one observer put it, "Life in the instant [Las Vegas] suburbs can seem surreal. When driving around, it's almost useless to consult road maps—they're all out of date. Houses are thrown together and occupied even before the streets outside them are paved or the sidewalks poured." Indeed, development in Las Vegas has been so rapid that the area adds about 20,000 new houses annually, at one point crowding many of the area's schools to twice their capacity despite the addition of thirty-one new schools in just two years.

This residential development, moreover, is almost consistently at the city's edge. Between 1990 and 1996, new development in Las Vegas consumed approximately 11,000 acres at the city's outer reaches, while nearly 12,000 acres sat available at the city's urban core. By 2000, Las Vegas' two suburban bookends, North Las Vegas and Henderson to the southeast, also both exceeded the city proper's ten-year growth rate.

And now, developers are planning tens of thousands of new homes in outposts unmistakably distant from the Strip's glitz on the California border in Pahrump, sixty-two miles to the west; in the agricultural Moapa Valley, sixty-five miles to the north; and in Mohave County, Arizona, south of the Hoover Dam, more than fifty miles from Las Vegas. All this, from what was for years a barely noticed whistlestop on the Union Pacific Railroad, a town with only 1,500 residents when it was first incorporated in 1911.

Yet Las Vegas' growth is as much gauge of regional trends than anomaly, statistical outlier. Other western cities have followed suit, even if not quite to the same level of excess. Salt Lake City to the east has undergone a transformation of its own in the past decade and a half. Once a bright, compact city of clean charm and hard work, a place Wallace Stegner called "a mural: metropolitan towers, then houses and

15. Gabriel, supra note 3, at 68.
20. The disconnect between the suburbs and the city center is social as well as geographic. A 2002 survey found that more than 40 percent of Las Vegas residents "seldom, if ever, goes to the Strip to gamble," and only 25 percent "had gone to see a show in the last 30 days." Andrew Ross Sorkin, Is There Life After Blackjack? Ask MGM, N.Y. TIMES, Dec. 26, 2004, at C1.
trees and channeled streets, and then the mountain wall,'" today Salt Lake cannot be contained. It spills the width of the valley floor from the Wasatch Front on the east to the Oquirrhs on the west and around, across, and through the foothills to the north and south. Sprawl is so expansive in Salt Lake City that suburbs now surround the state prison, originally sited for its distance from population centers; they stream up the sides and actually onto the tops of small mountains at the valley’s ends; they extend and morph into exurbs in places rarely mentioned in conversation before the 1990s, some previously not even on the map.

The numbers paint the same picture. From 1990 to 2000, Utah’s population grew over 29 percent, from 1.7 million to 2.2 million, and Salt Lake County roughly mirrored the statistic, its population increasing almost 24 percent. But the sprawling counties around Salt Lake City grew even more: 27 percent in Davis County, 92 percent in Summit County, 53 percent in Tooele County, and 40 percent in Utah County.

Even within Salt Lake County, the cities growing fastest “are five of the six . . . municipalities that are farthest from downtown.”

Salt Lake City’s neighbor to the north, Boise, Idaho, also exhibits the trend. In 1990, Idaho had just over a million residents, but by 2000, it had nearly 1.3 million—an increase of over 28 percent, or the fifth highest rate nationally.

Boise’s growth was even more exaggerated. Ada County, where Boise is located, grew by nearly 100,000 people during this timeframe, a 46 percent increase to a total population of more than 300,000. The corresponding onset of sprawl was much the same as in Salt Lake City and Las Vegas. Where clover, mint, and corn fields grew only years ago in a part of the county ten miles from the city center, the bustling suburb of Eagle now looms. The Boise city dump, once considered far outside town? Residents of the bucolic bedroom community Hidden Springs now drive past it everyday on their way to work.

The ranchland formerly separating the towns in Ada and Canyon counties also is largely gone, now a strip mall monolith between Boise

23. See, e.g., Erin Stewart & Brady Snyder, S.L. County Embraces Sprawl, While City Fights It, DESERET MORNING NEWS (Salt Lake City), Dec. 1, 2005, at A1 (discussing Herriman, Utah).
24. See Population Finder, supra note 13. Follow the steps listed in notes 13 and 14 to obtain information for these states and counties.
25. See id.
27. See Population Finder, supra note 13, and instructions for finding data described in the note.
28. See id.
and its sister city, Nampa. By 2006, all this helped Boise earn the unhappy moniker, the "Northwest’s most sprawling metropolis."

The list goes on. Of the top five fastest growing states from 1990 to 2000, all five were western states, and of the top ten, all but three were western. In fact, of the twelve continental states located west of the Great Plains, only California, Montana, and Wyoming were not among the fifteen fastest growing states in the nation, and California was sixteenth and Montana eighteenth. Moreover, virtually every sizable city in the West urbanized land during this period more rapidly than its population grew. With all its growth, then, the new Las Vegas is very much a symbol of the new West, and the new West is booming—and sprawling.

35. That the West’s cities are sprawling is not really in question, but whether they are more sprawling than other areas is a legitimate inquiry. One recent study, for instance, found that the West “is home to some of the densest metropolitan areas in the nation.” Id. at 1; see also Blain Harden, In West, Elbow Room Has Vanished Cheek by Jowl: High Density Affects Housing, Commuting, Quality of Life, SEATTLE TIMES, Aug. 14, 2005, at A7 (population density of Los Angeles is now 25 percent higher than New York City and twice that of Washington, D.C.). Likewise, of the thirty cities the Sierra Club dubbed “most sprawl-threatened” in 1998, only eight from the West made the list (or twelve of thirty-four mentioned cities if including the four "dishonorable mentions" and "hot spots"). Sierra Club, 30 Most Sprawl-Threatened Cities, available at http://www.sierraclub.org/sprawl/report98/cities.asp (last visited Dec. 5, 2007).

Density, however, while clearly one indicator of sprawl, cannot be the sole measure. Increasingly planners and scholars point to sprawl’s multidimensional nature; different cities sprawl in different ways, and a city that is dense still may exhibit other attributes of sprawl. See Jackie Cutsinger et al., Verifying the Multi-Dimensional Nature of Metropolitan Land Use: Advancing the Understanding and Measurement of Sprawl, 27 J. URB. AFFAIRS 235, 248 (2005) (using seven factors to measure sprawl); see also George Galster et al., Wrestling Sprawl to the Ground: Defining and Measuring an Elusive Concept, 12 HOUSING POL’Y DEBATE 681, 687-98 (2001) (using eight factors). Under these criteria, sprawl, nationwide, does not appear to differ in a statistically significant way based on region, and the question of region appears to be less important in predicting sprawl correlations than population size, city age, and natural boundaries. See Cutsinger et al., supra, at 252-57.
The detrimental effects of sprawl are well documented. By consuming land in a manner that is poorly planned, that encourages automobile dependence, and that pushes development away from city centers on a single-use basis, sprawl imposes numerous societal costs. The costs are financial. Sprawl requires outlying local governments to expend more on services for new residences than those developments provide in tax benefits; it leads to fiscal insolvency in inner cities by eroding existing tax bases; it extorts "tens of billions of dollars a year" in lost time and burned fuel from increased traffic; and it otherwise disrupts the free market economy. The costs are social. Sprawl creates massive inefficiencies in the delivery of government services, including public transportation; it exacerbates housing unaffordability; it facilitates architectural mediocrity and the demise of our nation’s agricultural heritage; and it “leads to community disintegration” and the loss of a sense of place. The costs are racial. Sprawl disproportionately impacts


39. SIERRA CLUB, supra note 37, at 5.

40. See Michael Lewyn, Suburban Sprawl: Not Just an Environmental Issue, 84 MARQ. L. REV. 301, 359–65 (2000); see also SIERRA CLUB, supra note 37, at 2–16; Mark E. Hanson, Automobile Subsidies and Land Use, 58 J. AM. PLAN. ASS’N 60, 60–61 (1992).


42. Freilich & Peshoff, supra note 38, at 191; Kubasek & Frondorf, supra note 41; see also Chris Lester & Jeffrey Spivak, Divided We Sprawl: Suburbs Can’t Escape the Cost of Separation, KAN. CITY STAR, Dec. 17, 1995, at A1.


minority and low-income populations in transportation, in housing, and in pollution— in effect, resegregating the nation. And the costs are environmental. Sprawl consumes green space and wetlands and the ecosystem services they provide; it worsens air quality; it fractionalizes plant and wildlife habitat, including that relied on by endangered species; it makes flooding more likely and more intense by disrupting flood plains; it causes water pollution and prevents groundwater recharge by increasing impermeable surfaces and it hastens the unsustainable consumption of groundwater by encouraging private well use. One commentator summarizes the issue neatly: "[Sprawl's] undisciplined consumption of a finite resource occurs at the expense of our ecosystems, pocketbooks, and society at large, particularly the poor."

In the West, moreover, sprawl and population growth raise another specter. The question of water supply is a constant overlay on almost every issue in this arid region, where rainfall is seasonal, often at the wrong times for agriculture, and even then is not enough. "Average


45. See generally Bullard et al., supra note 38.

46. Freilich & Peschoff, supra note 38, at 190; see also, e.g., Bullard et al., supra note 38, at 939; Robert D. Bullard & Glenn S. Johnson, Just Transportation, in JUST TRANSPORTATION: DISMANTLING RACE AND CLASS BARRIERS TO MOBILITY 7–21 (Robert D. Bullard & Glenn S. Johnson eds., 1997).

47. See, e.g., SIERRA CLUB, supra note 43; Gallagher, supra note 37, at 220–21; Kubasek & Frondorf, supra note 41. For more on the importance of ecosystem services, see generally, for example, GRETCHEN C. DAILY, NATURE'S SERVICES: SOCIETAL DEPENDENCE ON NATURAL ECOSYSTEMS (1997); Andrew Balmford et al., Economic Reasons for Conserving Wild Nature, 297 SCIENCE 950 (2002); James Salzman et al., Protecting Ecosystem Services: Science, Economics, and Law, 20 STAN. ENVTL. L.J. 309 (2001).


49. See, e.g., REED F. NOSS & ALLEN Y. COOPERRIDER, SAVING NATURE'S LEGACY: PROTECTING AND RESTORING BIODIVERSITY 51 (1994); Francesca Ortiz, Biodiversity, the City, and Sprawl, 82 B.U. L. REV. 145, 156 (2002).

50. See, e.g., SIERRA CLUB, supra note 43.


precipitation in Baltimore exceeds 60 inches, in Chicago is about 40 inches per year, and in Phoenix barely reaches seven. More people, however, only mean more demand and, concomitantly, increased stress on the environment where sprawl's inefficiencies occur. In fact, the expansion of residences and suburban yards accounts for the vast majority of this consumption. Utahns use more water per capita—at 321 gallons per day—than any other state in the nation except Nevada, and consumption in Nevada is a stunning 400 gallons per person per day.

Cities and states, however, are not simply sitting on their collective hands over these problems. On both the dilemma of sprawl and the issue of water supply, local governments have been active in seeking solutions. From encouraging “smart growth,” mixed-use, and “brownfields” infill development to erecting growth boundaries and facilitating land trusts for greenspace protection, governments and other regulators have begun addressing the vexing question of sprawl. From instituting instream flow requirements and attempting to restrict groundwater consumption to conducting statewide inventories and rights assessments and instituting subsidies for no-irrigation “xeriscaping” in lieu of forcing acres of

55. Holly Jo Franz et al., An Insatiable Thirst: The Impact of Water Law on Sprawl in the West, 15 NAT. RESOURCES & ENV' T 228, 228 (2001).
58. See NORRIS HUNDELY, JR., THE GREAT THIRST: CALIFORNIANS AND WATER: A HISTORY 515–16 (rev. ed. 2001); Doremus, supra note 54, at 365; Gallagher, supra note 37, at 220.
59. One study estimates that household water consumption on outdoor uses (i.e., primarily landscaping) often approaches 60 percent in much of the West. See RESIDENTIAL END USES OF WATER 114 (Peter W. Mayer & William B. Deoreo eds., 1999) (reporting outdoor uses accounting for over 64 percent of household consumption in San Diego; nearly 63 percent in Denver; 60 percent in Walnut Valley, California; and nearly 58 percent in Boulder, Colorado). In drier climates, the percentage can be even higher—70 percent in Southern Nevada, for instance. See Southern Nevada Water Authority, Water Use Facts, http://www.snwa.com/html/cons_waterfacts.html (last visited Nov. 5, 2007).
60. Jerry D. Spangler & Donna Kemp Spangler, On the Water Front, DESERET MORNING NEWS (Salt Lake City), Sept. 21, 2003, at A1.
61. ROTHMAN, supra note 2, at 210.
Kentucky bluegrass to grow in the desert, states and localities likewise are engaging on how best to manage water resources.63

Yet despite the natural connection between growth, sprawl, and water demand, legal measures formally linking land and water planning are largely recent arrivals on the scene.64 Certainly, state and local governments have begun to address this connection, particularly in the thirsty West,65 but such initiatives until recently have remained remarkably nascent—full of promise yet somewhat experimental and far from universal.

One of the most ubiquitous of these new measures spotlighting the nexus between sprawl, land use, and water demand is the growing phenomenon of assured supply laws: state, county, and municipal measures that require developers to show proof that they will have an adequate water supply for a development before they are allowed to build. In fact, these laws have become so common in the West's last decade-and-a-half of explosive growth that a recent survey showed that nearly two-thirds of western states have some form of assured supply law in place.66 Even among those that do not, many localities within the states have adopted their own measures.67

And the trend is not limited to the West alone. Florida has long sought to connect water and land use planning, and other governments in the typically wetter parts of the country, including Vermont and local


jurisdictions within Maryland, also have more recently begun to institute assured supply requirements.68

The enactment of these assured supply laws on such a widespread basis begs the question: why should there be any fuss over their adoption? The concept that new housing projects must have adequate water seems so obviously uncontroversial as to defy challenge. All homes should have water. And if so many local governments have adopted these laws, it would seem equally obvious that they must add some value.69

Indeed, on their face, assured supply laws would appear to provide clear benefits for municipal planning. Assured supply laws require localities to consider the use of one finite resource—water—in connection with the consumption of another—land—that necessarily implicates water in its development.

On closer examination, however, assured supply laws' immediate appearance of adding value becomes less certain. If water is already a major issue, if states already adjudicate use rights, and if municipalities and zoning boards already grapple with sprawl and new developments, perhaps assured supply laws do not add any real benefit at all, but simply impose another layer of unneeded regulation and administrative cost on the planning process.70 In this context, the relevant question thus becomes a much different one: are assured supply laws just a big, hot fuss over nothing?

This Article addresses that question. Authors previously have touched on the idea of assured supply laws as one of a host of possible new planning tools,71 or outlined the details of specific assured supply

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70. See Abrams, supra note 69, at 8.

71. See, e.g., Angelo, supra note 68; Marc Davies & Brian Ercole, Water Resource Planning Act: Pennsylvania’s Blueprint for Land Development, 23 TEMP. ENVTL. L. & TECH. J. 1 (2004); O’Brien & Markham, supra note 68. See generally WET GROWTH, supra note 52.
laws as a subsidiary part of state water schemes, but the literature to date has been silent on whether assured supply laws add any value of their own, independent of existing land and water planning regimes. This Article attempts to assess these laws' value and concludes that, if designed with the right parameters, assured supply laws can in fact provide significant consumer protection, planning, and environmental benefits.

Part I begins the analysis, parsing the reasons why local governments might adopt assured supply laws and exploring the potential benefits and costs the laws might impose. Next, Part II examines two different examples of assured supply measures currently at work in California and Oregon. Part II then synthesizes those states' approaches, extracting five elements around which assured supply laws may be designed. Following that synthesis, Part III performs a qualitative cost-benefit assessment of assured supply laws using available data, reported cases, interviews with planning experts who implement assured supply laws on the ground, and other discursive evidence not only from California and Oregon but other jurisdictions as well. This assessment reveals that assured supply laws deliver their greatest value in the form of protecting consumers, ensuring holistic planning, creating efficiencies in the water rights allocation process, and encouraging greater water conservation. Assured supply laws are not, however, particularly well equipped to battle one of the key targets often cited as a reason for their enactment: sprawl. In fact, these laws' most significant costs include the possibility of creating false assurance that water supplies have been taken into account, as well as the risks of inciting backlash against the environmental movement and actually exacerbating or inducing additional sprawl. Finally, Part IV takes the five dimensions of potential assured supply policy extracted from the California and Oregon examples and applies those design elements to the actual benefits and costs these laws appear to be creating. Part IV thus concludes that the measures most likely to optimize assured supply laws' benefits are those that are (1) mandatory, (2) stringent, (3) statewide, (4) widely applicable, or more "granular," that is applying to more than only large projects, and (5) connected to broader planning schemes. Conversely, laws designed with the opposite of these features are likely to have the reverse effects—potentially undermining the very reason the assured supply laws were enacted in the first place.

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I. ASSURED WATER SUPPLY POLICY: AIMS AND EFFECTS

The legislative motives behind assured supply laws are as diverse as the actors who promote them. Those advocating for assured supply laws include consumer protectionists, who insist the laws are necessary to prevent homebuyers from being swindled into purchasing land without the basic necessities of modern life; planners, who believe the laws are essential to linking land and water planning; environmentalists, who see the laws as a valuable “smart growth” device to control sprawl; and pragmatists, who view the laws as essential to ensuring that the necessary “resource infrastructure” is in place as populations grow and cities’ borders swell. At the same time, opponents of assured supply laws have included, perhaps predictably, real estate and development interests, who consider the laws unnecessary red tape; local water districts and suppliers, who perceive the measures as threats to their jurisdiction; and “free market” proponents, who believe the laws constitute unneeded regulation.

From all this, assured supply laws have emerged from various “policy windows,” including the onset of drought, dwindling local water supplies, and home construction without secured water, all buttressed by a general, increasing recognition among scholars, planners, and


76. See, e.g., Tarlock & Van de Wetering, supra note 65, at 167 (arguing that linking land and water planning “is not simply an exercise in limiting the pace and location of growth[,] it is an exercise in defining a landscape”); Tracey Kaplan, New Law Links Water Supply to OK of Large Housing Tracts, SAN JOSE MERCURY NEWS, Oct. 10, 2001, at 19A (noting that California’s energy crisis facilitated passage of state’s assured supply law).


78. The classic discussion of “policy windows,” or periods where issues receive greater attention and thus enjoy increased opportunity for political action, is presented in JOHN W. KINGDON, AGENDAS, ALTERNATIVES, AND PUBLIC POLICIES 173–80, 212–13 (1984).
government that good land and water planning must be connected. At their core, the objectives of assured supply laws thus reduce to a trilogy of policy aims from which their potential benefits and costs naturally flow: consumer protection, more “holistic” planning, and environmental protection.

A. Consumer Protection

A chief assumption underlying assured supply laws is that without a regulatory checkpoint homes and offices will be built without sufficient water rights in place. Assured supply laws seek to foreclose this possibility. They attempt to prevent consumer fraud in property purchases, both through the direct impact of leaving homebuyers with “dry” developments and also via the indirect effect of foisting new developments’ water costs onto existing homeowners. “This is the consumer surprise justification for linking water supply to growth regulation.”

1. Potential Benefits

The first potential benefit of assured supply laws in protecting consumers, then, is preventing property purchases that unexpectedly do not have adequate water rights. Particularly for the residential housing market, the obvious benefits that may inure from preventing such transactions are twofold. Consumers, first, obtain in their purchase what they believe they have bought. The old mantra may be caveat emptor, but the reasonable expectation today is that any real property purchase will be accompanied by water sufficient for contemporary living.

