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## Show Me the Water Plan: Urban Water Management Plans and California's Water Supply Adequacy Laws

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## ARTICLE

SHOW ME THE WATER PLAN:  
URBAN WATER MANAGEMENT  
PLANS AND CALIFORNIA'S WATER  
SUPPLY ADEQUACY LAWS

*ELLEN HANAK\**

## I. INTRODUCTION

In 2001, California adopted two landmark pieces of legislation – Senate Bills (SB) 221 and 610 – that require local land use authorities to demonstrate long-term water supply availability before approving new, large development projects.<sup>1</sup> The details of these bills, which quickly became known as the “show me the water” laws, are distinct: SB 610 requires a “water supply assessment” at the relatively early stage of environmental review and covers residential, commercial, and industrial projects (a “project” is typically a development of more than 500 residential units, or a similarly large commercial or industrial development), while SB 221 requires a final check on water availability (a “written verification”) for residential projects of this same size

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<sup>1</sup> S.B. 221, ch. 642, 2001 Cal. Stat. 88; S.B. 610, ch. 643, 2001 Cal. Stat. 94.

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threshold at the later stage of subdivision map approval.<sup>2</sup> Despite these differences, the intent behind both laws is similar: they aim to forge an often missing link in California's local planning process. Under these laws, cities and counties generally cannot make the determination of adequate water supplies on their own, but must instead obtain this documentation from the local water utility that would be serving the project.<sup>3</sup>

SB 221 and 610 are part of a broader state effort to impose water supply planning safeguards on a highly decentralized planning system. The proximate targets were the state's fifty-eight counties and more than 475 incorporated municipalities that have local land use authority – forcing them to coordinate with the local water utilities to ascertain whether adequate supplies are available to support new development.<sup>4</sup> However, California's urban water supply is also highly decentralized, with hundreds of utilities serving these diverse communities. The effectiveness of SB 221 and 610 depends on the quality of the planning efforts of these utilities.

State efforts to impose some planning norms on water utilities began with the passage of the Urban Water Management Planning Act in 1983.<sup>5</sup> The Act required all large urban utilities (defined as those serving

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<sup>2</sup> For smaller communities, the laws apply to projects that would increase the number of the public water system's existing service connections by 10% (or the equivalent for non-residential projects under SB 610). For details on the laws and an account of the legislative history, MCCORMICK, KIDMAN & BEHRENS, ASS'N OF CAL. WATER AGENCIES, WATER SUPPLY AND DEVELOPMENT: A USER'S GUIDE TO CALIFORNIA STATUTES INCLUDING SB 221 (KUEHL) AND SB 610 (COSTA) (2002); *see also* CAL. DEP'T OF WATER RES., GUIDEBOOK FOR IMPLEMENTATION OF SENATE BILL 610 AND SENATE BILL 221 OF 2001 TO ASSIST WATER SUPPLIERS, CITIES, AND COUNTIES IN INTEGRATING WATER AND LAND USE PLANNING (2003).

<sup>3</sup> CAL. DEP'T OF WATER RES., *supra* note 2, at 5, 44.

<sup>4</sup> Indeed, the impetus for the legislation came from the East Bay Municipal Utilities District (EBMUD), a large San Francisco Bay Area Utility, which objected to local development approvals occurring without consultation. EBMUD pushed for this legislation after finding that compliance with a 1995 law it had sponsored requiring water supply assessments, SB 901, was very low. *See* MCCORMICK, KIDMAN & BEHRENS, *supra* note 2. Randelee Kanouse & Douglas Wallace, *Optimizing Land Use and Water Supply Planning: A Path to Sustainability*, 4 GOLDEN GATE UNIV. ENVTL. L. J. 145 (2010).

California has fifty-seven counties with unincorporated areas over which the county government has land use authority. In late 2009, the state had 480 incorporated municipalities (including San Francisco, whose boundaries are coextensive with those of the County of San Francisco). Four of these became incorporated after the passage of SB 221 and 610. *See* League of California Cities: Incorporation Dates of California Cities, [www.cacities.org/index.jsp](http://www.cacities.org/index.jsp) (search for "Incorporation dates of California Cities"). Although a small number of these incorporated entities go by the label "town," they will all be referred to as "cities" in this Article.

<sup>5</sup> ELLEN HANAK, PUB. POLICY INST. OF CAL., WATER FOR GROWTH: CALIFORNIA'S NEW FRONTIER 31 (2005), available at [www.ppic.org/content/pubs/report/R\\_705EHR.pdf](http://www.ppic.org/content/pubs/report/R_705EHR.pdf).