Likeewise, assured supply laws may lift the burden of obtaining water rights from the consumer and place them onto the developer. New development has effectively four options for water sources: (1) securing a supply from a public water provider; (2) purchasing rights from a willing seller, such as farmers; (3) “developing” water through sewage effluent

79. See, e.g., Hanak & Browne, supra note 66, at 154; Strachan, supra note 68, at 438–42; Burke, supra note 74; Snyder, supra note 68.
81. See, e.g., Hearing on SB 221 before the Assemb. Comm. on Water, Parks and Wildlife, 2001–2002 Sess. 6 (Cal. 2001) (“Supporters contend that approving new development faster than new water supplies are developed puts existing customers at risk during future droughts.”); Mark Arax, Effort to Link Growth, Water Sparks Battle, L.A. TIMES, Aug. 14, 1995, at 2 (“Backers of the Costa measure—led by farmers who fear getting the short end of future water wars—argue that today’s era of limits demands a more delicate balancing act.”); Increasing number of Dry Lots Sold in Rural Arizona, supra note 73 (“The law makes good sense and protects home buyers . . . .”).
reuse,\textsuperscript{82} desalinization,\textsuperscript{83} or other technological fixes; or (4) installing wells to obtain groundwater.\textsuperscript{84} But when there is not a public water supplier available, or it is unwilling to serve the development, shifting water acquisition to the developer should increase efficiencies. For each of these options, developers should be both savvier and more experienced in acquiring water than the everyday consumer. For example, consumers are unlikely to be familiar with the often time-consuming proposition of dealing with potentially rather opaque water markets\textsuperscript{85}—an “efficiency of expertise,” so to speak, for developers.\textsuperscript{86} Moreover, if a developer is building on more than one lot in a given area, consumers also may benefit from efficiencies of scale, since the developer should be able to minimize transaction costs by acquiring water once for the whole development.

The corollary of these private purchaser benefits is that by protecting consumers, assured supply laws also may benefit the public. Developers reap unjust profits when, in the absence of a contrary requirement, they are able to hide the price of water rights during the initial property purchase transaction—selling homes as though water supplies are assured, when in fact they are not. The likely result is that the expense of acquiring new water actually will be borne by the water district and, by extension, taxpayers in the community as a whole.\textsuperscript{87} If this is allowed to occur, it creates a subsidy for new development.

This risk, in fact, is quite real. Today, most water providers, even in the West, continue to charge rates set at their average system costs, rather than at the typically greater marginal cost of the new subscribers.\textsuperscript{88} Assured water supply laws may stop this cost shifting by forcing the developer to internalize the cost of water. In this sense, assured supply laws act as what might be termed a “resource” impact fee. They force new development to pay for its share of the resource “commodity”—the water supply—that will be transported by the impacted infrastructure—the water facilities—regardless of whether a development goes “dry” by actually running out of water.

\begin{thebibliography}{99}
\bibitem{83} See generally, e.g., Jared Huffman, Moderator, \textit{Desalination in California: Should Ocean Waters Be Utilized to Produce Freshwater}, 57 HASTINGS L.J. 1343 (2006).
\bibitem{84} See Abrams, \textit{supra} note 69, at 3.
\bibitem{85} See Kasler, \textit{supra} note 77.
\bibitem{86} See id.
\bibitem{87} See Abrams, \textit{supra} note 69, at 2.
\bibitem{88} See, e.g., Barton H. Thompson Jr., \textit{Water Management and Land Use Planning: Is It Time for Closer Coordination}, in \textit{WET GROWTH}, \textit{supra} note 52, at 95, 103; Speir & Stephenson, \textit{supra} note 37, at 65.
\end{thebibliography}
2. Potential Costs

The potential consumer costs of assured supply laws are effectively the mirror image of their potential benefits. One is redundancy. There is a risk that assured supply laws simply duplicate a consumer protection function that another actor already performs. It is reasonable to expect that the financial community would not allow real estate sales that do not either come with sufficient water supplies attached or fully disclose the fact that they do not. It is a trite but true saying in the West that “water flows uphill toward money,” and, of course, where money is concerned, lenders are most cautious. “Ask this: ‘Would a prudent bank or investor put large amounts of money into a water-dependent undertaking without making a due diligence inquiry into the water rights supporting the project?’”90 One would expect the rational investor either to have assured herself that there will be sufficient water supplies or to have determined that the market will accept the risk of dry development, presumably through lower prices.91

There is also a risk of redundancy in the local planning commission itself. Expert planning officials charged with carefully assessing the likely impacts of proposed developments should not need explicit direction on every factor they must consider to take into account the “obvious” fact “that land use patterns drive water demand.”92 If assuring that new developments have adequate water supplies is a prudent objective, there is no reason to assume that local planning agencies will not step into the role of pursuing this goal. In fact, a recent survey of California jurisdictions indicates that independent of the state's assured supply laws, “55 percent of all cities and four out of five counties . . . have some form of local policy linking subdivision approval or residential construction-permitting to water supply conditions.”93 Assuming that assured water supply laws should emerge where they are needed most, the fact that so many local jurisdictions already contemplate water in their

89. MARC REISNER, CADILLAC DESERT 13 (1986).
90. See Abrams, supra note 69, at 9.
91. Or, of course, lenders may rationally believe there is no risk at all to them because the local government or water provider will simply extend service to the new development. But this kind of private cost avoidance is not a sign of redundancy; it is an indication of cost-shifting to the public that may indicate a market failure. It is, in other words, evidence of a hidden subsidy for new development—precisely what assured supply laws seek to protect against. See supra notes 87–88 and accompanying text.
decisionmaking may mean the need these laws purport to fill is already met.

A second potential cost of assured supply laws is that they may increase the price of housing. This is the flipside of forcing developers to internalize water costs: if developers are compelled to pay for water rights they otherwise would not have obtained, then they are likely to pass this cost on to the purchaser, a response the literature appears to confirm. How much this cost pass-through raises home prices will certainly vary, but it potentially could be significant, particularly if water supplies are already tight. One might also argue that such increases are discriminatory to new homebuyers, because current residents historically were not required to fund their water supplies on a marginal cost basis.

There are other price-related factors to consider. In a housing market where sufficient residences are already scarce, such as California, the possibility of any price increase may only “make it more difficult for families to put roofs over their heads.” Particularly if the increases apply to lower income residents, assured supply laws may raise an equity issue, because even price increases on the lower end of the spectrum are likely to “account for a higher share of costs for lower-priced housing” than for the upper-middle class and wealthy. Likewise, increased housing prices may exacerbate sprawl’s effect of segregating racial and ethnic minorities out of single-family suburban developments by raising the hurdle to purchasing homes in those neighborhoods that much higher. Where these effects occur, assured supply laws may in fact provide the benefit of preventing developers from externalizing their water costs onto the public as a whole, but do so only at the expense of deepening societal divisions.

B. Holistic Planning

Calls for the integration of land use and water planning have grown only louder and more frequent in recent years. Although the natural connection between land and water would seem obvious, water supply


96. Walters, supra note 77.

97. Hanak & Browne, supra note 66, at 156.

98. See Bullard et al., supra note 38, at 938–41.

and land use planning traditionally have been disconnected because they typically are "the separate responsibility of different levels of government." Now, however, states are "slowly linking water and land use policy and giving local communities a greater voice in the allocation of water." Assured supply laws thus can be seen not simply as consumer protection measures, but also as one way in which the barriers between governmental jurisdictions are being broken down to connect land and water planning.

1. Potential Benefits

The benefits of making planning more integrated or "holistic" may occur at both a broader and a narrower level. The broader level is coordination on a statewide, watershed, or even regional basis. Regulators, planners, and scholars long have advocated the need to manage water supplies on the basis of the watershed or basin from which supplies are withdrawn, and holistic planning takes this concept to the next step. Assured supply laws may make existing regional policy goals of tying land use and water planning together less hortatory and more substantive simply by adding a measure of concreteness that otherwise does not exist: if local governments must satisfy enforceable, measurable requirements to show real water supplies in their project-specific decisions, the "soft" hammer of the planning process suddenly becomes much harder.

100. Tarlock & Lucero, supra note 64, at 972.
102. See, e.g., Hearing on SB 221 before the S. Comm. on Agriculture and Water Resources, 2001–2002 Sess. 4 (Cal. 2001) ("[The] bill provides a much needed link between the planning decisions made by cities and counties and the amount of water available for development . . . ."); Hearing on SB 901 before the S. Comm. on Housing and Land Use, 1995–1996 Sess. 1–2 (Cal. 1995) ("Water official worry that cities and counties plan new development without reviewing the effects on water supplies. They want the Legislature to require a closer link between land use planning and water planning.").
104. See Tarlock & Lucero, supra note 64, at 975; cf. Waterman, supra note 74, at 139 (noting need to implement general plan objectives of integrating land and water use planning through specific, local decisions).
Consider a simple assured supply example. If a city approves a 15,000-home development\footnote{Developments of this size are not fictional. See, e.g., Karima A. Haynes, Suit Settlement Clears Way for Newhall Ranch, L.A. Times, Apr. 1, 2004, California, at 3 (noting that Newhall Ranch, northwest of Los Angeles, will be over 20,000 homes upon completion).} based on the local water provider’s determination that it has sufficient long-term supply, but the water provider’s assessment was erroneous because it relied on a regional water plan that failed to acknowledge the loss of substantial groundwater from, for example, recently discovered MTBE contamination, then the city’s adequate supply determination is emptied of content. Thus, to ensure that local decisions achieve more than merely pretending to comply with statutory requirements, assured supply laws may bootstrap state or regional planners into more meaningful holistic planning themselves.

Assured supply laws likewise may facilitate greater holistic planning on a project-specific basis. By definition, embedding the question of water supply into land development decisions makes those decisions more holistic than if water supply were not taken into account at all. Assured supply laws also may encourage localities to make their project planning more holistic generally. Return to the 15,000-home subdivision example. If the developer needs to demonstrate it has secured 7,500 acre feet of water to satisfy an assured supply requirement,\footnote{An acre foot is the water necessary to cover an acre of land a foot deep, or 325,853 gallons. “As a general rule of thumb, practitioners now estimate that one-half acre-foot is enough water to supply the water needs of one family for a year.” Waterman, supra note 74, at 120 n.3.} but the developer can show that xeriscaping yards in the subdivision will reduce that demand to 6,500 acre feet, or project opponents can show the subdivision’s real impact is to consume far more than 7,500 acre feet because it is poorly designed, causes wetland loss, and increases impervious surfaces, suddenly the local zoning commission has before it considerable land-water interaction evidence that would not necessarily have been taken into account in the pre-assured supply world.

There are at least three significant benefits that arise from this kind of increased holistic planning, whether regional or local.

First, holistic planning can make decisionmaking more effective. Because “land and water are inextricably interconnected,”\footnote{Arnold, supra note 52, at 22.} how land is used directly affects how much water is available, and how water is used shapes the consumption of land. Thus, if planning is fragmented, planners may make decisions for one resource that ignores its effects on the other.\footnote{E.g., id. at 33.} Making planning holistic puts these resource decisions back together.\footnote{See Tarlock & Lucero, supra note 64, at 973–74.}

105. Developments of this size are not fictional. See, e.g., Karima A. Haynes, Suit Settlement Clears Way for Newhall Ranch, L.A. Times, Apr. 1, 2004, California, at 3 (noting that Newhall Ranch, northwest of Los Angeles, will be over 20,000 homes upon completion).

106. An acre foot is the water necessary to cover an acre of land a foot deep, or 325,853 gallons. “As a general rule of thumb, practitioners now estimate that one-half acre-foot is enough water to supply the water needs of one family for a year.” Waterman, supra note 74, at 120 n.3.

107. Arnold, supra note 52, at 22.

108. E.g., id. at 33.

109. See Tarlock & Lucero, supra note 64, at 973–74.
poor planning as the cause of environmentally inappropriate development and planners [to] point to the shortcomings of water management regulatory programs as the cause of environmental woes."  

By recognizing the principle that "we should treat things that are substantially interrelated in an integrated manner," holistic planning creates a higher probability that the decisions planners make will actually have the effects they intend.

Second, holistic planning makes resource decisionmaking more efficient. Holistic planning may make it easier and less expensive for localities to achieve their objectives because coordinating with water planners should give them access to valuable information and expertise they otherwise would not have had. Similarly, local agencies that coordinate to perform holistic planning may rely on each other to perform tasks that one agency is more proficient at, or they may pool employees in joint taskforces or committees that neither agency's staff could perform alone. And holistic decisionmaking may make planning more efficient by keeping options open: when water and land use planning are coupled earlier on, planners can build greater flexibility into their decisions.

Third, holistic planning can make resource decisionmaking more robust. This may occur in a number of ways. Perhaps foremost, combining land use planning and water management is likely to infuse a greater measure of social values into water decisions. Presently, most water management decisions are made under a microeconomic framework of constrained cost optimization, so that managers focus on extracting the greatest possible value out of the available resources for the least cost, constrained only by direct public health and environmental quality limits. Merging land use and water resource planning, however, should allow the broader "economic, social and environmental values" that traditionally have been given "far more equal treatment" in land planning to take a role in water management as well. Similarly, coordination between different decisionmakers with separate planning worldviews should allow for a kind of policy cross-pollination that may cause both sets of planners to reexamine their current strategies from a new perspective, or to adopt best practices from the other side. "Any

110. Angelo, supra note 68, at 224.
111. Arnold, supra note 52, at 23.
112. See Waterman, supra note 74, at 174, 194–95.
113. Cf. id. at 194–95.
114. O'Brien & Markham, supra note 68, at 5.
116. Id. at 159.
requirement that forces one agency to consult with another creates an opportunity to build relationships, develop more sophisticated analyses, and to treat the subject more comprehensively. By definition, more complete planning is more robust planning.

Finally, separate from the planning synergies they may create, assured supply laws may add a new efficiency in the water rights allocation process. Most waters in the West are overappropriated; the “paper” water rights do not match up to the “wet” water actually in the stream. Many states have been conducting comprehensive adjudications of their surface rights, but even these adjudications leave these rights generally (if less) overappropriated, as they typically focus on abandonments and forfeitures rather than performing full-fledged hydrological assessments that first match real water to senior rights and then tamp down all junior claims. Thus, with the exception of Colorado, builders who obtain water for a development are likely to have acquired rights that are imperfect. But the assured supply requirement has the potential to remedy this problem. Rather than allowing growth to simply perpetuate imperfect water rights—subject to potentially costly and time-consuming litigation later—assured supply laws can serve as an up-front checkpoint by which developers must show that their supplies are real. This is not to say that assured supply laws will solve the problem of overappropriation in toto. At worst, however, they should give potentially harmed rights-holders a forum in which to protest before new development begins and, at best, may help, piece by piece, to reduce overappropriation where rights about to be turned over are more carefully scrutinized in the assured supply process.

2. Potential Costs

Despite these potential benefits, there are also possible planning costs associated with assured supply laws.

The first is the counterpoint to holistic planning. Rather than helping integrate land and water planning, there is a danger that compelling local planning boards to contemplate water in every land decision risks distorting that process by shifting the focus to a side issue. Imagine an ideal small city with planners who already think holistically, citizens who already conserve water, and a secured, abundant, hydrologically viable long-term water supply. Forcing this city’s planning commission to take

118. E.g., Cosens, supra note 103, at 970 n.98.
119. See, e.g., Abrams, supra note 69, at 5.
120. See infra note 367 and accompanying text.
121. See infra note 365; see also John E. Thorson et al., Dividing Western Waters: A Century of Adjudicating Rivers and Streams, 8 U. DENV. WATER L. REV. 355, 442 (2005).
water supply into account every time it approves a tentative subdivision plat serves no meaningful purpose. The city already knows it has enough water for the growth, has already considered the impact of its land use decision on that supply, and, if left to its own judgment, would rather use its limited budget to conduct additional community outreach or traffic pattern assessments than to double-check a water supply it has previously calculated.

Another problem of distortion likewise may emerge. To the extent blessing poorly conceived developments as having assured water supplies gives those projects an air of legitimacy, the effectiveness of the planning process is warped even further.\textsuperscript{122}

A similar concern is that assured supply requirements will increase planning costs and time. Clearly, planning agencies must expend additional staff resources to perform additional assessments, and if the agencies’ staffs are not already versed in the subject matter, those costs will be even higher. The learning curve for land planners attempting to consider water supplies for the first time may be quite steep. “Land use planners and water managers live in very different worlds and speak very different languages.”\textsuperscript{123} Simply learning how to translate the language of a water manager into one land planners can use may be difficult enough, but when all the physical, seasonal, and environmental complexities that can impact water availability come into play, the task is only that much more immense.\textsuperscript{124}

Another set of potential costs of assured supply laws stem from the problem, quite aptly dubbed in this context, of “symbolic assurance.”\textsuperscript{125} The risk is this: if a state legislature or local government puts an assured supply requirement in place, but the water rights in the region, for whatever reason, remain ill-defined, the public may believe a problem has been solved when in fact nothing at all has been averted. New homes still may be built with the very real possibility of going “dry” in future or drought years, even though a “determination” of adequate supply has been made.

In the realm of traditional environmental regulation, Professor John Dwyer has identified two collateral costs that this kind of symbolic legislation may have. Both potentially apply to assured supply measures. The first is that “[b]y making promises that cannot be kept, and thus forcing [the agency] to reformulate public policy, [the legislature may] indirectly undermine[] public confidence in the Agency’s competence and

\begin{footnotes}
\item[\textsuperscript{122}] See Abrams, supra note 69, at 8.
\item[\textsuperscript{123}] Angelo, supra note 68, at 225.
\item[\textsuperscript{124}] See id.
\item[\textsuperscript{125}] See Abrams, supra note 69, at 9; Jocelyn Drennan, Lassoing the Loophole: The Need to Rope in the Use of the Domestic Well Loophole by Subdividers in New Mexico, 37 N.M. RESOURCES J. 923, 951 (1997).
\end{footnotes}
good faith." So, too, with assured water laws. No matter what the legislature’s intent, if it adopts an assured supply law but then overlays it on a broken allocation of water rights, the likely result is that the implementation of the law will convert an otherwise genuine restriction on developments lacking secure water supplies into a meaningless one that permits construction on the mere promise of future water. The net effect is that rather than providing a solution, the assured supply law only “obfuscate[s] the water supply problem and actually increase[s] the chances of one of the very evils they are intended to prevent, over-allocation of water.” In so doing, moreover, the local agency does not just transform a substantive requirement into a game of make-believe, it erodes the public’s faith in its ability to protect its constituents.

The second collateral problem of symbolic legislation is delay. The risk is that once legislators have expended the political capital necessary to put an assured supply law in place, they will not be willing to spend more of this limited resource to pass other directives whose immediate benefits may not appear as concrete or reducible to sound bites, but whose actual effect in protecting the environment, stopping sprawl, or clarifying water rights may be more important and lasting. As Professor Buzz Thompson has argued, “Faced with a choice between two difficult tasks, reformers would be better off focusing their attention on the environmental problems themselves rather than on land use decisionmaking, which constitutes only one of a number of forces placing pressure on the nation’s water resources.”