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at least 3,000 retail connections or supplying at least 3,000 acre-feet of water per year) to develop long-term plans for water supply and demand in their service areas, to be updated at least every five years, in years ending in zeros and fives.<sup>6</sup> The list of required elements in these Urban Water Management Plans (UWMPs) has been updated numerous times, reinforcing the core purpose: to provide an assessment of the extent to which current and future water supply sources will be adequate to meet water demand at an appropriate level of reliability in normal years as well as during single or multi-year droughts.<sup>7</sup>

By and large, SB 221 and 610 were crafted to be in sync with the law governing utility planning. Water supply adequacy to support new development needs to be demonstrated over a twenty-year horizon, the minimum planning horizon for a UWMP.<sup>8</sup> A utility's UWMP can be used to demonstrate water availability under both SB 221 and 610, as long as the plan accounts for the increased water demand associated with the proposed development project.<sup>9</sup>

In keeping with California's strong "home rule" tradition, these planning laws rely largely on citizen enforcement rather than direct regulatory oversight by the state. Thus, the laws provide the opportunity for citizens to challenge the responsible local agencies in civil suits.<sup>10</sup> Courts can invalidate the planning documents (UWMPs, water supply assessments, or written verifications), thereby holding up development approvals. SB 610 also introduced financial incentives to water utilities to submit UWMPs. Since 2002, only agencies with "complete" plans are eligible for state financial support for local projects.<sup>11</sup> This change gave

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<sup>6</sup> CAL. WATER CODE §§ 10617, 10620(a), 10621(a) (Westlaw 2010).

<sup>7</sup> See *id.* at §§ 10610.2, 10631(c). For a list of all required elements for the plans due in December 2005, see CAL. DEP'T OF WATER RES., *GUIDEBOOK TO ASSIST WATER SUPPLIERS IN THE PREPARATION OF A 2005 URBAN WATER MANAGEMENT PLAN (2005)*, available at [www.water.ca.gov/urbanwatermanagement/](http://www.water.ca.gov/urbanwatermanagement/). S.B. X7-7, ch. 4, 2009 Cal. Stat. 93, extends the reporting deadline for the 2010 UWMPs for retail utilities to July 1, 2011. The department expects to issue a guidebook for this next round in late 2010. See [www.water.ca.gov/urbanwatermanagement/](http://www.water.ca.gov/urbanwatermanagement/) (last visited Feb. 20, 2010).

<sup>8</sup> CAL. DEP'T OF WATER RES., at 8.

<sup>9</sup> A UWMP can be used as a source document for preparing a water supply assessment under SB 610. A UWMP can also be used to furnish substantial evidence required for the written verification under SB 221. See MCCORMICK, KIDMAN & BEHRENS, *supra* note 2.

<sup>10</sup> In the following cases, private plaintiffs sued to enforce Government Code provisions introduced by SB 610 and SB 221, and the courts recognized that the plaintiffs had valid causes of action: *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, 40 Cal. 4th 412 (2007); *Gray v. County of Madera*, 167 Cal. App. 4th 1099 (Ct. App. 2008); *Friends of the Santa Clara River v. Castaic Lake Water Agency*, 123 Cal. App. 4th 1 (Ct. App. 2004).

<sup>11</sup> This provision of SB 610 expired on January 1, 2006. See CAL. WATER CODE § 10657

the California Department of Water Resources (DWR) the mandate to assess the plans for completeness but not for quality. In sharp contrast to climate change policy, where the California Attorney General has pressured local governments to bring their plans into compliance with state laws aimed at limiting greenhouse-gas emissions, the state has not actively sought to enforce the water supply adequacy laws through the judicial process.<sup>12</sup>

This Article reviews the effectiveness of California's strategy of using enabling legislation and passive enforcement to encourage more integrated local water and land use planning. To shed light on the effectiveness of the current policy framework, the Article begins with a critical overview of the Urban Water Management Planning process, drawing on a detailed analysis of plans submitted in the early 2000s.<sup>13</sup> It then evaluates how water supply assessments are proceeding, with a particular emphasis on steps used to identify adequacy, drawing on telephone surveys of land use authorities and water utilities conducted by the author in 2004 and 2009. A concluding section highlights shortcomings in the current system and suggests steps that could improve California's planning process.

## II. URBAN WATER-MANAGEMENT PLANNING: DECENTRALIZATION CHALLENGES IN A GROWING STATE

For most water utilities – at least those of any appreciable size – long-term planning is a standard operating procedure. Utilities are in the business of delivering a service to end users, and the investments needed to provide that service – treatment plants, underground distribution networks, and assorted infrastructure to deliver fresh water to customers in the service area – are typically costly and take time to implement. These characteristics encourage planning, if only to chart out the desired

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(repealed Jan. 1, 2006), but other funding contingencies for plan components, including those for drought assistance, are still in effect. *See* CAL. WATER CODE § 10656. DWR continues to condition grants and loans on having a complete plan. Telephone interview with David Todd, DWR (Mar. 9, 2010).

<sup>12</sup> The California Attorney General has filed suit against several jurisdictions whose general plans were deemed out of compliance with the California Environmental Quality Act regarding cumulative impacts of greenhouse-gas emissions and has submitted comments to many others, all with the goal of encouraging modifications of the plans. *See* [ag.ca.gov/globalwarming/ceqa/generalplans.php](http://ag.ca.gov/globalwarming/ceqa/generalplans.php) (last visited Feb. 15, 2010).

<sup>13</sup> *See generally* HANAK, *supra* note 5; ELLEN HANAK, DECENTRALIZED GROWTH PLANNING: EVALUATING WATER UTILITY PERFORMANCE (2009), [www.econ.ucsb.edu/~neira/11calworkshop\\_files/Hanak.pdf](http://www.econ.ucsb.edu/~neira/11calworkshop_files/Hanak.pdf).

time path of investments and the strategy for funding them. Thus, when the state introduced the requirement to develop UWMPs in 1983, it was building on established traditions. To this day, many utilities develop plans other than those required by the law, such as water master plans, groundwater-management plans, and integrated water-resource plans.<sup>14</sup> For some utilities, these other documents may be more useful than UWMPs as blueprints for action.

What sets UWMPs apart is the goal of setting some minimum, uniform statewide standards for long-term water planning.<sup>15</sup> The requirements of the UWMPs also aim to stretch utilities to consider elements they might not normally include in the traditional infrastructure-planning process. Traditionally, water managers have tended to focus on expanding supplies of surface water and native groundwater to meet projected demands, without considering the potential for demand management (which can free up supplies) or alternative sources, such as recycled water and transfers of water rights from other users.<sup>16</sup> As new surface and groundwater reserves have become increasingly scarce, the state has encouraged utilities to consider the alternatives.<sup>17</sup>

This intent to make the planning process more comprehensive is reflected in the amendments to the law over time. For instance, in 1991, at the height of a multi-year drought, the act was amended to require that utilities include a water shortage contingency plan (Assembly Bill (AB) 11X) and to provide detailed reporting on demand-management measures (AB 1869).<sup>18</sup> Detailed reporting on recycled water use – a resource with considerable untapped potential – was first required for the plans due in December 2000, and reporting on desalination for the plans due in December 2005.<sup>19</sup>

The law also aims to address some of the coordination issues that

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<sup>14</sup> HANAK, *supra* note 5, at 31.

<sup>15</sup> Numerous revisions and updates to the law have made it a somewhat unwieldy document, with planning requirements interspersed throughout several dozen sections. To assist utilities in plan preparation, the California Department of Water Resources has developed model plans, guidebooks, and worksheets, and it holds workshops on how to comply with the law in the year prior to the plan-submission deadline. CAL. DEP'T OF WATER RES., *supra* note 7. For a copy of worksheets for the 2005 plans, see [www.water.ca.gov/urbanwatermanagement/](http://www.water.ca.gov/urbanwatermanagement/) (follow "UWMP Review Sheets" hyperlink) (last visited Apr. 2, 2010).

<sup>16</sup> See generally Ellen Hanak, *Finding Water for Growth: New Sources, New Tools, New Challenges*, 43 J. AM. WATER RESOURCES ASS'N 1024 (2007).

<sup>17</sup> See *id.* at 1027.

<sup>18</sup> A.B. 11X, 1st Ex. Sess., 1991 Cal. Stat. ch. 13; A.B. 1869, 1991 Cal. Stat. ch. 938.