C. Environmental Protection

Driven by sprawl and the scarcity of water, one expectation of assured supply advocates is that these laws will produce real environmental benefits—not simply as ancillary effects from a better planning process but more directly as well. “[O]ur problem is not merely sprawl itself. Our problem is that we make decisions about using land without evaluating, modifying, or limiting our land uses so as to minimize, mitigate, or avoid harms to water or water-related ecosystems.” According to those who propound them, assured supply laws are one

128. Dwyer, supra note 126, at 277–78.
129. See Thompson, supra note 88, at 109; Waterman, supra note 74, at 123; Tarlock & Lucero, supra note 64, at 975–77.
130. Thompson, supra note 88, at 110.
131. Arnold, supra note 52, at 31.
solution to these problems. The countervailing risk is that these laws may not benefit the environment at all, but may harm it instead.

1. Potential Benefits

Many advocates of assured supply laws view them as tools to limit suburban sprawl, and this is their first potential environmental benefit. If assured supply laws can help rein in a phenomenon that inflicts so many detrimental environmental effects, their utility might be validated on this ground alone. Indeed, for environmentalists and land use planners trying to “slow down or block” sprawl, assured supply laws might be tapped as a way around “more direct” antisprawl measures that have proven ineffective or politically unpalatable. The idea is simple: because assured supply laws do not allow development that lacks water, then where water is unavailable, development should be stopped.

Beyond actually stopping sprawl, moreover, assured supply laws might be precisely the kind of “smart growth” device that can help ensure that, to the extent it does occur, sprawl takes place in a less environmentally offensive way. A new subdivision that is built where adequate water exists should have less of an environmental impact than one that will later require importing water from vast distances or, worse, straining the local ecosystem by reducing instream flows or unsustainably depleting groundwater supplies.

Some assured supply laws also have been designed with the intent not of reducing sprawl, but of mitigating the groundwater overconsumption, or groundwater “mining,” that sprawl can cause. There are numerous ways localities might use assured supply laws for this purpose, from imposing more stringent assured supply requirements in areas where groundwater consumption is increasing, to combining assured supply requirements with flat bans on new wells in areas of overdraft.

Arizona’s approach is perhaps the most intricate and certainly the longest standing. In 1980, Arizona adopted its Groundwater

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132. See, e.g., Thompson, supra note 88, at 97; Editorial, Growth Planners Must Find Water First, S.F. CHRON., Sept. 25, 1995, at A18 (“California is just one pen stroke away from ending one of the greater scandals of a quarter century of mismanaged sprawl: the lack of any connection between growth and water availability.”); Vogel, supra note 75 (noting that California’s assured supply law was “[h]ailed by proponents as a rational way to regulate growth”).

133. Thompson, supra note 88, at 97.


135. Thompson, supra note 88, at 113.

136. See A. Dan Tarlock, We Are All Water Lawyers Now: Water Law’s Potential But Limited Impact on Urban Growth Management, in WET GROWTH, supra note 52, at 57, 70.
Management Act (GMA), which designates much of the state as groundwater Active Management Areas (AMAs). Subdivision developers cannot build within an AMA unless they first show that they have acquired an “assured” water supply from one of two sources: a “city, town or private water company designated as having an assured water supply” by the state Department of Water Resources, or by obtaining a Certificate of Assured Water Supply using independent water resources. Because the Arizona GMA aims at reducing groundwater overdraft, the law also places restrictions on what groundwater can be counted in determining whether there is a sufficient water supply. Likewise, the statute promotes use of surface water from the Central Arizona Project (CAP), a 336-mile, $3.6 billion aqueduct that runs from Lake Havasu City on the Colorado River to just south of Tucson. And, even when developments are allowed to extract groundwater, they are encouraged, in the Phoenix, Pinal, and Tucson AMAs at least, to “recharge[]” the withdrawals by pumping water from outside the AMA back into the ground inside the area of original withdrawal. The


138. ARIZ. REV. STAT. ANN. §§ 45-402, 45-411 (2007). The five current AMAs—Phoenix, Pinal, Prescott, Santa Cruz, and Tucson—comprise more than 80 percent of Arizona’s population and 69 percent of the state’s groundwater overdraft. See Glennon, supra note 72, at 90 n.2.


140. See ARIZ. ADMIN. CODE § R12-15-703(B)(2) (limiting the sub-surface depths from which groundwater may be extracted); id. § R12-15-722(A) (limiting the quantities of groundwater that may be extracted in the AMAs).


142. Ariz. Dep’t of Water Resources, Assured Supply Program, supra note 139, at 7–8. However, for criticisms of the mechanism used to replenish such groundwater overdraft, see Rita Pearson Maguire, Patching the Holes in the Bucket: Safe Yield and the Future of Water Management in Arizona, 49 ARIZ. L. REV. 361, 375–76 (2007); Jack A. Vincent, Comment,
putative objective of all this is to "conserve, protect and allocate the use of groundwater" to a "safe-yield" level of annual groundwater withdrawal by 2025.143

Assured supply laws also may conserve water in a different way. Domestic water use has grown dramatically in recent years, nearly doubling nationwide between 1960 and 1990, while the population increased by only 75 percent.144 Yet some of the most effective ways to decrease domestic water consumption include mechanisms that are most easily installed in new construction. Programs that use extra "low-flow toilets, low-flow showerheads, and water-efficient irrigation technology," for instance, "can decrease water demand by 10% or more."145 Assured supply laws may create additional incentives for builders to use these technologies in their developments, even beyond existing requirements.146 Most directly, a developer that can show its subdivision requires less water due to such demand-side technologies generally should face lower water acquisition costs under the applicable assured supply law. And regardless of the direct amount of that cost reduction, builders still might benefit from using environmentally friendly technology by marketing their projects as "green."147 Particularly in areas already tight on available water, one would expect the socially conscious consumer to place at least some price premium on socially conscious development.

A final possible environmental benefit is that assured supply laws may help increase public participation by making the question of water supply more visible. This effect might be deemed a planning benefit just as easily as an environmental one, but there is increasing concern among the public, government officials, and advocacy groups that environmental decisionmaking that fails to include real and effective public participation


143. ARIZ. REV. STAT. ANN. § 45-401(B) (2007). The statute, however, has largely failed to meet this objective. See Glennon, supra note 72, at 95; see also Robert Glennon, The Price of Water, 24 J. LAND RESOURCES & ENVTL. L. 337, 339 (2004); Barton H. Thompson, Jr., Tragically Difficult: The Obstacles to Governing the Commons, 30 ENVTL. L. 241, 253 (2000).

144. Thompson, supra note 88, at 103 n.30. Of course, the most effective way of decreasing consumption is likely by combining better technologies with more realistic, marginal water pricing. See, e.g., id. at 104; David S. Brookshire et al., Western Urban Water Demand, 42 NAT. RESOURCES J. 873, 875 (2002); Thompson, supra note 95, at 758. But local governments typically disfavor price increases for short-term political reasons. See, e.g., Glennon, supra note 143, at 338–40.

is flawed decisionmaking. Former EPA Administrator Carol M. Browner summarized the sentiment: "In all its programs, EPA must provide for the most extensive public participation possible in decision-making. . . . Our willingness to remain open to new ideas from our constituents, and to incorporate them where appropriate, is absolutely essential to the execution of our mission." Thus, the likelihood that assured supply laws will increase public participation is categorized here as an environmental rather than planning benefit, though greater public involvement clearly should improve planning as well. Where authentic participation increases because of assured supply laws, decisionmaking becomes more legitimate, and when decisionmaking is more legitimate, the ability of resource managers to protect the environment is enhanced.


2. Potential Costs

While many environmentalists have espoused assured supply laws as a way to control sprawl, there is a risk that these measures may have the opposite effect and actually exacerbate unplanned suburban development. Assured supply laws are essentially a natural resource version of public facility “concurrency” laws—restrictions on new housing development that does not have adequate infrastructure such as gas, electric, and sewage utilities in place. Utility concurrency laws, however, have been criticized as ineffective at sprawl management. One official from Summit County, Utah explains:

[W]e do not view water concurrency as an effective growth control tool... While many people may view the difference between growth control and growth management as semantics... there is a substantive difference. One set of tools limits the amount of growth... while the other set of tools tries to deal effectively with the growth that is allowed or will occur....

The point is that concurrency laws cannot stop growth but can only move it around. If concurrency laws like assured supply measures are adopted near the urban core but not in outlying lands, the logical consequence is to push development outward rather than bridle it in. Professor Edward Ziegler in fact has observed this outcome with local growth control policies that seek to stop sprawl but end up contributing to it by encouraging development to move outside the growth boundary. It is the risk of assured supply laws as well.

The last potential cost of assured supply laws is a somewhat more indirect one. There has been, for some time now, a growing backlash to the environmental movement, or what Paul and Anne Ehrlich would call a “brownlash.” This environmental recoiling occurs in many forms,


153. Strachan, supra note 68, at 457–58 (quoting Eric Schifferli, Commissioner, Summit County, Utah).


155. PAUL R. EHRLICH & ANNE H. EHRLICH, BETRAYAL OF SCIENCE AND REASON: HOW ANTI-ENVIRONMENTAL RHETORIC THREATENS OUR FUTURE 1 (1996). The Ehrlichs coined the phrase primarily in terms of using pseudo-science to attack the movement; here it is used with a broader connotation.

156. For a brief overview of the backlash against the modern environmental movement, see Lincoln L. Davies, Lessons for an Endangered Movement: What a Historical Juxtaposition of the Legal Response to Civil Rights and Environmentalism Has to Teach Environmentalists
but one of the most virulent strains, in the United States at least, is the belief of some property rights activists that any restriction on one's land is unethical and un-American.\textsuperscript{157} Assured water supply laws risk running headlong into this thinking. In addition, assured supply laws may draw heavy backfire from the real estate industry, who may see the laws as an unnecessary regulatory impediment, or from other prodevelopment supporters, who view the world through the lens of short-term gains rather than long-term carrying capacities. As the Ehrlichs describe, "Many businesspeople see environmental regulations as both financially crippling and mindlessly bureaucratic, designed more to drive a stake through the heart of free enterprise than to improve human well-being."\textsuperscript{158} To the extent assured supply measures become flagged as hampering economic development without any real benefit, they may actually undermine adoption of the kind of common sense, holistic planning they seek to foster—in turn fanning the embers of the backlash burning against the environmental movement as a whole.\textsuperscript{159}

II. ASSURED WATER SUPPLY LAW: THE CASES OF CALIFORNIA AND OREGON

Although the emergence of assured supply laws is a relatively recent phenomenon, the laws' collective newness has not stopped states and localities from tinkering with their parameters from the outset. A recent analysis identified ten different approaches to making the land use–water connection through assured supply requirements of some level or another in every one of the ten most western states in the continental United States.\textsuperscript{160} Though these requirements share a common purpose, they also display numerous differences. Parsing how these distinctions relate to the policy benefits and costs that assured supply laws provoke is the task of Part IV, below. Here, the stage is set, first by contrasting the nuts and bolts of how states actually implement assured supply policy from two representative assured water supply models from California and Oregon, and then by extracting from those two examples the general design elements around which assured supply laws may be built.

\textit{Today}, 31 ENVT'L. L. 229, 335–43 (2001). For more in-depth treatments, see generally \textsc{Ehrlich \& Ehrlich}, \textit{supra} note 155; \textsc{David Helvarg}, \textit{The War Against the Greens: The "Wisdom Movement, the New Right, and Anti-Environmental Violence} (1994); \textsc{Andrew Rowell}, \textit{Green Backlash: Global Subversion of the Environmental Movement} (1996); \textsc{Jacqueline Vaughn Switzer}, \textit{Green Backlash: The History and Politics of Environmental Opposition in the U.S.} (1997).


158. \textsc{Ehrlich \& Ehrlich}, \textit{supra} note 155, at 175.

159. \textit{See} Davies, \textit{supra} note 156, at 356–59 (describing the need for environmentalists to avoid zero-sum and apparently zero-sum politics).

A. California

California's law is perhaps the most-cited state assured supply measure, despite being one of the most recently enacted. The state's first approach was enacted in 1996, informed by the severe, six-year drought that gripped California from 1987 through 1992. In the ensuing political aftermath—fueled further by a lengthy dispute over the East Bay Municipal Utility District's ("East Bay MUD") refusal to supply water to a $4 billion, 11,000-home development in the San Francisco Bay Area—the California legislature in 1995 adopted a law formally linking development with the availability of water. The measure, Senate Bill (S.B.) 901, sought to achieve this goal through dual mandates: it required localities to discuss and evaluate water supplies with their water providers when developing or amending their general land use plans, and it compelled any major planning action that required an "environmental impact report" under the California Environmental Quality Act to include a supply assessment from a water provider in that report.

S.B. 901, however, was ineffective, largely because it lacked teeth. Gutted by compromise, the law applied only to the most substantial developments—subdivisions with more than 500 homes, hotels with more than 500 rooms, new businesses that employed more than 1,000 people or occupied more than 250,000 square feet of floor space, and the like. S.B. 901 also failed to create any obligation for localities to tie project approvals to water availability; simply assessing supplies was sufficient. Moreover, even when S.B. 901 did apply, localities ignored it. A 2000
study conducted by the East Bay MUD found that "of the 119 large-scale developments subject to SB 901 between 1996 and 2000, only 2% complied with all . . . of its requirements." Nearly a quarter of developments did not comply with the law at all.

The result was that legislative debates renewed, and after "years of vigorous opposition from [r]ealtors and developers," the state legislature in 2001 finally passed two new bills, one that strengthened S.B. 901's requirements, S.B. 610, and another that instituted a new rule altogether: a statewide mandate that moved beyond S.B. 901's consultative requirement and conditioned development on actual proof of an assured water supply, S.B. 221.

1. California's Current Assured Supply Law: S.B. 221

The core requirement of California's new assured supply law, S.B. 221, is straightforward. The law declares that before any "legislative body of a city or county" or other authorized agency may "approve, conditionally approve, or disapprove" a proposed property subdivision, it must "include . . . a requirement that a sufficient water supply be available." Under the statute, a "sufficient water supply" is a source or sources of water that (1) will be "available during normal, single-dry, and multiple-dry years within a 20-year projection" and (2) "will meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses." Thus, if a developer has acquired a water supply that is incremental to water that is slated for other demand in the area and that will meet the needs of its development for 20 years, it has satisfied the assured supply requirement.

The mechanism used by S.B. 221 to implement this basic requirement, however, is more complex. First, S.B. 221 does not apply to all development, a political compromise forged in the state capital. To assuage the objections of developers, S.B. 221 was amended from an earlier proposal that would have applied to any subdivision of 200 homes or more. Instead, the enacted version applies, like S.B. 901, only to subdivisions of "more than 500 dwelling units." Moreover, S.B. 221 does not apply to other developments that consume large quantities of

169. Waterman, supra note 74, at 129.
170. Id.
171. Vogel, supra note 75.
173. In California, this proposal is termed a "tentative map." CAL. GOV'T CODE § 66424.5 (2006).
174. Id. § 66473.7(b)(1).
175. Id. § 66473.7(a)(2).
176. If the water system serving the subdivision has fewer than 5,000 connections, any increase 10 percent or greater triggers S.B. 221. Id. § 66473.7(a)(1).
water, such as industrial parks, hotels, or office buildings, nor does it restrict new construction on unsubdivided lots or the remodeling of existing housing.\textsuperscript{177} Finally, to promote smart growth "infill" development and to encourage more equitable housing, the statute also exempts any proposed "residential project" in an already "urbanized area," as well as "housing projects that are exclusively for very low and low-income households."\textsuperscript{178}

When S.B. 221 does apply, a multistep process ensues. The first step is that either the developer or the local governing body requests the relevant "public water system"\textsuperscript{179} to provide written verification of a sufficient water supply.\textsuperscript{180} The water provider then has ninety days to determine adequacy based on four rather malleable factors: the "availability of water supplies over a historical record of at least 20 years," the applicability of its water supply shortage plan, any potential for reductions in the provider's supply as mandated by local ordinances or contract, and the "amount of water that the water supplier can reasonably rely on receiving from other water supply projects."\textsuperscript{181}

Following this assessment, the water provider then notifies the local government whether it can provide "sufficient" water for the development.

In the event that the provider determines it has an assured supply, its determination must be based on "substantial evidence."\textsuperscript{182} What constitutes substantial evidence is intentionally not limited, but can include (1) the water provider's most recent urban water management plan (UWMP), which public water systems must complete every five years based on their "sources of supply, reasonable and practical efficient uses, reclamation and demand management activities";\textsuperscript{183} (2) a water supply assessment completed under S.B. 901, as that bill was amended by S.B. 610; or (3) any "[o]ther information" that is analytical in nature and "similar to" what is required for the UWMP.\textsuperscript{184} Once a sufficiency determination is made based on acceptable "substantial evidence," S.B. 221's assured supply process is at an end.

By contrast, if the water provider determines that it lacks sufficient water for the project, additional steps may follow. One possibility is that

\begin{footnotesize}
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\item \textsuperscript{177} See id. § 66473.7(a)(1), (b)(1).
\item \textsuperscript{178} CAL. GOV'T CODE § 66473.7(i) (2006).
\item \textsuperscript{179} Under S.B. 221, a "[p]ublic water system” includes any “system for the provision of piped water to the public for human consumption that has 3000 or more service connections.” CAL. WATER CODE § 10912(c); see CAL. GOV'T CODE § 66473.7(a)(3) (2006).
\item \textsuperscript{180} CAL. GOV'T CODE § 66473.7(b)(1).
\item \textsuperscript{181} Id. § 66473.7(a)(2).
\item \textsuperscript{182} Id. § 66473.7(c).
\item \textsuperscript{183} CAL. WATER CODE §§ 10615, 10621 (2006).
\item \textsuperscript{184} CAL. GOV'T CODE § 66473.7(c)(1) (2006); see CAL. WATER CODE § 10635.
\end{itemize}
\end{footnotesize}
the local government can effectively override the water provider's decision. If the locality determines that "additional water supplies not accounted for by the public water system are, or will be, available prior to completion of the subdivision," then the locality itself can make a finding of water sufficiency, as long as it is based on substantial evidence.\textsuperscript{185} Likewise, the local government can work in concert with the developer and the water provider to "secure water supplies sufficient to satisfy" the development's demands.\textsuperscript{186} These release valves in the statute thus leave room for development even if the water provider renders a letter of insufficiency: S.B. 221's point is not to stop development at all if water is not available, but to ensure that local governments are certain new developments will have the water, somehow, before they may proceed.

One final point bears noting concerning S.B. 221's mechanics. S.B. 221's provision allowing UWMPs to demonstrate sufficiency creates both a "vertical" and a "horizontal" planning integration that did not previously exist. The integration is vertical because water providers can rely on their UWMPs in conducting assured supply assessments, thus ensuring that development-specific decisions do not overtax supplies secured for other purposes.\textsuperscript{187} The integration is horizontal because allowing water providers to tie their UWMPs to land use decisions gives providers a better understanding of the actual, on-the-ground developments affecting their supplies, and concomitantly should help land planners realize both the impacts of and limitations on their own approvals. Indeed, the planning integration created by S.B. 221 does not stand alone. The law's companion measure, S.B. 610, takes the integration even further, combining the water supply process not just with land use planning but with broader environmental reviews as well.