<sup>19</sup> See A.B. 2853, ch. 366, 1994 Cal. Stat. 2171; S.B. 318, ch. 688, 2004 Cal. Stat. 96.

arise in a decentralized management system. “To the extent practicable,” utilities are required to coordinate the preparation of the plan with other local water agencies, including those sharing a common water source, and must notify cities and counties within their service areas of the opportunity to submit comments.<sup>20</sup> SB 610 added new reporting requirements on groundwater availability – reflecting concerns about broader aquifer-management problems, and the fact that utilities might not be adequately considering the potential for competition for the same resources when identifying available supplies. In the same spirit, in 2002, SB 1384 added a requirement that retail and wholesale utilities share information on projected water demands and supplies.<sup>21</sup>

The effectiveness of the UWMP law in encouraging more comprehensive local planning depends on utility compliance with the spirit as well as the letter of the law, but the law is not structured to shed light on performance. Utilities are required to submit the plans to DWR,<sup>22</sup> but the department has a very limited review mandate. It can assess whether the plans include all the required elements, but not whether the information contained in the plans is sound.<sup>23</sup> Department staff inform utilities when they judge a plan to be incomplete, but the state does not monitor or analyze fundamental issues such as whether the reported groundwater supply sources are really available, or whether the conservation plans are sufficiently aggressive.<sup>24</sup>

For the UWMPs that were due in December 2000, the author was able to evaluate the overall performance of the system, by combining a database of plan content compiled by DWR staff with other information on utility and service-area characteristics.<sup>25</sup> This analysis revealed a number of weaknesses in the UWMP planning process, including basic compliance problems (failure to submit altogether or to include essential planning data) as well as coordination problems (such as failure to consider competing uses of the same water supplies). These findings, summarized here, have implications for the effectiveness of UWMPs as a planning tool, and, by extension, for the effectiveness of the “show me the water” laws.

In 2000, 418 utilities were large enough to meet the law’s definition

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<sup>20</sup> CAL. WATER CODE §§ 10620, 10621.

<sup>21</sup> S.B. 1384, ch. 969, 2002 Cal. Stat. 93.

<sup>22</sup> CAL. DEP’T OF WATER RES., *supra* note 2, at xiii.

<sup>23</sup> *Id.*

<sup>24</sup> HANAK, *supra* note 5, at 3, 33, 103.

<sup>25</sup> *Id.* at vi.

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of “urban water supplier,” and thereby required to submit a plan.<sup>26</sup> This included twenty-six agencies providing only wholesale services (supplying other utilities) and 392 retail agencies (supplying households and commercial and institutional establishments), nineteen of which doubled as wholesalers.<sup>27</sup> Although many more small utilities operate in the state, those required to submit plans had a combined service area including the vast majority of the state’s population (86%).<sup>28</sup> Coverage was slightly lower (79%) for the new homes built between 1990 and early 2000, reflecting faster growth in the state’s less developed areas, where utilities are less likely to meet the size threshold.<sup>29</sup> Coverage of the population was also lower in several regions with smaller towns and more rural development patterns where utilities also tend to be smaller – the Central Coast (66%), the San Joaquin Valley (65%) and the rural counties located outside of the state’s metropolitan areas (53%).<sup>30</sup>

Although the potential coverage of the UWMP law is fairly good, compliance problems translate into a somewhat less positive picture. By mid-2003, a full two and a half years after the due date, all twenty-six of the pure wholesale agencies had submitted a plan,<sup>31</sup> but eighteen percent of the agencies with retail services had not done so, bringing the population actually covered by plans down to seventy-seven percent.<sup>32</sup> Between July 2003 and August 2004, another nine eligible utilities submitted plans, raising coverage to eighty-four percent of eligible retailers and seventy-eight percent of the population.<sup>33</sup> In the rural counties and the fast-growing San Joaquin Valley, low submission rates meant that only a third of the population was actually covered by a plan.

Among the submitters, there were significant gaps in the provision of required information and analysis. On average, the plans were missing information on seven of the fifty-six required elements.<sup>34</sup> These gaps were particularly severe for essential quantitative information,

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<sup>26</sup> *Id.* at 34.

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

<sup>29</sup> *Id.* at 34-35.

<sup>30</sup> *Id.* at 35.

<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> *Id.* at 35 n.4

<sup>34</sup> These elements included information on the process of plan preparation (three), supply and demand planning (seventeen, of which ten required detailed quantitative information), wastewater and recycling (eleven, of which three required quantitative information), demand management (fourteen), and water-shortage contingency planning (eleven). For a detailed list, *see* HANAK, *supra* note 5, at 115-18.

particularly for water demand: whereas eighty-four percent of those submitting plans provided quantitative information on planned supply sources over a twenty-year horizon, only sixty-three percent did so for projected water use.<sup>35</sup> Quantitative information on supply reliability was also relatively low, with more than a quarter of submitters failing to report estimates of volumes available during single and multi-year dry periods.<sup>36</sup>

Some characteristics of utilities and their service areas appear to have made a difference in how well or how poorly the utilities were complying with the law.<sup>37</sup> Submission of a plan was significantly less likely for utilities that were smaller, operating in isolation (outside of a wholesale distribution network), and constituted either as a municipal water department or under private ownership rather than a special district.<sup>38</sup> Among those utilities that did submit plans, the most significant predictors of poor performance were, once again, organizational structure (with municipal and private utilities performing worse) and isolation (notably, lack of involvement of other agencies and the public in the planning process and lack of joint provision of water and wastewater services).<sup>39</sup> In addition, poor performance was associated with a troubling community characteristic from the standpoint of SB 221 and SB 610 compliance: faster growth.<sup>40</sup>

Data in the plans submitted by the relatively good performers (at least from the perspective of completeness) also reveals some troubling information about the lack of coordination in the state's decentralized water supply planning system.<sup>41</sup> On the whole, utilities were projecting fairly constant levels of per-capita water use out to 2020 – in contrast to the state's own projections that per-capita water use would be trending downward.<sup>42</sup> To accommodate the resulting demand growth, utilities

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<sup>35</sup> *Id.* at 43.

<sup>36</sup> *Id.* at 115.

<sup>37</sup> See HANAK, DECENTRALIZED GROWTH PLANNING: EVALUATING WATER UTILITY PERFORMANCE, *supra* note 13, at 30-31 tbls. 3, 4.

<sup>38</sup> See HANAK, *supra* note 5, at 39-40.

<sup>39</sup> See *id.*

<sup>40</sup> See *id.* at 42.

<sup>41</sup> These statewide estimates are based on available data on supply and demand projections from the plans of a sample of utilities covering about two-thirds of the state's population. See *id.* at 135.

<sup>42</sup> For state estimates, see the demand scenarios in CAL. DEP'T OF WATER RES., CALIFORNIA WATER PLAN UPDATE 2005: BULLETIN 160-05 Vol. 1, ch. 4; Vol. 4 ("Quantified Scenarios of 2030 Water Demand") (2005), available at [www.waterplan.water.ca.gov/previous/cwpu2005/index.cfm](http://www.waterplan.water.ca.gov/previous/cwpu2005/index.cfm); see also HANAK, *supra* note 5, at 19 fig. 2.4. For estimates from the UWMPs, see HANAK, *supra*

were projecting substantial increases in water supplies, on the order of 3.4 million acre-feet.<sup>43</sup>

A breakdown of the composition of supply sources reveals some areas of innovation but also major areas of concern. Departures from “business as usual” include a near-tripling of recycled water use from 2000 and an increase in water transfers – together accounting for fifteen percent of the projected supply increase.<sup>44</sup> More problematic: utilities were counting on more than 1.2 million acre-feet of additional groundwater, and 1 million acre-feet of additional supplies from their wholesalers.<sup>45</sup> For these sources, the projections signal coordination failures. Only about a third of the projected increase in groundwater was by utilities drawing from managed basins, where water masters or special management agencies are charged with ensuring recharge. Two-thirds of the pumping increase was projected within the fast-growing Central Valley, where the lack of rigorous basin-management rules raises the specter of uncoordinated withdrawal from basins that already face problems of overdraft.<sup>46</sup> Similarly, the large projected increase in wholesaler supplies (which typically come from surface-water sources) raises red flags, since the retailer plans were generally not closely coordinated with those of their wholesalers.<sup>47</sup>

The prospect of conflict over water resources in communities facing demand growth is also apparent in the fact that the majority of utilities reported excess supplies, under both current and future conditions.<sup>48</sup> Although some margin of comfort is certainly desirable, the magnitudes involved – some 2 million acre-feet per year – suggest that many utilities were counting on using water that is already being used by someone else within the state’s water system.

In sum, this review of the UWMPs submitted in the early 2000s suggests a range of factors that are problematic from the standpoint of long-term planning to accommodate population growth. In particular,

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note 5, at 45 tbl. 3.2.

<sup>43</sup> HANAK, *supra* note 5, at 45. In 2000, urban water use was estimated at roughly 8.9 million acre-feet. See CAL. DEP’T OF WATER RES., *supra* note 42, at 3-9 tbl. 3.1.

<sup>44</sup> See HANAK, *supra* note 5, at 46 fig. 3.2.

<sup>45</sup> *Id.* at 135 tbl. B.8.

<sup>46</sup> See CAL. DEP’T OF WATER RES., *supra* note 42, at 4-16 on the problems of overdraft, estimated to amount to 1 to 2 million acre-feet annually.