2. \textit{California's Additional Assured Supply Requirements: The Overlay of CEQA}

The California Environmental Quality Act (CEQA)\textsuperscript{188} is California's counterpart to the National Environmental Policy Act (NEPA).\textsuperscript{189} CEQA and NEPA serve primarily informational purposes.\textsuperscript{190} By compelling

\textsuperscript{185} CAL. GOV'T CODE § 66473.7(b)(3).
\textsuperscript{186} \textit{Id} § 66743.7(f).
\textsuperscript{187} Although municipalities throughout the state perform various other water plans, the UWMP is the frontline process and addresses the vast majority of California's water demand. \textit{See HANAK, supra note 161 at 32-34.}
\textsuperscript{188} CAL. PUB. RES. CODE §§ 21000-21177 (2006).
\textsuperscript{190} Though the "fundamental purpose" of an environmental impact report under CEQA is "to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment," \textit{Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova}, 150 P.3d 709, 718 (Cal. 2007), as amended
agencies to consider and assess environmental and other effects before approving actions subject to the Acts’ strictures, they encourage input from and participation by the public in shaping those actions. Specifically, CEQA requires public agencies in the state, with only certain limited exceptions, to prepare an environmental impact report (EIR) anytime “substantial evidence supports a fair argument that a proposed project may have a significant effect on the environment.” The EIR is thus “the heart of CEQA.” Through the EIR process, the lead agency considering the CEQA-jurisdictional “project” must first issue a draft EIR, open a comment period for public input on the draft, and then finalize the EIR for decision. In finalizing the EIR, the agency cannot simply ignore public comments. Rather, it must both “evaluate and respond to comments relating to significant environmental issues” and then either address the concerns or “detail its reasons for rejecting suggestions and proceeding with the project despite its environmental effects.” In this way, CEQA serves as “an environmental ‘alarm bell’”—a signal to society and the government alike to confront “environmental changes before they have reached ecological points of no return.”

a. S.B. 901’s Assured Supply Assessments Reinvigorated: S.B. 610

S.B. 610 strengthened the water assessment requirements that S.B. 901 previously injected into EIRs in a number of ways. Foremost, S.B. 610 significantly extended the scope of local actions for which water assessments must be conducted. Under S.B. 901, water assessments were necessary only for a narrower class of major planning actions, such as amendments to the locality’s general plan or specific plan approvals that increased density and necessitated a full EIR. S.B. 610, however, mandated assessments for all actions requiring any form of CEQA review—a much broader group.

upon denial of rehearing (quoting CAL. PUB. RES. CODE § 21061), CEQA departs from NEPA’s purely procedural mandate by also requiring agencies either to mitigate each significant environmental impact they identify or to justify why such mitigation is infeasible. See CAL. PUB. RES. CODE § 21081; see also Cal. Oak Found. v. City of Santa Clarita, 35 Cal. Rptr. 3d 434, 438 (Ct. App. 2005) (“Before approving a project, the lead agency . . . must find either that the project’s significant environmental effects identified in the EIR have been avoided or mitigated, or that unmitigated effects are outweighed by the project’s benefits.”).

194. Id. at 507.
197. See id. § 10910(a).
S.B. 610 also tightened the assessment process by adding extensive requirements for evaluating groundwater impacts. Under S.B. 610, where a jurisdictional project intends to rely on groundwater, the water assessment must include, among other things, (1) “a description of any groundwater basin” supplying the water, (2) a “copy of the order or decree” giving the rights to draft such groundwater, (3) “a detailed description and analysis” of both the amount of groundwater that historically has been pumped by the supplier or locality from that basin and the amount the supplier or locality expects to pump for the project going forward, and (4) an analysis of “the sufficiency” of the groundwater “to meet the projected water demand associated with the proposed project.”

S.B. 610 also imposed additional requirements about what must be said concerning future supplies if an assessment determines that current water entitlements will be insufficient for the project. Specifically, S.B. 610 mandates that the assessment must include the “plans for acquiring additional water supplies,” including the “measures that are being undertaken to acquire and develop those water supplies.”

Nevertheless, S.B. 610 also retained its predecessor’s most significant limitations. S.B. 610’s assessments still only apply to the largest of developments, and nothing in S.B. 610 prevents localities from approving proposed developments in the face of insufficient water. Thus, although S.B. 610 applies to a much broader class of projects than S.B. 221’s effective “super-development” category, S.B. 610 lacks the bite of S.B. 221 because its mechanism is mere information, not compulsion.


Despite the legislative decision not to mandate assured supplies for all actions subject to S.B. 610, California’s courts over the past twenty-five years effectively imposed this requirement on their own. Beginning in the 1980s, a long line of California cases rejected as deficient CEQA analyses that failed to analyze a development’s water supply, examined
water only the first of many years of build-out,204 rested on “paper” water,205 or relied on the future application of S.B. 221 as an assurance of supply.206 In short, a substantive assured supply requirement effectively was inferred from CEQA’s procedural directives: if a locality did not know where a development’s water would come from, it could not know the project’s environmental impacts, and thus could not comply with CEQA. This chain of decisions, however, was not unbroken, and recent decisions raised the question of how stringent the CEQA-invoked assured supply requirement really was.207

In the landmark case Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova,208 issued in 2007, the California Supreme Court addressed this question. At issue in Vineyard was a 6,000 acre, 22,000-home mixed-use development outside Sacramento. The locality had approved an EIR for two phases of the “Sunrise Douglas”

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204. Stanislaus Natural Heritage Project v. County of Stanislaus, 55 Cal. Rptr. 2d 625, 632 (Ct. App. 1996).


206. Santa Clarita Org. for Planning the Env’t, 131 Cal. Rptr. 2d at 192.

207. See Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova, 25 Cal. Rptr. 3d 596 (Ct. App. 2005), rev’d, 150 P.3d 709, 718 (Cal. 2007), as amended upon denial of rehearing. Napa Citizens for Honest Gov’t v. Napa County Bd. of Supervisors, 110 Cal. Rptr. 2d 579, 601 (Ct. App. 2001). The California Supreme Court later highlighted the difference between the Court of Appeal’s Santiago-Stanislaus-SCOPE and Napa-Vineyard lines of cases, noting, correctly, that “none of the [prior] Court of Appeal decisions on point holds or suggests that an EIR for a land use plan is inadequate unless it demonstrates that the project is definitely assured water through signed, enforceable agreements.” Vineyard, 150 P.3d at 721. As a practical matter, however, because these earlier Court of Appeals CEQA decisions typically focused on the absence of environmental information resulting from the absence of assured water, they created something of an effective assured supply requirement: they sent a strong signal that developers wanting their proposed projects to pass CEQA muster should acquire real, “wet” water or risk a regulatory roadblock. See, e.g., Stanislaus, 55 Cal. Rptr. 2d at 195 (finding insufficient EIR where county knew “neither the source of the water the project would use . . . nor what significant environmental effects might be”); Cal. Oak Found., 35 Cal. Rptr. 3d at 448–49 (criticizing EIR for simply “acknowledge[ing] that . . . water supplies may be insufficient”); SCOPE, 131 Cal. Rptr. 2d at 186–87 (“The dream of water entitlements . . . is no substitute for the reality of actual water the SWP can deliver.”); Santiago, 173 Cal. Rptr. at 608 (“The construction of additional water delivery facilities is undoubtedly one of the significant environmental effects of the project. As such, a description of the necessary construction had to be included if the EIR was to serve its informational purpose.”). In SCOPE, in fact, the court actually found CEQA unfulfilled even though S.B. 221 would have later compelled the acquisition of sufficient water for the project. See 131 Cal. Rptr. 2d at 191–92. Thus, it was unsurprising that in seeking review by the California Supreme Court, the appellants in Vineyard characterized CEQA as “requir[ing] that an EIR fully discuss the environmental impacts of supplying a project with water, including analysis of the specific water sources the project will use and the resulting effects on other water users.” Appellants’ Reply to Respondents’ Answer to Petition for Review, Vineyard, 150 P.3d 721 (No. S132972), 2005 WL 1308499 (emphasis added).

208. 150 P.3d 709 (Cal. 2007).
development—a general “community plan” covering the entire project and a “specific plan” for a 2,600 acre portion to be constructed first. Although the locality had approved the EIR, an environmental dilemma remained: where would all these people get water? The EIR had partial answers—a new well field would be constructed and additional water might be diverted from the American River—but the amount of these supplies was not certain. Thus, litigation ensued when the plaintiffs challenged the EIR and project approval. The lower courts found for the defendants, holding that the county properly relied upon “substantial evidence” in approving the project.

On appeal, the California Supreme Court began its analysis by setting forth four parameters that, it held, control CEQA analysis of water supplies. First, localities must actually address the issue of water and may not “simply ignore[] or assume[] a solution to the problem.” Second, CEQA is not satisfied by a few years of water for a multi-year project. Third, and most importantly, the court held that while “speculative sources and unrealistic allocations (‘paper water’) are insufficient” under CEQA, the water relied on by a project need not be available as a certainty, but need only “bear a likelihood of actually proving available.” Fourth, the court explained that where “a full discussion” of water still makes it “impossible to confidently determine that anticipated future water sources will be available,” CEQA requires at least “some discussion of possible replacement sources” and “the environmental consequences of those contingencies.”

The court thus concluded: “If the uncertainties inherent in long-term land use and water planning make it impossible to confidently identify the future water sources, an EIR may satisfy CEQA if it acknowledges the degree of uncertainty involved, discusses the reasonably foreseeable alternatives....

209. Id. at 713–14.
210. Id. at 714.
211. Id. at 716.
212. Id.
213. Id. at 720.
214. Id.
215. Id. (emphasis added).
216. Id. As originally published, the decision indicated instead that “an EIR requires analysis of replacement or alternative water sources where ‘a full discussion leaves some uncertainty regarding actual availability of the anticipated future water sources,’” Santa Clarita Organization for Planning the Environment v. County of Los Angeles, 68 Cal. Rptr. 3d 449, 460, (Ct. App. 2007) (quoting Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova, 150 P.3d 709 (Cal. 2007)) (emphasis added), rather than only when it is “impossible to confidently determine” the availability of future water sources, as the opinion now states. Vineyard, 150 P.3d at 720. The court subsequently modified this portion of its decision. See Modified Opinion, Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova, No. S132972 (Cal. Apr. 18, 2007), available at http://www.courtinfo.ca.gov/opinions/archive/S132972M.PDF.
and discloses the significant environmental effects of each alternative, as well as mitigation measures to minimize each adverse impact."217

Applying these principles, the court found the Vineyard EIR sufficient for the short-term "specific plan" but insufficient for the longer-term "community plan." The short-term analysis was adequate, the court held, because even though "much uncertainty remain[ed]" about the proposed water sources, there was "substantial evidence demonstrating a reasonable likelihood" of enough water—roughly 7,000 annual acre feet it appeared the development could acquire from the well field for about "5,500" annual acre feet of demand.218 By contrast, the EIR contained "no evidence . . . regarding the uses that might be expected to compete with Sunrise Douglas for the planned new surface water over the next 20 or more years."219 Accordingly, even though the longer-term plan’s environmental effects could have been explained in the EIR, they were not explained, rendering the EIR deficient.220

A number of observations bear noting concerning Vineyard’s likely impact on the California assured supply landscape. Most crucial, Vineyard effectively guts CEQA of any real assured supply requirement. To be sure, CEQA as interpreted by the Vineyard court continues to impress some incentive upon developers to acquire sufficient water for new homes, because showing the existence of such sources and their likely environmental effects has now been virtually codified as a path of least resistance to satisfying CEQA’s strictures. At the same time, however, the express premise behind the court’s ruling that CEQA requires only some "likelihood" of water is that "water supplies must be identified with more specificity at each step" of the planning process.221 The court thus specifically held that under CEQA, a project need not have "such firm assurance of future water supplies" as S.B. 221 demands, in part because S.B. 221 does not apply until the subdivision map approval stage.222 Certainly this is a reasonable, arguably proper interpretation of CEQA, but it also is not how many read the prior CEQA case law, and certainly not how antisprawl and environmental advocates attempted to use those earlier decisions. Moreover, if localities may rely on a mere "likelihood" of future water sources by analyzing their environmental effects, they are free to switch sources, midstream so to speak, after citizen opposition has waned.223 The risk is that prodevelopment localities will push off the hard choices on water supply

218. Id. at 724.
219. Id. at 727.
220. Id. at 729.
221. Id. at 738.
222. Id. at 737.
223. See id. at 724–25.
to a time when the development is a foregone conclusion as a practical matter, by pointing to a "likelihood" of water in the early going.

*Vineyard*’s "likelihood" test also is almost certain to be a fount of litigation. The first attack on *Vineyard*’s reasoning is that the case erected a rule with indiscernible boundaries. The court’s decision rightly recognized that there are alternative avenues under CEQA to assess a project’s environmental effects, but in holding that this also means a showing of sufficient water need not be certain, the court left much room for debate and, worse, fostered inevitable confusion. Is an 80 percent likelihood of securing a water source sufficient under CEQA? A 76 percent likelihood? How much more “secure” must a water source be at the “specific plan” level than the “community plan” level? *Vineyard* does not answer these questions. Indeed, the decision elicited a biting dissent based on the incongruous results this lack of definition appeared to create—the acceptability of the Sunrise Douglas development’s “specific plan” but the unacceptability of the “community plan,” when CEQA is supposed to allow water sources to be *less* certain at higher planning stages.

Finally, *Vineyard* is almost certain to have an impact on the general water planning process in California, though how so is less clear. One possibility is that the vagueness of *Vineyard*’s “likelihood” standard will encourage aggressive developers and prodevelopment localities to push for CEQA approvals with less and less certain water. A similar possibility is that developers will seize on the decision’s language acknowledging that localities “may rely” on the inclusion of a large project in a city’s UWMP as immunization from further review. To the extent such efforts shift assured supply questions away from an early hard look at the project-specific level and leave them to a less stringent UWMP process, both the quality and quantity of assured supply planning may decrease. In fact, a recent analysis showed that only 58 percent of UWMPs in California provide detailed information for both supply and demand.

224. The linguistic gymnastics that courts already are employing in attempting to apply *Vineyard* demonstrate the point. See, e.g., Santa Clarita Org. for Planning the Env’t v. County of L.A., 66 Cal. Rptr. 3d 559, 562, 570 (Ct. App.) (“Arguably under [*Vineyard*], a current source of water could be uncertain in the future. But that uncertainty is more chimerical than actual... [H]ere the degree of uncertainty is insubstantial. ‘Some uncertainty’ is not the same as any conceivable certainty.”), vacated, 68 Cal. Rptr. 3d 449 (Ct. App. 2007).

225. *See Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova,* 150 P.3d 709, 734 (Cal. 2007) (Baxter, J., dissenting), as amended upon denial of rehearing. Because of this incongruence, Justice Baxter urged that the court should have upheld the EIR for the broader community plan, just as it did for the specific plan. *See id.*

226. *Id.* at 731.

227. This assumes, of course, that the sufficiency of the UWMP itself is not challenged—not necessarily a given proposition. *See, e.g., Friends of the Santa Clarita River v. Castaic Lake Water Agency,* 19 Cal. Rptr. 3d 625 (Ct. App. 2004).

228. HANAK, *supra* note 161, at 43.
and only "a third" use "consistent data, with both supply and demand sources differing by less than 10 percent." Yet another, more positive alternative is that Vineyard's "likelihood" test will prove so murky that it pushes developers, or at least risk-adverse developers, to obtain more certain water supplies in order to avoid litigation and the risk of unknowable results. Either of these latter cases, of course, would be paradoxical. By attempting to balance environmental and development interests, Vineyard would have pushed the development process in California not to the middle, but toward an extreme.

In the end, Vineyard itself may be a paradox. For a case universally regarded as so important on its way into the California Supreme Court, the decision presents as many questions about the future of assured supply law in California as it gives answers. The likely persistence of these questions into at least the immediate future certainly should not detract from the benefits the dual schemes of S.B. 221 and S.B. 610 actually deliver. But in ensuring there is water for new developments, some of the regulatory onus may now have shifted from CEQA to this other statutory scheme—a shift that, given the limitations of S.B. 221 and 610, may allow more projects to slip through the assured supply creases than before.

B. Oregon

Oregon’s assured supply law stands in sharp contrast to California’s. Rather than imposing a uniform, state-level requirement that all developments of a certain size or environmental impact must first prove an assured supply, Oregon takes a less direct approach. Although Oregon imposes a general requirement that water considerations be included in both general planning and specific land use decisions, it leaves the details of how to integrate water issues into these processes largely to localities, resulting in requirements that differ significantly from local jurisdiction to jurisdiction.

1. The Oregon Comprehensive Plan and Statewide Planning Goals

Despite their primarily locally-based design, Oregon’s assured supply requirements flow initially from a broader, state-level planning

229. Id. at 44.
230. Cf. San Joaquin Raptor Rescue Ctr. v. County of Merced, 57 Cal. Rptr. 3d 663, 677-78 (Ct. App. 2007) (rejecting, post-Vineyard, a CEQA analysis for failing to address the "true impact of the project on groundwater supplies"). Converse to the decision’s potentially malleable “likelihood” standard, one might fairly characterize Vineyard as giving lower courts a clearer overall roadmap for how to apply CEQA to water supply questions than previously existed. See, e.g., Santa Clarita Org. for Planning the Env’t v. County of L.A., 68 Cal. Rptr. 3d 449, (Ct. App. 2007) (applying Vineyard’s four-prong analysis).
framework. The centerpiece of this framework is the comprehensive land use plan. Well known for its groundbreaking land use planning policy, both for its inclusiveness and for the use of innovative techniques such as urban growth boundaries, Oregon requires its localities to adopt comprehensive general plans that act as overarching “constitutions” governing all local land use decisions. When developing these plans, Oregon law mandates that local governments must consider the water-land use connection in numerous respects. The comprehensive plan, for instance, must “interrelate[] all functional and natural systems and activities relating to the use of lands, including . . . sewer and water systems . . . and water quality management programs.” Thus, localities’ comprehensive plans explicitly must take into account the availability of “sewer and water systems,” obviously implicating the water supply. Lest the point be lost, the law reiterates: “‘Land’ includes water, both surface and subsurface, and the air.”

Oregon, however, does not simply leave the inclusion of water in land planning to these broad-brush statutory exhortations about what the comprehensive plan must include. The law, next, ties specific local land use decisions to the applicable comprehensive plan by requiring that those decisions be consistent with the applicable comprehensive plan and then specifies that the local comprehensive plans themselves also must comply with “mandatory” statewide planning goals set by the Oregon Department of Land Conservation and Development. A number of these goals further bolster the land-water connection by specifically referencing water and water supplies in their requirements.

For example, to comply with statewide Goal 11—Facilities and Services, a local comprehensive plan should ensure that local land use decisions “consider as a major determinant the carrying capacity of the [area’s] air, land and water resources”—meaning, one would infer, that only development that is at least capable of being serviced by a sufficient


233. Id. § 197.015(6).

234. Id.

235. Id.

236. Id. § 197.175(2)(d); see also S. of Sunnyside Neighborhood League v. Bd. of Comm’rs of Clackamas, 569 P.2d 1063, 1072 (Or. 1977).

237. OR. REV. STAT. § 197.015(9) (2005); see also id. § 197.175(2)(a).
water supply should be approved.238 Likewise, both Goal 5—Natural Resources, Scenic and Historic Areas, and Open Spaces and Goal 6—Air, Water and Land Resources Quality recognize that local comprehensive plans should promote the “conservation of both renewable and non-renewable natural resources,” and use the “physical limitations of the land . . . as the basis for determining the quantity, quality, location, rate and type of growth in the planning area.”239 Accordingly, throughout Oregon’s statewide planning laws and policy are requirements that, somehow, water must be taken into account at the local level.