<sup>47</sup> Two exceptions were in Sonoma and Los Angeles Counties, where the wholesale agencies (Sonoma County Water Agency and Castaic Lake Water Agency, respectively) and local retailers presented coordinated UWMPs. See HANAK, DECENTRALIZED GROWTH PLANNING: EVALUATING WATER UTILITY PERFORMANCE, *supra* note 13, at 22 n.21.

<sup>48</sup> See HANAK, *supra* note 5, at 48 fig. 3.3.

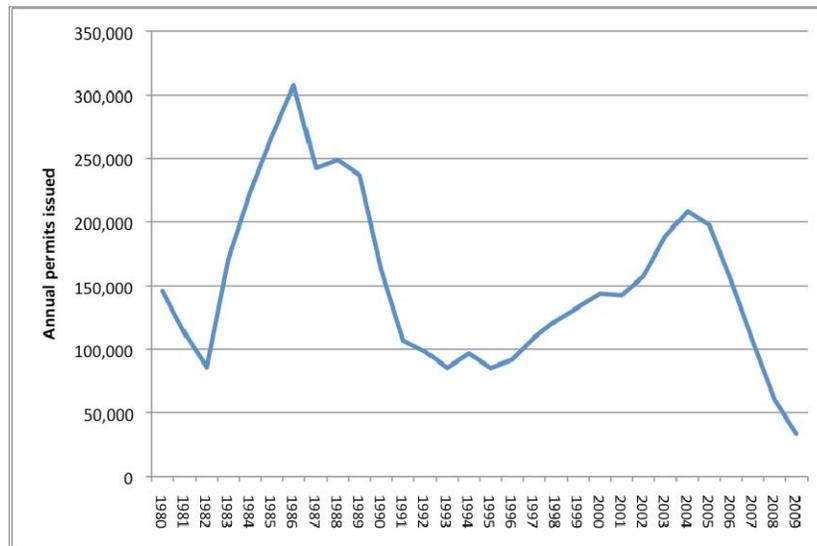
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compliance was lower in the fastest growing communities, utilities were putting little emphasis on demand management, and there was a general tendency to neglect potential resource management conflicts arising from supply augmentation.

## III. WATER SUPPLY ADEQUACY: SB 221 AND SB 610 ON THE GROUND

The “show me the water” laws came into effect in January 2002, in the midst of a housing-construction boom that began in the late 1990s and peaked in the mid-2000s (Figure 1). New housing activity has since plummeted as a result of the economic recession, which coincided with the onset of serious water supply reliability concerns for large parts of the state.<sup>49</sup>

Figure 1. California residential construction permits, 1980-2009



Source: U.S. Census

Hydrologic conditions have been one source of concern, with a multi-year drought leading to calls for voluntary cutbacks and mandatory

<sup>49</sup> See JAY LUND ET AL., PUB. POLICY INST. OF CAL., ENVISIONING FUTURES FOR THE SACRAMENTO-SAN JOAQUIN DELTA 7 (2007), available at [www.ppic.org/content/pubs/report/R\\_207JLR.pdf](http://www.ppic.org/content/pubs/report/R_207JLR.pdf).

rationing in numerous service areas across the state.<sup>50</sup> More troubling for many utilities in Southern California and the Bay Area (as well as farmers in the San Joaquin Valley) is the prospect of reduced long-term supply reliability as a result of regulatory cutbacks in surface water supplies conveyed through the Sacramento-San Joaquin Delta. In the early 2000s, the Delta, which serves as a conveyance hub for both the state-run State Water Project and the federally-run Central Valley Project, began to experience sharp declines in several species listed under the federal Endangered Species Act (ESA).<sup>51</sup> In response to lawsuits brought by environmental organizations, a federal court invalidated the Biological Opinions for the two projects required for their incidental take permits under the ESA.<sup>52</sup> The new Biological Opinions, which require significant restrictions on pumping operations in the South Delta, are expected to reduce Delta exports by twenty-five to thirty percent on average.<sup>53</sup> The higher cutbacks in wet years have raised particular concerns for urban utilities, as this limits their ability to replenish managed groundwater basins and local surface storage south of the Delta.<sup>54</sup>

Against this background of shifting conditions in the housing market and long-term water supply reliability, how have local agencies been responding to the new water supply adequacy laws? To shed light on this topic, the author conducted two telephone surveys of communities with development projects subject to review for water availability. The first survey, in the summer of 2004, involved contacting planners in fifty-nine cities and counties that had reported review activity under SB 221 or 610 in a statewide survey conducted earlier that year.<sup>55</sup> Within these jurisdictions, water supply adequacy reviews (mostly under

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<sup>50</sup> See ASS'N OF CAL. WATER AGENCIES, DROUGHT ACTION BY AGENCY, [www.acwa.com/issues/cadrought/report.asp?type=1](http://www.acwa.com/issues/cadrought/report.asp?type=1) (last visited Mar. 2, 2010). As of March 2, 2010, the site reported data from sixty-seven urban suppliers with mandatory conservation programs in place, and another fifty-six with voluntary conservation programs. *Id.*

<sup>51</sup> LUND ET AL., *supra* note 49, at 7, 31.