2. Local Decisionmaking, Local Differentiation

The effect of Oregon’s general planning requirements is that most localities have adopted ordinances incorporating water availability into their development regulations and ordinances.240 That most Oregon localities now have assured supply requirements, however, does not necessarily translate into uniform, across-the-board coverage throughout the state. On the contrary, assured supply law in Oregon is typified by local differentiation, with requirements ranging from restrictive, explicit rules to general, barely-there measures. Moreover, even where a locality’s assured supply ordinance may appear stringent on its face, how the locality chooses to apply its ordinances is critical. Although local planning decisions are generally subject to review by the Oregon Land Use Board of Appeals (LUBA), localities receive great deference on both factual findings and the interpretation of their own ordinances.241 Thus, as a practical matter, how a locality in Oregon chooses to interpret its local assured supply requirement may matter just as much as, if not more than, the fact that the locality has the requirement at all. This clearly differs from California, where statewide requirements are more likely to receive uniform treatment in the state courts.

A few examples demonstrate the diversity of Oregon’s assured supply requirements, both in how those requirements are designed and also in how they are then applied. For instance, Washington County, which includes a portion of Portland, has adopted a pervasive assured supply requirement that “[a]ll development” must have “an adequate

239. Id. at 660-015-0000(5), available at http://www.lcd.state.or.us/LCD/docs/goals/goal5.pdf; Id. at 660-015-0000(6), available at http://www.lcd.state.or.us/LCD/docs/goals/goal6.pdf.
water supply" before "issuance of a building permit.”\textsuperscript{242} The actual stringency of Washington County's requirement, however, does not match its ordinance's stern language. The case of \textit{Durig v. Washington County} illustrates.\textsuperscript{243} There, a commercial farm sought to add thirty-three manufactured homes to house nearly 400 seasonal workers and their families. The farmer intended to use local groundwater to supply the housing. Despite conflicting evidence over how much water the housing would demand, the county approved the development. Deferring to the county's factual findings, the LUBA held: "We believe petitioners have a valid point that continuing to add additional wells that draw from the same aquifer may eventually have an adverse impact. . . . However, . . . [t]he choice between conflicting evidence belongs to the local government. . . ."\textsuperscript{244}

By contrast, an ordinance for Malheur County, located on the Idaho border, requires only that when considering amending the local zoning maps, the planning commission determine that "adequate rural services are available and will not be overburdened."\textsuperscript{245} This simple requirement is so vague as to demand interpretation. The recent case of \textit{Concerned Citizens of Malheur County v. Malheur County} highlights its inherent malleability.\textsuperscript{246} In \textit{Concerned Citizens}, a local grassroots group opposed the installation of a large biorefinery slated to use over 300 million gallons of water per year. The developer submitted evidence that it could obtain approximately 80 percent of its water from the City of Ontario, but it had not acquired a supply for the remaining 20 percent. The county nevertheless approved the zoning change, determining that the water would be available in the future when the facility was completed, either from upgrades to Ontario's water system or from groundwater or agricultural water rights transfers. Noting that the county had interpreted its assured supply requirement as satisfied whenever applicants demonstrated nothing more than the capability to provide water, LUBA affirmed.\textsuperscript{247} "[A] large aquifer lies underneath the property that can be tapped if the municipal water extension proves to be infeasible."\textsuperscript{248}

\begin{thebibliography}{99}
\bibitem{244} \textit{Id.} at 14; \textit{see also} Helvetia Cmty. Ass'n v. Wash. County, 31 Or. LUBA 446, 447-49 (1996) (approving land division over objection of state Department of Water Resources that development could harm groundwater); Washington County, Or., Comprehensive Plan pt. III, Policy 6: Water Resources (2005), available at http://www.co.washington.or.us/deptmts/ut/planning/publicat.htm (county will "[s]trive to ensure adequate water supplies for all uses").
\bibitem{245} \textit{MALHEUR COUNTY}, OR. \textit{COUNT\textit{Y CODE}} 6-10-7(C) (zoning ordinance), available at http://www.sterlingcodifiers.com/OR/Malheur%20County/index.htm.
\bibitem{246} 47 Or. LUBA 208 (2004).
\bibitem{247} \textit{Id.} at 220.
\bibitem{248} \textit{Id.} at 230 n.9.
\end{thebibliography}
A final example can be seen in the ordinances of Josephine County, on the California border. That county’s land use policies have specified that the local comprehensive plan map cannot be amended without a demonstration that the relevant land is physically capable of supporting the permitted uses, “e.g., adequate water supply, septic suitability, soil quality, and adequate access.” Yet despite this requirement, three LUBA decisions interpreting Josephine County’s ordinances have construed them as creating differing levels of stringency.

In the first, *Doob v. Josephine County (Doob I)*, the LUBA overturned the county’s approval of a zoning change for a forty-acre property because the county had relied on evidence of water supplies from neighboring properties rather than the one at issue. “While evidence from surrounding properties may be adequate to establish certain characteristics or capacity of the subject property in some instance,” the LUBA reasoned, “the governing body must first establish the essential relationship between the properties before such reliance is credible.”

However, in the separate case of *Doob v. Josephine County (Doob II)*, LUBA upheld the county’s zoning change for a fourteen-acre tract allowing up to twelve new dwellings. The basis of the approval was two lone wells on the property, when an additional ten to eleven wells would likely be needed to serve all twelve homes. Dismissing the very premise of *Doob I* that water from nearby properties could not be relied upon, the LUBA wrote: “The county could reasonably conclude, from the evidence of a producing well on the property and the well logs of numerous *other wells in the vicinity*, that the land has an adequate groundwater supply for 12 dwellings...”

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249. This language was the prior formulation of these policies. See *Doob v. Josephine County*, 31 Or. LUBA 275, 277 (1996) (quoting Josephine County, Or., Comprehensive Plan 2005, Goal 11(4)(a) and citing to JOSEPHINE COUNTY, OR., RURAL LAND DEVELOPMENT CODE § 47.030(B)(3)). The current formulation is slightly different. See Josephine County, Or., Comprehensive Plan 2005, Goal 11(2)(C) (“[C]hanges to the plan and/or zone maps shall demonstrate the land has adequate carrying capacity to support the densities...”), available at http://www.co.josephine.or.us/files/gp2005.pdf; see also id. Goal 3(3) (“Appropriate minimum lot sizes for rural residential areas shall be determined by land limitations, including the following... ability to provide adequate sewage disposal and availability of water supplies for domestic purposes.”); JOSEPHINE COUNTY, OR., RURAL LAND DEVELOPMENT CODE §§ 42.050(B)(3), 45.030(B)(3), 46.040(C) (2005) (carrying capacity must not be exceeded), available at http://www.co.josephine.or.us/Files/complete_code_2005.pdf.

250. 31 Or. LUBA 275 (1996).

251. Id. at 278; see also, e.g., *Spiro v. Yamhill County*, 38 Or. LUBA 133, 138, 143–45 (2000).

252. 32 Or. LUBA 376 (1997).

253. Id. at 378 (emphasis added); see also, e.g., *Paddock v. Yamhill County*, 45 Or. LUBA 39, 42–43, aff’d without opinion, 77 P.3d 645 (Or. App. 2003); *Perry v. Yamhill County*, 26 Or. LUBA 73, 79–81 (1993).
Finally, in James v. Josephine County,254 the LUBA overturned a local decision finding a zone change consistent with the county's assured supply requirements. The county had reasoned that under its assured supply requirement, it was necessary only to determine that there was sufficient water for the proposed use, not for other potential uses also allowed under the new classification. The LUBA rejected this assertion: "Policies 4 and 6 require the county to consider the physical capability of the land to support permitted uses, not just the proposed use, or uses that it would be 'practical' to conduct on the subject property."255

Together, these cases make the message from Oregon abundantly clear. Even though the state's land use laws generally recognize the importance of accounting for adequate water supplies, and even though most localities have incorporated this concept into their own ordinances, how Oregon's policy goal is implemented hinges not on what actions regulators take at the state level, but on how localities design, apply, and enforce their requirements.

C. Synthesis: Extracting the Design Elements of Assured Supply Laws

The differences between California's and Oregon's approaches to assured supply law provide a clear snapshot of the design elements around which these laws might be built: though all assured supply laws seek to ensure that new developments are not constructed without sufficient water, the ways in which, and the extent to which, jurisdictions attempt to achieve this objective may diverge widely. The contrast between California's statewide model and Oregon's localized approach exposes the primary ways such divergences in design may occur.

Conceptually, the design elements of assured supply laws break down into five basic categories: the laws' compulsoriness, stringency, universality, granularity, and interconnectedness.

First, assured supply laws may be either compulsory or voluntary, or what may be referred to as the law's "compulsoriness." California's S.B. 221 is a good example of a compulsory law; if a development is subject to the law's jurisdiction, it must prove there is sufficient water or the development cannot go forward. By contrast, Oregon's various local measures are somewhere in between what might be considered fully "compulsory" and entirely "voluntary." The Oregon law is not so voluntary that it requires nothing more than a mere assessment or consideration of potential water supplies. But it also does not mandate hard compliance in the way S.B. 221 does. Instead, the Oregon law requires all localities to use the "physical limitations of the land . . . as the

254. LUBA No. 98-135a, 1999 WL 33256553 (Or. LUBA Feb. 23, 1999).
255. Id. at *7; see also, e.g., Pekarek v. Wallowa County, 33 Or. LUBA 225, 229–30 (1997).
basis for determining . . . growth," but then leaves the implementation of this requirement to local variation, thus making the requirement far less compulsory in practice than it might initially appear.

A second element around which assured supply laws may be designed is the law's "stringency"—that is, whether the law demands substantiated proof that real water will actually be present for the development, or whether, instead, the law requires nothing more than paper rights, or even a showing that water might exist in the future to supply the development. Here, California's S.B. 221 demonstrates a stringent assured supply regime. Under that statute, development cannot proceed without both the legal paper title for sufficient water and also proof, based on a historical analysis of actual supplies for wet, dry, and multi-dry years, that the physical water will be there. Conversely, a less stringent assured supply requirement is typified by cases such as Oregon's *Doob II*. Under those regimes, the mere likelihood of water is sufficient to satisfy the water supply requirement regardless of whether, as in *Doob I*, the data is based on wells that are not even on the property in question and that may face substantial demands in the future.

The third design element for assured supply laws is their "universality," or, in other words, whether the law applies on a statewide basis or is instead applicable only in limited parts of the state. California's S.B. 221 is a clear example of a universal assured supply law. It applies throughout the state. Oregon's assured supply regime is less universal, though, again, it is likely somewhere in the middle part of the universality spectrum rather than at the "nonuniversal" pole. In Oregon, as noted, there is a statewide requirement that growth be based on water availability, but the design of how that requirement is implemented varies from locality to locality. Certainly this must be considered a more

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257. See, e.g., CAL. GOV'T CODE § 66473.7(a)(2) (2006); Santa Clarita Org. for Planning the Env't v. County of L.A., 131 Cal. Rptr. 2d 186, 190 (Ct. App. 2003); aff'd, 68 Cal. Rptr. 3d 449, 460, (Ct. App. 2007); see also, e.g., Cal. Oak Found. v. City of Santa Clarita, 35 Cal. Rptr. 3d 434 (Ct. App. 2005); Planning & Conservation League v. Dep't of Water Res., 100 Cal. Rptr. 2d. 173 (Ct. App. 2000).

258. See supra notes 252–253 and accompanying text.

259. Of course, the most universal requirement would be a federal one, and even a requirement imposed via cooperation among states would be more universal than a statewide law. But land zoning and development decisions long have been the province of the states and localities, see, e.g., John R. Nolon, Comprehensive Land Use Planning: Learning How and Where to Grow, 13 PACE L. REV. 351, 351 (1993), and, to date, there apparently is no interstate agreement imposing an assured supply requirement across jurisdictions. As detailed below, however, because universality is one of the key elements of what should be the most efficacious assured supply laws, for jurisdictions with important border cities (e.g., Portland, Oregon), such interstate compacts should be well worth pursuing. See infra Part IV.C.
universal requirement than a regime where localities are simply free to enact assured supply laws but in fact may or may not do so. Still, the requirement is not as universal as California's, which applies in every locality regardless of the locality's preferences and political inclinations.\footnote{San Diego, which has its own assured supply program, does receive special treatment under the statute. See Cal. Gov't Code § 66473.7(k) (2006); see also San Diego County Water Authority, 2004 Annual Water Supply Report: Supply Reliability Through Diversification 7-17 (June 2004), available at http://www.sdcwa.org/news/pdf/WaterSupplyReport2004.pdf.}

The fourth design element is "granularity." Granularity is effectively the mirror image of the universality element: the question is not how widely the law applies throughout the state, but how deeply it applies based on the size of developments. The most granular assured supply requirement is one that applies to every development, such as the measure adopted by Washington County, Oregon.\footnote{See supra notes 242–244 and accompanying text. Additional granularity could be achieved by requiring an assured supply showing even for existing homes when the home is substantially modified in a way that might demand significantly more water. Aside from policing problems, this approach appears to be rarely, if ever, used, presumably because ongoing water planning is better equipped to capture demand from existing developments than new construction.} In contrast to that requirement, California's S.B. 221 appears markedly nongranular. Developments are not subject to its strictures unless they include 500 or more homes.\footnote{Cal. Water Code § 10913(6)(A)(1) (2006).}

Finally, assured supply laws may be defined by the integration with other planning schemes, or, in short, their "interconnectedness." California's S.B. 221 is perhaps the prototype for the extremely interconnected assured supply law. Not only does it allow for the use of UWMPs in the assured supply assessment,\footnote{See supra notes 183, 184, 187 and accompanying text.} but, as the California Supreme Court explained (and redefined) in Vineyard, both of the land-and-water planning devices created by S.B. 221 and S.B. 610 are also tied into the overall environmental planning scheme of CEQA.\footnote{See supra Part II.A.2.a.} Oregon's laws, on the other hand, fail to achieve this type of tight integration between land, water, and general environmental planning. Though the measures enacted by Oregon's localities devolve from overarching statewide planning requirements and objectives, and thus are certainly more interconnected than an assured supply law that has no such integration, they do not in any tangible way provide for the exchange of, and reliance upon, actual water, land use, and environmental information among different agencies and decisionmakers as S.B. 221 does.

With these two examples of assured supply law implementation, and these five elements of potential design, in mind, the next Part turns to
assessing what benefits and costs, if any, assured supply laws appear to actually deliver. Following that inquiry, Part IV returns to the problem of design—seeking to determine how assured supply law design may maximize the benefits, and ameliorate the costs, of these innovative new measures.

III. ASSURED WATER SUPPLY BENEFITS AND COSTS: A QUALITATIVE ASSESSMENT

Evaluating the value-added by assured supply laws is, by its nature, a somewhat Delphic proposition: the laws are new enough in many locales that comprehensive data are not available. They vary enough from one jurisdiction to the next that results are bound to be mixed. And, like any regulatory regime, assured supply laws interact with so many other variables in the real world that teasing out their precise impacts is certain to be somewhat messy. Putting these qualifications momentarily aside, however, there is clear evidence that assured supply laws are in fact impacting how development proceeds. Applying the framework of potential benefits and costs developed in Part I, this Part uses the available evidence, both anecdotal and quantitative, to perform a qualitative assessment of what assured supply laws' actual policy benefits and costs are.

A. Consumer Protection

The first potential benefit of assured supply laws is also their first actual benefit: protection of consumers. As noted, the countervailing risk here is that development will be burdened with duplicative costs of redundancy. But the evidence demonstrates that this simply is not the case. To whatever extent the financial community and forward-thinking planning agencies already attempt to protect against dry development, the protection is not complete. Across the West, developments that do not have sufficient water persist. In fact, many jurisdictions that have enacted assured supply laws have done so expressly because dry development has become a consumer threat.

One need not look far for examples. Take Summit County, Utah. Just east of Salt Lake City and home to Olympic ski venues, swank vacation homes, and the Sundance Film Festival, Summit County saw high controversy in the summer of 2000 when a fierce drought struck, leaving many homes without sufficient water. The result was a new county ordinance requiring developers to prove that “water will be

265. By far the most comprehensive data on assured supply law implementation is a 2005 California study conducted by Dr. Ellen Hanak and the Public Policy Institute of California. See HANAK, supra note 161.
266. See supra Part II.A.2.
267. Strachan, supra note 68, at 452.
available concurrent with the needs projected for the proposed development” before a building permit will issue.268

Likewise, the Arizona GMA statute specifically obligates development in areas not subject to that state’s “assured” supply requirement to prove that there is an “adequate” water supply for the next hundred years.269 If the water supply is inadequate, the developer may still sell, but it must disclose to consumers in “all promotional material and contracts” that the property lacks adequate water.270 Under this law, there has been “an alarming trend” in recent years of subdivisions “built even though developers and local and state officials know there may not be enough water to serve new homeowners.”271 Since 2001, approximately 35 percent of the 171 applications submitted to the Arizona Department of Water Resources under this program lacked adequate supplies, and most projects went forward anyway.272 The result is “thousands of homes” in rural Arizona “with no guarantee of water.”273

In response to this problem of dry development, assured supply laws indeed appear to be working. The cases from California and Oregon confirm that assured supply laws can reduce dry development. Repeatedly, the California courts have halted development that was not supported by adequate water supplies,274 as did the Oregon LUBA in Doob I and James.275 Even the lenient Arizona “adequate” supply process recently held up a 25,000-home development hoping to become a bedroom community of Las Vegas in the face of doubts of insufficient water.276 In fact, a survey of California jurisdictions revealed that

268. Id. at 450 (describing the ordinance). The county’s ensuing efforts to consolidate water supplies also spawned a suit under state antitrust laws. See Summit Water Distrib. Co. v. Summit County, 123 P.3d 437 (Utah 2005).
270. Id. § 32-2181(F). In 2007, Arizona’s legislature further strengthened the “adequate” water supply program that applies outside the state’s AMAs. It granted localities the authority to forbid the approval of subdivisions that lack adequate water. See id. § 11-806.01(F).
272. Id.
273. Id.; see also Shaun McKinnon, Developers Cashing in on Weak Water Laws, ARIZ. REPUBLIC, June 27, 2005, at 1A. There are more examples, and certainly more unreported. See, e.g., supra notes 162–164 and accompanying text (discussing Dougherty Valley); Drennan, supra note 125, at 923 (mentioning a subdivision in Albuquerque, New Mexico); Lora A. Lucero, Water and the Disconnects in Growth Management, 31 URB. LAW. 871, 880 (1999) (recognizing dry subdivisions as “common” in New Mexico as recently as 1995); see also, e.g., Tom Sharpe, Subdivision Won’t Get County Water, SANTA FE NEW MEXICAN, May 31, 2006, at A1; Doug Smeath, Riverton Canals to Empty, DESERET MORNING NEWS (Salt Lake City), Aug. 25, 2004, at B5.
274. See supra Part II.A.2.b.
275. See supra notes 250–251, 254–255 and accompanying text.
“between 1994 and 2003, on average, cities and counties with water adequacy screening policies issued 13 to 22 percent fewer residential construction permits than did jurisdictions without these policies.”

Thus, assured supply laws are not merely redundant of extant informal regulation. They deliver consumer protection that otherwise is not provided—protection that comes not only in the form of avoiding the direct cost of developments that actually go “dry,” but also in the form of avoiding the invisible subsidization of new development that occurs when municipalities and local water districts which spread their costs across the broader community are called in to serve these new developments. Both of these protections are important, direct, and actual benefits of these laws.

Assured supply laws also appear to be delivering the economic efficiencies of scale and expertise one might expect them to provide. Rather than leaving issues of water supply to piecemeal, parcel-by-parcel resolution, assured supply laws have encouraged at least some developers themselves to find water in the large quantities needed for their equally large projects. “Developers are becoming key players in [California’s] emerging and controversial private water market,” making single purchases on the order of millions of dollars and billions of gallons. These developers, in turn, gain a niche knowledge of how to find and acquire water rights that is not otherwise well-spread. One developer who went through the experience explains: “It was a strange trip... You find yourself going from district to district. Somebody would refer you: ‘Why don’t you call so and so?’ You wind up in Stockton, then you’d go to Oakdale, and then over to Pinecrest... finally finding out how the thing works.”

Other reports acknowledge that developers have both created

277. HANAK, supra note 161, at 83–84.
278. The extent of this consumer protection benefit may vary depending on location. In rural areas where development is more likely to rely on groundwater, the risk of actual “dry” development may be higher than in incorporated areas with existing water infrastructure and planning. In the latter case, the benefit may be more of internalizing development costs. See Ellen Hanak & Ada Chen, Wet Growth: Effects of Water Policies on Land Use in the American West, 47 J. REGIONAL SCI. 85, 87 (2007). Nevertheless, even where homeowners do not rely on groundwater, assured supply laws can provide consumer protection benefits by sounding the alarm that additional, municipal-wide supplies are needed. See, e.g., A. Dan Tarlock & Sarah B. Van de Wetering, Western Growth and Sustainable Water Use: If There Are No “Natural Limits,” Should We Worry About Water Supplies?, 27 PUB. LAND & RESOURCES L. REV. 33, 66 (2006) (describing Prescott, Arizona’s search for additional water).
279. Kasler, supra note 77.
280. Id. (quoting Dan Coleman); see also Hanak & Browne, supra note 66, at 157. Agricultural landowners are not necessarily willing to give up their water rights, even when the economic benefit of doing so would seem blatant. See Thompson, supra note 95, at 723–39 (detailing institutional biases against agricultural-to-urban water transfers); see also, e.g., Lora Lucero & A. Dan Tarlock, Water Supply and Urban Growth in New Mexico: Same Old, Same Old or a New Era?, 43 NAT. RESOURCES J. 803, 828 n.106 (2003) (describing the Imperial Irrigation District’s (IID) refusal to approve a rural-to-urban water transfer for $248 per acre
their own private water companies and participated in regional water supply projects.\footnote{See, e.g., Hanak & Browne, supra note 66, at 157; McKinnon, supra note 273.} This practice of water acquisition should be even more efficient because it combines the financial resources of multiple developers with the long-established experience of existing water managers. Finally, and likely most important, assured supply laws provide clear notice to local governments and water districts that they need to acquire additional water, which the localities then obtain using their own expertise and experience.\footnote{See HANAK, supra note 161, at 63; Telephone Interview with Ellen Hanak, Research Fellow, Public Policy Institute of California (Sept. 29, 2006).}

That assured supply laws work, moreover, should not be undermined by the fact that they may increase housing costs. Assured supply laws do appear to increase prices, but the impact is not particularly dramatic. One study recently showed that the range of price increases may fall somewhere between less than 1 percent of the median home price in Arizona to a 4 percent increase in Colorado.\footnote{See HANAK, supra note 161, at 53.} In raw dollars, this translates to a low of $400 extra per home to a high of roughly $8000.\footnote{Id. at 160.} However, impact fees for new developments “are often significantly higher for other services, including the basic water and sewer connection fees.” Further, from a policy perspective, requiring new homeowners to pay for needed water is sensible. New homebuyers may complain it is unfair that assured supply laws force them to pay for marginal water costs when prior purchasers received a blended system price, but there is no reason why past practice should perpetually entitle new entrants to spread expenses directly attributable to them across society. Cost internalization is a good thing. Particularly from an environmental perspective, it means that consumers see the true resource impact of their behavior, which in turn may help prod conservation. In fact, without assured supply laws in place, new homebuyers may be imperiling themselves. “Regulation protects . . . consumers from an investment loss, because home values would fall once the [water] problem [undisclosed by developers] became apparent.”\footnote{HANAK, supra note 161, at 53.}

Nor need there be equity concerns that assured supply laws will act to adversely impact low-income communities. Governments considering assured supply measures can exempt development slated for low-income residents or, far better, continue to mandate enforcement but subsidize
the cost of the supply for such developments. Indeed, many jurisdictions, including California, waive assured supply fees for low-income housing.

B. Holistic Planning

The apparent planning benefits and costs of assured supply laws also are almost entirely positive. It is almost self-evident that on a project-level basis, assured supply laws deliver. By adding a water element into the land use approval process, assured supply laws create a planning synergy on the project level that does not otherwise exist. This is precisely the kind of planning that engenders "[g]reater linkages between water management and land use." Any of the California or Oregon cases where the courts turned back the development approval due to an insufficient water assessment is evidence: in Doob I, James, and a number of the pre-Vineyard CEQA cases, the tribunals remanded the development applications to the local land use agencies because land and water planning were not sufficiently integrated. The consequence: assured supply laws effectively force project planning to connect water and land if development is to proceed. By definition, this type of planning is more holistic than planning that treats "things that are interconnected as if they are separate and distinct."

There likewise is evidence that assured supply laws prompt land boards to engage in the kind of multilevel agency coordination that should make both land and water planning more efficient and robust, though the extent to which the laws encourage this administrative cross-pollenization is less plain. Certainly local land agencies now participate in local and regional water planning more than they used to generally. In California, for instance, 57 percent of city and county land use agencies say they participate in watershed, floodplain, or groundwater management groups. Likewise, a "significant majority"—62 percent—"report that they participate in the planning activities of their water utilities" by sharing data, reviewing documents, or conducting joint

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287. Lower income communities may be exempted on the presumption that such housing will be built in already urban areas, so water will be available but its costs simply spread across society. But if this is not the case, there is a real environmental justice risk that those who most need assured supply protection will not receive it.

288. Hanak & Browne, supra note 66, at 160; see also CAL. GOV'T CODE § 66473.7(i) (2007).

289. Thompson, supra note 88, at 97.

290. See supra Part II.B.2.

291. See supra notes 203–205.

292. Arnold, supra note 52, at 33.

293. HANAK, supra note 161, at 59.
analyses. And, water utilities that conduct such joint analyses “are 14 percent more likely to include [the] housing-based projections” in their demand assessments, in turn, making those assessments more reliable.

Still, there is far more ground to cover on this front; localities and water planners can and should coordinate more substantively than they do now. Nonetheless, planners report that assured supply laws often cause them both to coordinate more frequently with their land or water counterparts and to be more assertive in doing so.

One California water manager explains, “We’ve always tried to be careful to keep up coordinating with the land planners, [but since S.B. 221] we have been more proactive.”

Also positive, the evidence indicates that assured supply laws do not push water issues to center stage at the expense of other, potentially more critical planning concerns. The most comprehensive data available, from California, show that the bulk of projects subject to assured supply requirements are approved: “The story that emerges is, in our view, a very balanced one. The vast majority of projects—86 out of 95—were deemed to have sufficient supplies.” This strongly implies that rather than getting hung up on water issues for their own sake, planning agencies apply assured supply laws as a fundamental water-first requirement, without allowing the laws to distort the planning process as a whole—a fact that planners on the ground confirm.

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294. Id. at 57.

295. Id. at 59.

296. E-mail from Jeff Loux, Director, Land Use and Natural Resources Program, University of California, Davis, to Lincoln Davies (Oct. 5, 2006) (on file with author).

297. See id.; Telephone Interview with Doug Dunham, Manager, Office of Assured/Adequate Water Supply, Ariz. Dep’t of Water Resources (Oct. 16, 2006); Telephone Interview with Jennifer Pokorski, Associate Project Manager, Flood Control District of Maricopa County (Oct. 6, 2006); Telephone Interview with David A. Requa, District Engineer/Assistant Gen. Manager, Dublin San Ramon Services District (Oct. 15, 2006); Telephone Interview with Mike Worlton, Project Manager, RBF Consulting (Oct. 9, 2006); E-mail from Todd C. Tucker, Planner, and Miles Throop, Staff Engineer, Town of Frederick, Colo., to Lincoln Davies (Aug. 2, 2007) (on file with author); cf. E-mail from Carl Schueler, Long Range Planning Manager, Development Services, El Paso County, Colo., to Lincoln Davies (July 20, 2007) (on file with author) (noting that in complying with local assured supply law, county relies on information and analyses from other state and local agencies). But cf. Telephone Interview with Ellen Hanak, supra note 282 (indicating that cross-agency coordination is “more a reflection of the general trend toward greater comprehensive planning” than a trigger of it); Telephone Interview with Jeri Ram, President, Cal. Chapter, American Planning Ass’n (Oct. 5, 2006) (same); Telephone Interview with Terry Rivasplata, Senior Environmental Planner, Jones & Stokes (Oct. 5, 2006) (noting that there continues to be little coordination between land planners and water agencies).

298. Telephone Interview with David A. Requa, supra note 297.

299. HANAK, supra note 161, at 75.

300. Telephone Interview with Barbara Kautz, Attorney, former Community Development Director and Assistant City Manager, City of San Mateo, Cal. (Oct. 5, 2006); E-mail from Jeff Loux, supra note 296; E-mail from Kevin Nichols, Senior Planner, City of Arvada, Colo., to
Similarly, assured supply laws do not appear to typically burden local planning agencies with substantial new costs.\textsuperscript{301} Rather, although some local jurisdictions have initially protested enactment of assured supply laws as unfunded mandates, most assured supply laws effectively require the developer to foot the bill for their projects.\textsuperscript{302} Dublin, California, for instance, makes developers pay a $2,500 deposit to perform assured water assessments.\textsuperscript{303} Indeed, it appears that for most projects, localities take their “utilities’ word” as sufficient evidence that the water will be there when it needs to be.\textsuperscript{304} In general, localities are only likely to incur more substantial costs in two instances: when the locality thinks additional documentation is necessary due to project size,\textsuperscript{305} and when the locality’s water plan is not up-to-date.\textsuperscript{306} In the latter case, the costs of a large project’s water assessment may run upwards of $40,000 to $50,000,\textsuperscript{307} but the benefits that performing an assured supply assessment delivers should more than justify the costs localities may charge to complete it. If a locality has to incur substantial costs to determine whether there is sufficient water for a project, it means that assured supply laws are compelling localities to engage in planning that either already should have been performed to account for demand growth, or that was made necessary by growth for which the locality had not planned.\textsuperscript{308}

Moreover, assured supply laws’ ability to spotlight “paper” water rights that do not have a firm supply of “wet” water behind them appears to be achieving at least some added efficiencies in water rights allocation. Again, the case law provides useful examples. In \textit{Spiro v. Yamhill}
County,309 for instance, residents challenged approval of a conditional use permit for construction of a local church. Finding Yamhill County's assured supply requirements "mandatory" rather than "aspirational,"310 the Oregon LUBA reversed the permit approval because the county failed to take into account the fact that "neighboring wells might be adversely affected."311 Similarly, in a recent 1,200-unit development in Kern County, California, the developers "agreed to monitor all wells and share the data" after receiving complaints from a neighboring water district that the project might lead to overdraft in the underlying groundwater basin, even though the assured supply review "determined that supplies were adequate."312 These cases, and the many others accumulating each year,313 are evidence of how assured supply laws can benefit the water rights process—flushing out potential rights-infringing uses for the rights-holders to protest and, in turn, limiting overallocation from further exacerbation.

Of course, for every Spiro or Kern County, there is a Durig v. Washington County314 or Paddock v. Yamhill County.315 These cases highlight the converse principle: that even though assured supply laws may improve the water rights process, they are far from perfecting it. In Durig, remember, the LUBA acknowledged that there would be some point where a new development "may eventually have an adverse impact" on other properties, but declined to find the "adverse impact" circumstance satisfied.316 Paddock was even more blatant. In that case, which involved the same Oregon county as the Spiro decision, the LUBA affirmed a development's approval over strenuous objections from neighboring landowners that the project would drain their wells.317 Both the county and the LUBA found this threat immaterial under the assured supply requirement. "The specific language of YCLDO 6.090 addresses

309. 38 Or. LUBA 133 (2000).
310. Id. at 138.
311. Id. at 142-45; cf. Santa Clarita Org. for Planning the Env't v. County of L.A., 131 Cal. Rptr. 2d 186, 190 (Ct. App. 2003) (finding reliance on unproven State Water Project rights insufficient), aff'd, 68 Cal. Rptr. 3d 449, 460, (Ct. App. 2007).
312. HANAK, supra note 161, at 81.
313. See id. (noting that issues similar to Kern County's have surfaced in other parts of California); E-mail from Carl Schueler, supra note 297 (explaining that following implementation of assured supply requirement in El Paso County, Colorado, individual well owners in the area formed "a group called Protect our Wells [which] periodically complain[s]" the requirement does not go far enough).
314. See discussion supra notes 243–244 and accompanying text.
317. Paddock, 45 Or. LUBA 39.
only the adequacy of water supplied to the subject subdivision lots, not impacts on other properties. Thus, despite the planning benefits that assured supply laws provide, the cases show that the risk of these laws instilling a false assurance in the regulatory process they erect is also real. No matter how they are designed, assured supply laws remain only as good as the water rights allocations that underlie them, and an assured supply measure that is too easily satisfied may actually mask the problem of uncertain water rights just as readily as exposing it.

Finally, the legislative history of several of the West's assured supply laws demonstrates that muscling these bills into law often demands substantial political sway and compromise. Add this to the false appearance of a problem solved, and the traditional symbolic assurance concern of legislative paralysis may begin to look quite real. For instance, though California's S.B. 221 eventually had "newspaper editorialists, environmentalists, farm groups and urban-planning theorists swooning" over it, it was ten years before the California state legislature put S.B. 221's straightforward requirement of sufficient water—a requirement that originally began as a single sentence—into place. The reason for this struggle was obvious. S.B. 221 and its predecessors were bombarded by consistent opposition from "a coalition that included real estate developers, builders, other water agencies and local governments jealously guarding their control over planning." It was only after S.B. 221's lead sponsor, state Senator Kuehl, agreed to relax the threshold for review from developments with 200 units to those with 500, and to alter the bill's language so that developers would not have to prove their legal right to groundwater, that the building industry finally withdrew its opposition. Indeed, even S.B. 221's watered-down predecessor, S.B. 901, suffered through "two years of fierce debate and opposition" before it could pass Sacramento's hurdles. The story in other states was virtually the same.

318. Id. at 45 (emphasis added); see also Perry v. Yamhill County, 26 Or. LUBA 73, 79–81 (1993).
319. See supra note 229 and accompanying text.
320. Peter H. King, After 10-Year Effort, Water Bill Is Still Paddling Upstream, L.A. TIMES, Aug. 19, 2001, California, at 1 ("'No lead agency shall approve a development project unless the applicant identifies a long-term, reliable supply of water to serve the proposed project.'" (quoting original 1991 bill)).
321. Editorial, supra note 75.
322. Id.; Kaplan, supra note 76; Vogel, supra note 75. This, moreover, was Senator Kuehl's third attempt at proffering the bill.
It is axiomatic that bills erecting regulation will inevitably elicit some opposition wherever and whenever proposed. But the tortured, tangled paths that S.B. 221 and similar laws have been forced to navigate provides an unambiguous lesson for planners, legislators, and environmentalists alike. A real risk in promoting assured supply laws is that, once passed, the political currency necessary to push additional measures on the same issues through may be increasingly difficult to garner, at least until another crisis or drought strikes.

C. Environmental Protection

In contrast to their consumer and planning benefits, the apparent environmental impacts of assured supply laws are, except on one issue, either neutral or negative. Assured supply laws appear to prompt additional conservation, but it also appears that they do not yield the other environmental benefits their advocates often tout. Perhaps most important, it is clear that assured supply laws will not stop sprawl. By definition, of course, assured supply measures do not restrict sprawl per se. They do not tell developers where they can build, they impose no density limits, and they do not expressly require infill development in already urbanized areas. On the contrary, assured supply laws typically restrict subdivision development only to the extent that sufficient water supplies are not available. Thus, if water is available, the assured supply law does not even purport to be a barrier to sprawl. Moreover, if water is not available in the immediate vicinity of a project, that does not mean it will not be available elsewhere. Two factors make it likely that water will in fact be found for development. First, there is an implicit progrowth presumption embedded within water law. "With few exceptions, western water law allows cities to transport water from the watersheds of origin to areas of demand, to acquire surface water rights in advance of demand, and to mine groundwater as a primary or secondary source of water." This legal presumption means that if the incentives exist to move water for development, it can move. Second, developers have strong incentives to move water to their projects, because otherwise their plans cannot go forward. An increasing trend


326. Tarlock, supra note 136, at 62 (noting further that the traditional riparian rule limiting use to watersheds “largely disappear[s] in practice”).

327. See id. at 60–63; see also Tarlock & Van de Wetering, supra note 65, at 170–74.
throughout the West is to transfer water rights from agricultural interests to urban and suburban development.\textsuperscript{328} The reason is simple: "The value of water in agriculture is generally less than in industrial or municipal uses . . . ."\textsuperscript{329}

Certainly the facts bear out that developers will find water supplies for projects when facing assured supply requirements. In the Dougherty Valley case, for instance, the project’s developer took an active role in finding agricultural water rights when the East Bay MUD would not provide the supply.\textsuperscript{330} Similarly, the massive 22,000-home Newhall Ranch development in the Santa Clarita Valley in California found water from rights transfers after repeated planning disputes and court battles.\textsuperscript{331} In fact, the same evidence indicating that assured supply laws are not distorting the planning process also reflects that they are not thwarting sprawl: more than 90 percent of projects reviewed under S.B. 221 have been found to have sufficient water supplies, but of those that did not, most subsequently found water after being denied in the first round of review.\textsuperscript{332} All this points to a single conclusion. As one planner from California puts it, "These laws are not going to stop sprawl. They are just going to make us more creative in how we find the water."\textsuperscript{333}

On the other hand, the evidence is less clear whether assured supply laws exacerbate sprawl by moving it from jurisdictions that have water requirements to those that do not. The Public Policy Institute of California’s (PPIC) seminal study of assured supply requirements in that


\textsuperscript{329} NAT’L RESEARCH COUNCIL, A NEW ERA FOR IRRIGATION 67 (1996).

\textsuperscript{330} See Kasler, supra note 77.

\textsuperscript{331} See HANAK, supra note 161, at 77–78.

\textsuperscript{332} See id. at 75–76. Even Arizona’s recent amendments allowing localities in the more rural portions of the state to preclude subdivision developments where a long-term, adequate water supply is lacking expressly contemplates that such development may nevertheless go forward if water can be \textit{trucked} or \textit{shipped} in by rail and it is disclosed that this will be the property’s water source. See ARIZ. REV. STAT. §§ 9-463.01(G), 11-806.01(G), 33-406 (2007).