<sup>52</sup> See JAY LUND ET AL., PUB. POLICY INST. OF CAL., COMPARING FUTURES FOR THE SACRAMENTO-SAN JOAQUIN DELTA 2 (2008), available at [www.ppic.org/content/pubs/report/R\\_708\\_EHR.pdf](http://www.ppic.org/content/pubs/report/R_708_EHR.pdf).

<sup>53</sup> *Id.* at 3.

<sup>54</sup> Conversations with Southern California and Bay Area water utility officials (Feb. 2010) (discussions guaranteed anonymity).

<sup>55</sup> For the earlier survey, see ELLEN HANAK & ANTONINA SIMETI, PUB. POLICY INST. OF CAL., WATER SUPPLY AND GROWTH: A SURVEY OF CALIFORNIA CITY AND COUNTY LAND-USE PLANNERS (2004), available at [www.ppic.org/content/pubs/op/OP\\_304EHOP.pdf](http://www.ppic.org/content/pubs/op/OP_304EHOP.pdf).

SB 610) had been completed for ninety-five projects.<sup>56</sup> The second survey, in the fall of 2009, involved contacting city and county planners (and in some cases their water utilities) in 108 jurisdictions that had reported potentially qualifying projects under environmental review to the State Clearinghouse and Planning Unit within the Governor's Office of Planning and Research since 2005.<sup>57</sup> In all, ninety-six jurisdictions had completed water supply assessments for 261 projects in this period.<sup>58</sup> Whereas the first survey provides insights on early review activity under the new laws, the second captures projects for which the linkages envisaged between water supply-adequacy reviews and UWMPs were more likely to be in place, since the UWMPs due in 2005 were the first prepared after the passage of SB 221 and 610.

#### A. COMPLIANCE IN THE EARLY YEARS (2002-2004)

The first survey revealed a high level of compliance with the new laws, with little evidence that communities were neglecting to review projects or that developers were skirting the laws' requirements by setting project sizes just below the threshold – one of the concerns that had been voiced in the negotiations over the legislation.<sup>59</sup> In all, nine of the ninety-five projects were initially deemed to have insufficient supplies, and in seven of these cases, developers were asked to find additional water supplies or to scale back the projects.<sup>60</sup> For two projects located in outlying areas, the option of augmenting supplies was considered infeasible, and the projects were rejected.<sup>61</sup>

Overall, there was a striking degree of attention to nontraditional

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<sup>56</sup> See HANAK, *supra* note 5, at 75.

<sup>57</sup> The State Clearinghouse maintains a searchable database of California Environmental Quality Act (CEQA) documents that require state review. See [www.ceqanet.ca.gov/QueryForm.asp](http://www.ceqanet.ca.gov/QueryForm.asp). We searched all projects with the keywords "residential," "subdivision," "development," and "project" that had at least 500 residential units or a sizeable expansion of commercial space, or, for smaller communities, projects that had the potential to increase demand by 10%. We excluded four jurisdictions with projects deemed too small to pass the size threshold, four that had not yet begun the review process, and four for which we were unable to obtain sufficient information. We augmented the sample of projects subject to review based on information provided in the interviews. Survey results reported here have not been published elsewhere.

<sup>58</sup> See *id.* Insufficient information was available on another twenty-four projects in these jurisdictions.

<sup>59</sup> See HANAK, *supra* note 5, at 66-68, 74-81. For the legislative history, see MCCORMICK, KIDMAN & BEHRENS, *supra* note 2. SB 221 had initially proposed a review threshold of 200 units, but this was adjusted upward in negotiations leading to the bill's passage.

<sup>60</sup> HANAK, *supra* note 5, at 75.

<sup>61</sup> *Id.*

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water sources – notably recycled water use and conservation. Three out of ten approved projects were planning to use recycled or raw water for landscaping, adopt landscape conservation strategies, and/or augment indoor conservation with water-saving appliances in existing neighborhoods, and another tenth of the sample was planning to incorporate outdoor conservation policies consistent with general local policies.<sup>62</sup> In some cases, these components were incorporated into project design before review; in others they were added as a condition of approval.