\textsuperscript{333} Telephone Interview with David A. Requa, supra note 297.
state exposed the somewhat surprising fact that more than half of California localities had assured supply laws prior to S.B. 221.334 Even more interesting, however, was the distribution of these jurisdictions, which were not clumped regionally. Rather, in both the San Joaquin Valley (in central California) and the Inland Empire (in southern California), less than half of jurisdictions reported having such requirements, while 57 percent of municipalities in the fast-growing Sacramento region did, and 77 percent in the Central Coast region did.335 Moreover, the type—and stringency—of local assured supply laws also varied by jurisdiction.336 The implication is that to the extent these laws are enacted on a local basis only, they may incite a kind of urban sprawl race-to-the-bottom: a contest to attract growth in a way that could be an environmental worry due to assured supply implementation on a fragmented basis. Certainly there is no question that local jurisdictions differ in whether they are, or are perceived to be, growth-friendly or antigrowth in contrast with their counterparts.337 Yet the PPIC data also show that areas with assured supply laws have, on average, slightly decreased issuance of building permits.338 Given this net decrease in growth, an equally reasonable inference is that rather than simply shifting development, assured supply laws are actually negating some construction.339 Moreover, a recent study of laws in New Mexico and Colorado revealed that water “impact fees” for new development did not appear to be correlated with the shifting of construction from one jurisdiction to another, though stricter restrictions on groundwater use did appear to be correlated with shifts of development to incorporated areas served by existing water systems rather than wells.340 In other words, it appears that the risk of exacerbated sprawl from assured supply laws is real, but the degree of this risk is ambiguous.

What is not ambiguous is that antisprawl advocates view assured supply laws as a legal instrument in their toolkits.341 Following S.B. 221’s enactment in 2001, the Sacramento Bee characterized the law as “turn[ing] water into a chess piece in the debate over growth.”342 The moniker is fitting. Examples of environmentalists embracing assured

334. See HANAK, supra note 161, at 60–61.
335. Id.
336. Id. at 62 (ranging from straightforward assured supply requirements to “will-serve” letters to flat restrictions on new building).
337. See Telephone Interview with Doug Dunham, supra note 297; Telephone Interview with Ellen Hanak, supra note 282; Telephone Interview with David A. Requa, supra note 297; E-mail from Carl Schueler, supra note 297.
338. See HANAK, supra note 161, at 91.
339. Telephone Interview with Ellen Hanak, supra note 282.
340. Hanak & Chen, supra note 278, at 97, 101-06.
341. Thompson, supra note 88, at 97.
342. Kasler, supra note 77.
supply laws as a way to checkmate sprawl abound. For instance, following a 1996 ruling stopping one California development as lacking water, a branch of the Sierra Club issued a newsletter discussing the decision under the headline "Legal Tools for Stopping Sprawl." Other groups have opposed projects as unsound for lacking water, only to turn around and file suit challenging the water transfers that are later proposed to supply the developments. One environmental advocate describes this kind of effort: “[Water] is turning out to be something that could limit the sprawl.”

So far, this use of assured supply laws for tangential purposes does not seem to have harmed environmentalists. “[T]he review process” under assured supply laws “appears to have proceeded without widespread controversy.” But this is not a guaranteed state of affairs. Because assured supply laws are unlikely to actually prevent sprawl, environmentalists’ attempts to invoke these laws carry a real risk of frustrating their own objectives—backfiring through backlash. Employing a law in a way that will not work, for a purpose for which it was not intended, is exactly the concern that developers repeatedly express when assured supply laws are considered for enactment, and it is exactly the brand of logic they will invoke to oppose new enactments or amendments to the laws they view as unfavorable. In the calculus of politics, movement and response is fluent, not static, and the continued cooption of assured supply laws by environmentalists as a subterfuge for preventing sprawl is only likely to provoke a reaction from the powerful real estate and business lobbies. Worse, it may undermine the

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343. O’Brien & Markham, supra note 68, at 5.
344. Kasler, supra note 77.
346. Kasler, supra note 77 (quoting an opponent of the Newhall Ranch development).
347. E-mail from Kevin Nichols, supra note 300 (“Requiring developers to bring water rights to the city does not create backlash against the environmental movement. It is a standard practice, and the development community is used to this requirement.”); see also Telephone Interview with Doug Dunham, supra note 297; E-mail from Todd C. Tucker & Miles Throop, supra note 297.
348. HANAK, supra note 161, at 76.
349. See, e.g., Lucero & Tarlock, supra note 280, at 824–25; see also HANAK, supra note 161, at 4–5; cf. Hanak & Chen, supra note 278, at 89 n.6 (noting that in 2004, New Mexico “unsuccesfully proposed restricting all domestic wells to no more than 1 acre-foot per year”).
350. Certainly the real estate lobby has not hesitated before launching campaigns at least broadly contradictory to the efforts of anti-sprawl advocates. See, e.g., Julie Hayward Biggs, No Drip, No Flush, No Growth: How Cities Can Control Growth Beyond Their Boundaries by Refusing to Extend Utility Services, 22 URB. LAW. 285, 286 n.5 (1990) (describing massive campaign to show that “growth is good and should be encouraged rather than restricted”).
environmental movement's credibility in pursuing legitimate objectives due to its prior use of disingenuous means.\textsuperscript{351}

The outlook for the flipside of the backlash issue—whether assured supply laws create greater public participation—is not much brighter. Though one might think that assured supply laws would bring more members of the public into the planning process, this appears not to be the case. Assured supply laws seem to have left levels of public participation unaffected.\textsuperscript{352} Instead, assured supply laws are more likely to be treated as "another claim in your lawsuit" for citizen groups opposing a development in the first place.\textsuperscript{353}

Nor do assured supply laws necessarily protect groundwater. The Arizona statute promotes this objective, but that law was designed for this very purpose. Many others, including the California and multiple Oregon varieties, were not. The result is that unless assured supply laws expressly address the question of groundwater protection, they may actually intensify its overconsumption. California, New Mexico, and Washington exemplify the problem. Developers in these states have exploited regulatory provisions that allow groundwater use to demonstrate assured supply compliance.\textsuperscript{354} In Washington, in fact, there are "[h]undreds of thousands of exempt wells" that allow withdrawals of up to 5,000 gallons per day.\textsuperscript{355} Such wells can harm both resource management and public health. The amounts of water withdrawn using these wells are not quantified by regulators, creating "untold effects" on flows in hydraulically connected rivers and streams, and their increased

\textsuperscript{351} Such a pretext lends itself to a characterization that environmentalists believe growth should simply be halted rather than planned in a way that makes sense. This easily could be cast as the kind of fringe stance that weakens environmentalists' positions on issues that really matter. See Davies, supra note 156, at 359–61.

\textsuperscript{352} E-mail from Jeff Loux, supra note 296; E-mail from Kevin Nichols, supra note 300; Telephone Interview with Jeri Ram, supra note 297; Telephone Interview with David A. Requa, supra note 297; Telephone Interview with Terry Rivasplata, supra note 297; E-mail from Todd C. Tucker & Miles Throop, supra note 297; Telephone Interview with Mike Worlton, supra note 297; cf. Telephone Interview with Doug Dunham, supra note 297 (noting that even if not increasing participation, assured supply laws help educate the public).

\textsuperscript{353} Telephone Interview with Terry Rivasplata, supra note 297.


\textsuperscript{355} Robert N. Caldwell, Six-Packs for Subdivisions: The Cumulative Effects of Washington's Domestic Well Exemption, 28 ENVTL. L. 1099, 1100, 1106 (1998). In New Mexico, 15 percent of households rely on domestic wells. Hanak & Chen, supra note 278, at 90. In some counties in both that state and Colorado, reliance on wells for domestic water supplies may reach 25 percent of households. Id.; see also Maguire, supra note 142, at 379–80 (noting that despite Arizona GMA protections, exempt wells account for consumption of 10 percent of water use in Prescott AMA, though only 1 and 2 percent, respectively, of groundwater pumping in the Phoenix and Tuscon AMAs).
withdrawals may facilitate contamination from "nitrate concentrations, seawater, or agricultural pesticides and herbicides."\textsuperscript{356}

By contrast, the one area where assured supply laws do appear to exclusively yield benefits is conservation. The PPIC data show that the fact a locality has an assured supply law is not statistically correlated with whether the jurisdiction is more or less likely to adopt water conservation measures.\textsuperscript{357} However, instances of developers voluntarily adopting conservation techniques in an effort to meet assured supply requirements increasingly are cropping up. For example, a recent dispute in Monterey, California sparked a settlement in which the builder decided to install extra-efficient water fixtures to tamp down water demand.\textsuperscript{358} Other planners throughout the West also are observing the trend.\textsuperscript{359} Terry Rivasplata, an environmental planner in Sacramento, explains: "This is happening beneath the surface. [Assured supply laws] are making developers look harder at water recycling and more efficient landscaping. They are making water districts . . . that are already thinking about conservation be more proactive to help extend their supplies."\textsuperscript{360}

IV. SMART GROWTH, SMART DESIGN: TOWARD THE IDEAL ASSURED SUPPLY LAW?

Having answered in the affirmative the question of whether assured supply laws provide actual policy benefits, the inquiry that remains is what features an assured supply measure should bear to maximize these laws' policy benefits and minimize their potential costs. In short, the question is: what does the ideal assured supply law look like?

The ultimate answer to this query can be discerned only through continued innovation, tinkering, and experiment on the ground. Nevertheless, analyzing the identified benefits and costs of these laws under the rubric of the five potential design elements provides a substantial starting place. The evidence assessed here shows that assured supply laws have five primary benefits and three principal risks: they protect consumers, make planning more holistic both for specific projects and on an interagency basis, can render the water allocation process more efficient, and encourage greater water conservation. However, assured supply laws also can create a false assurance that they have solved a problem they have not, exacerbate sprawl, and risk inducing backlash

\textsuperscript{356} Caldwell, supra note 355, at 1100.
\textsuperscript{357} HANAK, supra note 161, at 87.
\textsuperscript{358} See Larry Parsons, Lawsuit Pushes Water Talks, MONTEREY COUNTY HERALD, May 17, 2006.
\textsuperscript{359} Telephone Interview with Doug Dunham, supra note 297; E-mail from Jeff Loux, supra note 296; E-mail from Kevin Nichols, supra note 300; Telephone Interview with Terry Rivasplata, supra note 297. But see E-mail from Todd C. Tucker & Miles Throop, supra note 297.
\textsuperscript{360} Telephone Interview with Terry Rivasplata, supra note 297.
against their own enactment as well as the overarching goals their advocates seek to achieve. The synthesis of California’s and Oregon’s respective measures in Part II.C likewise revealed five key attributes that, at one end of the spectrum or the other, every assured supply law bears: (1) compulsoriness, (2) stringency, (3) universality, (4) granularity, and (5) interconnectedness.

Applying these five elements to assured supply laws’ benefits and costs creates a matrix from which a potential model assured supply law emerges. This law is compulsory rather than voluntary. Developments falling within its jurisdictional grasp must comply, because the law requires proof of water rather than merely a hortatory nod that water should be considered in land planning. The law is strict, not lax. It requires a showing of real, “wet” water, not simply a citation to “paper” rights that do not actually exist. The law is universal, not limited. Rather than applying on an ad hoc, fragmented basis, it controls uniformly throughout the state of enactment. The law is more granular than not. It ensures its protections for all developments, without loopholes, rather than focusing only on one genre of project in the universe of many. And the law is interconnected, not stand-alone. It ties in with broader water planning, water conservation, and, potentially, overall environmental planning. The remainder of this Part explores each of these design attributes—and their anticipated effects on assured supply benefits and costs—in further detail.

A. Compulsoriness

One major fault line for assured supply law effectiveness is the law’s compulsoriness—whether the law mandates procurement of water or merely suggests supply consideration. The degree of compulsoriness should affect not only how extensive the law’s benefits will be, but whether they will materialize at all. As projected in Table 1 below, mandatory assured supply laws are more likely to reap the benefits such measures have to offer. Compulsory laws mean that fewer projects evade meaningful review of whether there is sufficient water. By mandating, rather than merely admonishing, proof of supply, compulsory laws are not only more likely to ensure that consumers and water rights holders are protected, but also more certain to compel more holistic planning, and more apt to incentivize builders to use water-saving techniques.

In contrast, if the law is voluntary, these benefits may not come to fruition: if there is no guarantee that the law will actually bring water to development, there also is no guarantee that the law’s benefits will appear. In fact, with respect to consumer protection, a voluntary assured

361. See infra Appendix A.
supply law risks backfiring. If consumers believe they are protected because there is an assured supply law in place, but all the law really requires is consideration of water, consumer protection is a sham.\textsuperscript{362} Thus, while a compulsory assured supply law should have significant consumer protection benefits, a voluntary one may yield only minimal benefits and, potentially, even costs.\textsuperscript{363}

Table 1: Projected Benefits and Costs Based on Compulsoriness

<table>
<thead>
<tr>
<th></th>
<th>Compulsoriness</th>
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<tbody>
<tr>
<td></td>
<td>Compulsory ↔ Voluntary</td>
</tr>
<tr>
<td>Consumer Protection</td>
<td>+++ + / -</td>
</tr>
<tr>
<td>Holistic Project Planning</td>
<td>+++ + / O</td>
</tr>
<tr>
<td>Holistic Interagency Planning</td>
<td>+++ + / O</td>
</tr>
<tr>
<td>Water Rights Efficiencies</td>
<td>+++ + / O</td>
</tr>
<tr>
<td>Water Conservation</td>
<td>+++ + / O</td>
</tr>
<tr>
<td>Symbolic Assurance</td>
<td>O</td>
</tr>
<tr>
<td>Sprawl Exacerbation</td>
<td>O</td>
</tr>
<tr>
<td>Environmental Backlash</td>
<td>- +</td>
</tr>
</tbody>
</table>

Key: "+++" indicates significant benefits, "+" some benefits, "O" no effect, "-" some costs, and "- - -" significant costs. "+ / O" and "+ / -" indicate a range from some benefit to no effect, or some benefit to some costs, respectively. Shaded boxes indicate the design element

\textsuperscript{362} This risk is likely exacerbated where voluntary laws are combined with nonuniversal regimes that allow localities to opt-in or opt-out.

\textsuperscript{363} One might argue that the law need not be compulsory, but merely give notice of whether there is sufficient water, thus allowing the market to maximize efficiencies—those who want an assurance of water will pay for it. The retort to this, however, is four-fold: There is an ethical argument that no development should go without a necessity as basic as water. There likely would be enforcement concerns with ensuring notice in fact is adequate. Such a notice regime could undermine the planning objectives of assured supply laws. And the effects of this scheme likely would be inequitable, with those most in need of compulsory protection most likely to be unable to afford the assurance and to seek redress where developers give inadequate notice.
is pivotal; benefits may become costs (or vice versa) depending on the element's polarity.

One final point: of the five major design parameters for assured supply laws, compulsoriness is the one that should most affect the risk of creating environmental backlash. Developers and property rights activists faced with a law simply requiring consideration of water are unlikely to react with any particular rancor or venom. It is only when there is a mandatory supply requirement that their concerns come into play. Still, given that assured supply laws' ability to produce benefits may turn on their compulsoriness, the backlash risk should not outweigh the need to make assured supply laws mandatory. Indeed, as discussed below, while compulsoriness may matter the most of the five design elements in this respect, it is not the real engine driving the risk of backlash.

B. Stringency

A second fault line on which the effectiveness of assured supply laws may hinge is the level of proof required to show that the needed water will actually be there.

Indeed, the stringency of assured supply laws should have similar effects as their compulsoriness. As projected in Table 2 below, an assured supply law that requires meaningful evidence of both legal and physical water should be associated with high levels of consumer protection, holistic project and interagency planning, and water conservation. This is because a stringent assured supply law—one that requires real proof of real water and not just a reliance on paper rights or hoped-for future sources—means that the water supply determination will be more than façade. In turn, consumers can count on the water to be there when the developers say it will be, planners have to truly consider water impacts, and the incentive for developers to conserve is sharpened. Likewise, the stringent assured supply law avoids the risk of symbolic assurance, which is at its height when developers are allowed to rely on nothing more than the promise of water.

The difference between two examples of stringent and lax assured supply measures drives home how the former should produce significant benefits while the latter will not. Take S.B. 221: developments cannot proceed under that law unless the project's proponents show, based on

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364. Stringency, discussed below, may have the same effect. See Craig Anthony Arnold, Polycentric Wet Growth: Policy Diversity and Local Land Use Regulation in Integrating Land and Water, in WET GROWTH, supra note 52, at 393, 413.

365. See infra notes 389-390 and accompanying text.

366. See, e.g., Maguire, supra note 142, at 371-80 (describing loopholes in Arizona GMA as undermining statute's objective of safe yield).
historical data of actual water availability, that the water they claim to have for the development will actually exist. Thus, consumers should be protected because the results of the water assessment are meaningful. And, for the same reason, the risk of symbolic assurance is removed, and cross-agency water planning that relies on such assessments achieves actual integration based on real data, rather than merely purporting to do so.367

By contrast, consider a regime such as that allowed by Concerned Citizens of Malheur County368 in Oregon. There, the mere possibility of future water was deemed enough. Even though the LUBA recognized that the sources the project intended to rely upon could in fact "be infeasible,"369 it then simply pointed to local groundwater as a source removing this concern, presumably without any real assessment of the existing demands on the aquifer, much less how such increased demand could affect other users or other interconnected water supplies. In that kind of assured supply world,370 the policy benefits available under a more

367. Even more than S.B. 221, the model of stringency is Colorado. There, as in S.B. 221, developers must provide both physical and legal water supply reports. COLO. REV. STAT. § 30-28-133(3)(d) (2007). But in Colorado, a finding of insufficient water is not the only potential death knell for the project. If the State Engineer determines that "the proposed water supply will cause material injury to other water rights, then the State Engineer will recommend denial of the subdivision based on lack of an adequate water supply." Miller et al., supra note 325, at 309. Moreover, because Colorado is perhaps the only state in the West that ties water rights approval to searchingly thorough hydrological examinations, and that will actually ratchet down junior uses where a basin is found to be over-appropriated, the assessment provided by the State Engineer has real meaning beyond that in many jurisdictions. See Abrams, supra note 69, at 6; cf. Empire Lodge Homeowners' Ass'n v. Moyer, 39 P.3d 1139, 1149 (Colo. 2001) ("In times of short supply, water users depend on the State Engineer to curtail undecreed uses and decreed junior uses in favor of decreed senior uses."). Adjudication of water rights in Colorado occurs in specially created Water Courts, which manage rights pursuant to statute. See COLO. REV. STAT. §§ 37-92-101 to -204 (2007).

Some Colorado localities go beyond even State Engineer review and require proof of water for periods as long as 300 years. See, e.g., EL PASO COUNTY, COLO. LAND DEVELOPMENT CODE § 8.4.7., available at http://adm.elpasoco.com/NR/rdonlyres/C5F3EDDB-D480-49F5-9FF8-C64979B28B0E/0/LDCChapter8_Adopted_Rev0.pdf. The downside in all this, however, is that Water Court proceedings can be lengthy and expensive—lasting from two to three years and costing upwards of $75,000. Miller et al., supra note 325, at 308.

368. 47 Or. LUBA 208 (2004); see discussion supra notes 246–248 and accompanying text.


370. Even less stringent than Malheur County are jurisdictions such as Texas. Texas law merely allows localities to require a "geoscientist" or licensed engineer to submit an adequate water supply "certification" before a subdivision plat is approved, if the subdivision intends to rely on groundwater. TEX. LOC. GOV'T CODE ANN. § 212.0101(a) (2007); see also id. § 232.0032(a). See generally Stephan B. Rogers, Texas: Water Supply and the Land Use Connection, 9 W. Water L. & Pol'y Rep. (Argent Commc'ns Group) 323 (2005). Thus, not only does Texas' law apply only if a locality chooses it to—and then only if groundwater is involved—but it has no bite. The Texas law practically begs for a tragedy of the commons: it focuses only on the level of water demanded at "full build out" of the subdivision in question, 30 TEX. ADMIN. CODE §§ 230.2(5), 230.6 (2006), and does not take into account the impacts created by
stringent law rapidly vanish. Consumers are not protected because the water supply requirement lacks teeth; any coordinated planning is futile because the purported water supply "assessment" is hollow; and the ill effects of symbolic assurance pervade.

Of course, for assured supply measures in between these paradigms—those that are perhaps not the most stringent but that do require some meaningful proof of supply—at least some benefits still should inure. Nevertheless, the effectiveness of an assured supply law hinges to a large degree on the premise that the underlying water rights scheme is not conducted on paper alone. The more stringent that scheme becomes, the more beneficial the assured supply law should be.

Table 2: Projected Benefits and Costs Based on Stringency

<table>
<thead>
<tr>
<th>Stringency</th>
<th>Wet Water</th>
<th>Paper Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Protection</td>
<td>+++</td>
<td>+ / O</td>
</tr>
<tr>
<td>Holistic Project Planning</td>
<td>+++</td>
<td>+ / O</td>
</tr>
<tr>
<td>Holistic Interagency Planning</td>
<td>+++</td>
<td>+ / O</td>
</tr>
<tr>
<td>Water Rights Efficiencies</td>
<td>+++</td>
<td>+</td>
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<td>Water Conservation</td>
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<td>Environmental Backlash</td>
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C. Universality

Another basic element of the ideal assured supply law is that it should be as universal as possible. The likely benefits of having a statewide assured supply law should be readily apparent. The chief effect neighboring developments. In fact, the regulations implementing Texas' statute explicitly acknowledge "future pumpage ... from area wells outside of the subdivision" as an "uncertain[y] ... inherent in the determination of groundwater availability." Id. § 230.11(b) (emphasis added). A statutory call for symbolic assurance could scarcely be louder.
is that the universal law should produce greater benefits than a more limited one because it applies to more development. Rather than serving as a true fault line, then, the effect of the universal law is one of degree. A less universal assured supply scheme should still produce the same consumer protection, planning, efficiency, and water conservation benefits as the universal law, though the less universal the measure is, the more diminished those benefits should be.

California and Oregon are again good examples. Because California’s S.B. 221 applies throughout the state, it should deliver the consumer protection, holistic planning, and conservation benefits that law has to offer in every locality from the upper coast to the Mexico border, from the Pacific Ocean to the Sierra Nevada. In Oregon, however, because some localities may adopt real assured supply requirements, but others may promulgate only hortatory measures, the amount of benefits achieved is likely to be more moderate. In even less universal jurisdictions, such as Texas, where localities must actively opt in to enact water availability requirements, the amount of benefits should be even more minimal.

One effect where universal and less universal assured supply laws should diverge in more than degree, however, is the risk of encouraging sprawl. If neighboring areas all have the same assured supply requirement, developers do not have an incentive to seek out adjacent jurisdictions which do not require such proof. But if an assured supply law is adopted only in some localities, the incentive persists. Likewise, a more universal law should create less risk of symbolic assurance than a nonuniversal measure, because a requirement that applies only in some jurisdictions may produce false consumer expectations that the requirement applies everywhere. On the other hand, a more universal assured supply law would engender a greater chance of inciting environmental backlash, but given the benefits that universality should create in every other category, and the fact that universality is not the real impetus for the backlash, this should not weigh against this factor.

Table 3: Projected Benefits and Costs Based on Universality

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<td>Holistic Interagency Planning</td>
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D. Granularity

The correlation of benefits and costs to assured supply laws' granularity should be virtually identical to that for universality. Because a more granular assured supply law that covers, say, all new subdivisions, will bring more projects within its grasp than a measure that applies only to large developments of, say, 500 homes or more, the consumer protection, holistic planning, water rights efficiency, and conservation benefits of the law should be maximized with granularity. Likewise, just as with a more universal law, the more granular measure should carry less risk of creating false consumer assurance, because the more granular law applies on a more widespread—or, perhaps, “deeper”—basis. However, there is one area where a more granular law should break from the more universal one. Because a more granular law applies to more types and sizes of projects rather than to more jurisdictions, it is less likely to reduce the risk of sprawl than the universal law.
Table 4: Projected Benefits and Costs Based on Granularity

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Degree of granularity in fact is a hot topic in assured supply law design. The real estate and development lobby in California, as noted, long opposed enactment of S.B. 221 until the proposal was modified to apply to developments of at least 500 units rather than 200, and this amendment led to a chorus of criticism that developers would circumvent the law by simply building the same number of homes but in multiples of 499.372 Certainly legislators considering assured supply measures would do well to assess the concern of setting the jurisdictional threshold too high—a large enough loophole risks gutting the law altogether. At the same time, there may be a tipping point at which the benefits of making an assured supply law more granular diminish such that it is not worth the additional burden. Most likely, however, where there is not already an existing water provider that scrupulously complies with stringent planning obligations, the assured supply law still serves a purpose.

Many jurisdictions have enacted laws far more granular than S.B. 221. The law adopted by Colorado applies to all subdivisions, which are

372. See, e.g., Kubasek & Frondorf, supra note 41, at 246 n.80; Tarlock & Lucero, supra note 64, at 975. "You could have a lot of developers doing a lot of smaller tracts all over just to get by the rule, ... and we don't think that's the best way to approach land planning." Rene Sanchez, New California Water Law Seeks to Curb Runaway Sprawl, WASH. POST, Dec. 23, 2001 (quoting Marlee Lauffer, spokeswoman for Newhall Ranch).
defined as any lands subdivided smaller than 35 acres.\textsuperscript{373} Nevada likewise has instituted a law that requires future supplies for all subdivisions of land into five or more lots,\textsuperscript{374} which is similar to the threshold for Arizona’s “assured” and “adequate” water programs.\textsuperscript{375} The reality, of course, is that not every jurisdiction that adopts an assured supply law will make the requirement applicable to every new development of every type and size.\textsuperscript{376} And, as the contrast between jurisdictions such as California and Oregon’s Washington County show, simply having assured supply requirements apply to every request for a construction permit is unlikely to benefit consumers or the planning process if the underlying water requirements are not sufficiently stringent. Washington County’s ordinance imposes such a requirement but allowed the Durig development to slip through, while California’s granularity is obviously higher but contains the much less flexible requirement that the water supply be available for twenty years in multiple climatic conditions, with specific evidence required as proof.\textsuperscript{377}

Nonetheless, a higher level of granularity is likely to make assured supply laws more effective. Of course, California’s law, criticized for employing far too coarse a grain, has been shown to act as an important “safety net” that catches numerous developments that local assured supply measures would not have snared.\textsuperscript{378} Even so, it is not just making the net bigger, but also its mesh tighter, that should improve the benefits these laws deliver.

\begin{itemize}
\item \textsuperscript{373} COLO. REV. STAT. § 30-28-110 (2007); see id. §§ 30-28-133, 30-28-136. See generally Miller et al., supra note 325.
\item \textsuperscript{375} ARIZ. REV. STAT. ANN. § 32-2101(55) (2007) (subdivision is “land or lands divided or proposed to be divided ... into six or more lots, parcels, or fractional interests”). The “adequate” water program in Arizona’s rural areas has not prevented an emerging trend of “wildcat” and other subdivisions that increasingly lack water. See, e.g., Arizona Passes Limits on Growth, L.A. TIMES, May 25, 2007, at 25 (noting that many residents in parts of eastern and northern Arizona have to truck in water to their homes); Tony Davis, Opponents Fight to Keep Area Rural, ARIZ. DAILY STAR, Aug. 14, 2006, at A1 (reporting that many wildcat developments in Arizona lack water lines or sewer hookups, instead relying on well water); Tim Ellis, Subdivision Road Assured, Water Isn’t, ARIZ. DAILY STAR, Oct. 15, 2007, at B4 (discussing 15,000-home subdivision in Arizona for which construction continues despite lack of an acquired water supply); Increasing Number of Dry Lots Sold in Rural Arizona, supra note 73 (noting that even though over a third of applications processed by Arizona’s Assured and Adequate Water Supply Office since 2001 lacked an inadequate supply, subdivisions continue to be built). However, the state legislature did recently empower localities outside the state’s AMAs to prevent subdivision approval if adequate water is lacking. See ARIZ. REV. STAT. ANN. § 11-806.01(F).
\item \textsuperscript{376} Some jurisdictions, however, have done just that. For example, Washington’s law, though lax, applies to every building permit. WASH. REV. CODE § 19.27.097(1) (2007).
\item \textsuperscript{377} See supra Parts II.A.1, II.B.2.
\item \textsuperscript{378} HANAK, supra note 161, at 65.
\end{itemize}
E. Interconnectedness

The final major parameter around which assured supply laws might be designed is their interconnectedness with the jurisdiction's broader planning processes and conservation initiatives.

The impact of having a more interconnected assured supply law should be largely similar to the effect of granularity, only on a less dramatic scale given that a more interconnected assured supply measure should be higher in quality but not necessarily encompass a greater number of projects. Obviously the most significant benefit of connecting assured supply laws with water planning is making interagency planning more holistic. Likewise, one would expect that an assured supply law that taps into more extensive water plans will have a better grasp on what water is actually available, and thus, better protect consumers, alert water rights holders, and ensure that project-level planners understand the impacts of their actions. There is also reason to believe that a more interconnected law may promote water conservation more effectively, because involving water planners may give them an opportunity to further educate developers. Better still, an assured supply law will not just be interconnected with the water planning process as a general matter, but will be coupled with direct conservation initiatives or, at the least, explicitly credit developers in the demand assessment for any conservation measures they employ.

Oregon and California once again provide a useful contrast. There is a difference between simply setting forth general statewide planning goals to consider land and water together, as Oregon does, and directly injecting the process of water planning into land development approvals, as California's S.B. 221 and 610 do, by requiring water provider assessments for jurisdictional projects and allowing reliance on UWMPs as evidence of sufficient supply. The result is that under the California model, local land planners are not simply seeking to comply with an overarching set of state-level objectives; they are actually coordinating their land planning with the water planning for the area—a process made even more complete when the interconnection is combined with the broader environmental planning process, such as through CEQA. Thus, to the extent the interconnectedness of the assured supply requirement with the water planning process increases the quality of those assessments, the benefits that assured supply laws can deliver should be maximized. In contradistinction, a loosely interconnected regime such as Oregon's creates no link between the local assured supply assessment and

379. See supra Parts II.A.2.a, II.B.1.
380. See supra note 183 and accompanying text.
381. See supra note 187 and accompanying text.
the larger water planning process and, accordingly, adds no value to the assessment itself. This is not to say that Oregon's process of setting statewide goals lacks substance from a planning perspective—certainly it is a useful device—but from an assured supply vantage, at least, more can be done.

Table 5: Projected Benefits and Costs Based on Interconnectedness

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<td>Holistic Project Planning</td>
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<tr>
<td>Water Rights Efficiencies</td>
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Despite the additional benefits that should inure from interconnected assured supply regimes, the one immediately apparent risk is that a more interconnected assured supply law also may lend itself to reduced scrutiny. If an assured supply assessment can rely on a water plan such as a UWMP because the statute envisions interconnectedness, but the UWMP-like plan is unsound, the benefits tending to arise from a more interconnected assured supply law may largely evaporate unless undue faith in the interconnection itself is avoided. On balance, though, a more interconnected assured supply law should be a more effective one. As Professor Loux explains, “S.B. 610 may in the end be more of a powerful force [than S.B. 221] in that it forces long term analysis and planning and is pushing the ability of interests to [sue] with water as the issue.” 382 The best assured supply laws, in short, do not stand alone. They

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382. E-mail from Jeff Loux, supra note 296.
work together with the other planning devices employed by the
jurisdiction to reach one of their primary objectives: removing the
disconnect between land and water planning.

F. Additional Features and Design

In addition to the major parameters around which assured supply
laws may be designed, there are at least four other features that, though
not critical across the spectrum of potential impacts, certainly improve
the laws' overall effectiveness—and may be critical on a single benefit or
cost.

First, on consumer protection, the primary potential downside to
assured supply laws is that they may create social inequities by raising
housing prices, or limiting the amount of new housing, for low-income
residents. Thus, instituting some sort of "release valve" into the law,
such as a variation of S.B. 221's low-income exemption to ensure that
such communities have water but do not sustain a disproportionate or
unbearable cost, is sensible.

Second, while assured supply laws' primary impact on suburban
sprawl likely comes from a lack of universality, other design features
could help further limit this risk. An exception, for instance, such as S.B.
221's that the assured supply requirement is inapplicable to "infill"
developments, makes sense, particularly if there is an existing public
water provider and the provider is held to rigorous planning
standards.

Third, because surface waters throughout much of the West are
already overappropriated, many new developments plan to rely on
groundwater. Accordingly, while it may not always be feasible as a
political matter, combining assured supply laws with groundwater
management and protection measures can only strengthen their
implementation.

Last, as noted above, whether an assured supply law risks creating a
significant environmental backlash is unlikely to turn solely on the law's
compulsoriness, universality, or stringency. Some of those factors may
alleviate the risk of environmental backlash—usually only in a way that
would minimize the benefits the factor otherwise would create. But
what appears to be really driving this risk is landowners' and developers'
concern that assured supply laws are really just artifices designed to stop

383. See supra notes 97–98 and accompanying text.
384. See supra note 178 and accompanying text.
385. See id.
386. Prunty, supra note 374, at 315.
387. See supra notes 354–356 and accompanying text.
388. See supra Parts IV.A–D.
growth, rather than to ensure it occurs with adequate water.\footnote{389} Accordingly, a final key feature of assured supply laws may be an element that prevents the use of the laws as a subterfuge. The Washington Attorney General, for example, has interpreted localities’ discretion in enforcing that state’s law as limited when a public water provider will not be serving the development. “These criteria must be based on considerations of water quality and quantity, not on other considerations, such as limiting density or the construction of unpopular facilities.”\footnote{390}

CONCLUSION

Assured supply laws have been hailed as everything from commonsense consumer protections to necessary safeguards for prudent local land planning, from the “next step” in making the burgeoning water-land use connection to the “new” way to implement smart growth and forestall sprawl. Certainly assured supply laws deliver some of these benefits. They protect consumers. They make planning decisions more holistic. They can alert water owners that their rights are about to be infringed. And they encourage greater conservation.

But assured supply laws are no panacea. The extent to which they actually provide the benefits they promise hinges to a substantial degree on their design. The ideal assured supply law will be mandatory, stringent, universal, granular, and interconnected with broader planning schemes, but versions of these laws that do not carry these traits risk undermining their own objectives. They may actually confuse consumers, prevent further action on the water-land use front, harm the environmental movement, and facilitate sprawl. In the rush to connect land use and water planning decisions, it is thus important not to get lost in the mere notion that assured supply laws are good, but also to recall that how they are built and implemented very much matters.

Policymakers, legislators, and lawyers also will do well to remember that assured supply laws are not boundless in reach. It is tempting in the wake of the political effort and compromise often necessary to pass such measures to declare victory and move on, but assured supply laws will not finish the job themselves. Assured supply laws alone will not ensure the broader and deeper coordination between water and land use planning needed today. They cannot address how much water society consumes, or how we consume it. And despite the great hope of many environmentalists, assured supply laws are unlikely to solve sprawl. Sprawl and its effects remain, and they warrant—they demand—direct

\footnote{389. See supra notes 347–351 and accompanying text.}
\footnote{390. Mack, supra note 354, at 329 (quoting Attorney General’s Opinion).}
and immediate attention irrespective of whether assured supply laws are in place.

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Somewhere in the Mojave Desert three years ago, the mayor of Las Vegas gave his response. "'Forever!' exclaims the mayor with a mixture of incredulity and indignation. He is answering a question he clearly considers not only preposterous but impertinent, and almost immoral.... The question is, how long can this horizontal city... continue to sprawl its way across the desert?"391

Clearly neither Las Vegas nor the swelling West will expand forever. Even the modern West, grown and growing still on a base of decades of federal investment and technological invention, has limits.392 As the nation's population flocks to the West, as the West's "urban archipelagios" spread,393 we test those limits.394 Particularly in the West,395 but elsewhere that sprawl occurs as well, the impact of residential growth on one of the most important of these limits—water—only continues to increase. It used to be that agriculture dominated water use across the nation, but now agricultural uses are on the decline and domestic consumption is on the rise.396 Even in Las Vegas, "the orgy of waterfalls and man-made lakes account[] for 7 percent of the total usage[, while r]esidential use comprise[s] fully two-thirds of Las Vegas's water use."397

391. Will, supra note 16.
392. E.g., Tarlock & Van de Wetering, supra note 278, at 73.
393. Tarlock & Van de Wetering, supra note 65, at 165.
394. Las Vegas, for instance, recently announced that it will seek to pipe water from the West Desert of Utah to help salve its growing thirst. See Joe Bauman, Groundwater Dispute Heats Up, DESERET MORNING NEWS (Salt Lake City), Aug. 24, 2006, at B3; Ed Koch, Utah Turns Spigot Off for Nevada Lawmakers, LAS VEGAS SUN, Feb. 14, 2007, at A1; see also Randal C. Archibold & Kirk Johnson, No Longer Waiting for Rain, an Arid West Takes Action, N.Y. TIMES, Apr. 4, 2007, at A1 (chronicling recent Western water development projects attempting to match growth).
395. On top of the impacts of increasing population looms the threat of climate change and global warming. Evidence indicates that the reduction in water supplies—both in streamflows and storage (snowpack, groundwater, and lakes/reservoirs) that may come about from temperature increases and altered climatic conditions—is likely to dramatically affect the West, though of course other parts of the country also will see important water-related impacts. See, e.g., Brad Udall & Gary Bates, Climatic and Hydrologic Trends in the Western U.S.: A Review of Recent Peer-Reviewed Research, INTERMOUNTAIN W. CLIMATE SUMMARY (Western Water Assessment project, Univ. of Colo. & NOAA), Jan. 2007, at 2, 7–8; Philip W. Mote et al., Declining Mountain Snowpack in Western North America, 86 BULL. OF THE AM. METEOROLOGICAL SOC'Y 39, 47–48 (2005). See generally Noah D. Hall et al., Climate Change and Freshwater Resources, 22 NAT. RESOURCES & ENV'T (forthcoming 2008), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1026621 (summarizing potential water supply losses from climate change and noting that Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming may be hardest hit).
396. See Tarlock & Van de Wetering, supra note 278, at 40–41.
397. ROTHMAN, supra note 2, at 210.
If Las Vegas truly is "the first city . . . of the 21st century," the new West, the "new America,"\textsuperscript{398} then how the new West begins to grapple with sprawl, its effects, and its demand on water is something the rest of the nation should closely watch. The enactment of assured water supply laws is an important and useful first step in this process, but it cannot be the last.

\textsuperscript{398} Id. at xxvii.
### APPENDIX A: KEY DESIGN ELEMENTS OF AN "IDEAL" ASSURED SUPPLY LAW

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<th>Compulsoriness</th>
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<th>Granularity</th>
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Key: Solid lines indicate that the design element in question may serve as a "fault line" on benefits and costs; it may mean the difference between whether the law delivers benefits or costs. Dotted lines, by contrast, indicate that the design element is likely to relate to the degree of benefits and costs; in other words, it may mean the difference between some benefits and more benefits, or some costs and more costs.