However, there were also signs of the same type of coordination problem witnessed in the review of UWMPs. In areas lacking strong groundwater-basin oversight, some developers were proposing projects using groundwater despite concerns of negative consequences for existing users.<sup>63</sup> Conflicts of this type arose in San Luis Obispo County and in Kern County, both areas with high groundwater dependency and overdraft problems in unadjudicated basins. In both cases, developers were required to implement conservation measures before the projects could go forward.<sup>64</sup> In Kern, the experience led the County to update its General Plan to require high-water-using projects to show supplies in addition to groundwater.<sup>65</sup>

#### B. COMPLIANCE SINCE 2005

Overall, the second survey reveals many similar findings.<sup>66</sup> Although only one project in the sample was explicitly blocked because of water supply concerns, nearly thirty percent of all projects took special measures to introduce conservation, recycled-water use, or, in at least one case, new water made available through water transfers (Table 1). In addition, many Southern California, Bay Area, and Central Coast communities now have standard measures for water-use efficiency that apply to all new projects. The requirements were least prevalent in the Central Valley, where they were concentrated in a handful of communities: unincorporated Kern County (where the County has continued to impose restrictions on groundwater-based projects) and the City of Fresno (where projects are required to install purple pipes to

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<sup>62</sup> *Id.* at 76.

<sup>63</sup> *Id.* at 80-81.

<sup>64</sup> *Id.*

<sup>65</sup> *Id.* at 81.

<sup>66</sup> *See supra* note 57. Unless otherwise indicated, the information in subsections B and C are from the 2009 survey.

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accommodate recycled water use). In most cases, these requirements were imposed as part of the approval process, but in several communities where water supply issues are especially contentious, the projects were preemptively designed to be “water smart” to limit controversy. This was the case, for instance, in the Coachella Valley, and in the Santa Clarita area of Los Angeles County, which has been plagued by water and growth controversies for over a decade (including one of the few lawsuits to be filed against a UWMP).<sup>67</sup>

Table 1. Projects with water supply assessments, 2005-2009

Jurisdictions	Projects	Housing units	Projects with special requirements	
Bay Area	28	70	72,412	31%
San Joaquin Valley	18	62	107,927	13%
Southern California	21	65	145,523	42%
Sacramento Metro	9	26	172,154	8%
Central Coast	8	13	18,518	38%
Rural Counties	12	25	25,291	28%
California	96	261	541,825	27%

Source: Author survey, Fall 2009.<sup>68</sup>

The housing slowdown has resulted in numerous reviewed projects being cancelled or put on hold (particularly in the San Joaquin Valley), and it has slowed the pace of new projects under consideration. Were it

<sup>67</sup> See also HANAK, *supra* note 5, at 77-80. The lawsuit invalidating the UWMP over failure to address remediation of a contaminated groundwater source was *Friends of the Santa Clara River v. Castaic Lake Water Agency*, 123 Cal. App. 4th 1 (Ct. App. 2004). James Moose, *The Relationship Between Water Supply and Land Use Planning: Leading Cases Under the California Environmental Quality Act*, 4 GOLDEN GATE UNIV. ENVTL. L. J. 27 (2010).

<sup>68</sup> See text for a description of the sample, drawn from State Clearinghouse (CEQAnet). In all, 177 projects included non-residential construction, of which twenty-eight were exclusively non-residential. The largest residential project is the Master Environmental Impact Report for a general plan update in the City of Sacramento, with 97,000 units.

not for the slowdown, the decreased water supply reliability in areas dependent on the Delta would likely have resulted in many more water-related restrictions on new development. Already, several communities in the Bay Area and Southern California whose utilities contract for Delta water are imposing stricter conditions than those seen in the first survey, including stronger recycling requirements (such as on-site treatment) and conservation offsets. The one project in the sample that was blocked over water supply concerns was in the City of Yucaipa (San Bernardino County), where the community requires all new developments to purchase and store twenty years worth of water before getting approval for a water connection. With the drought and Delta pumping restrictions, the lack of supplemental State Water Project water for purchase has put the project on hold indefinitely. Several respondents indicated that they expected restrictions to increase for new projects, including a rise in requirements for “water neutral” developments, which fully offset their water use through recycling and the funding of conservation retrofits in existing developments. Although there is clearly some potential for additional conservation and recycled water use within the regions dependent on the Delta, strategies relying entirely on offsets are likely to significantly slow the pace of housing growth once the economy recovers.

Meanwhile, a large number of communities within the Sacramento Metro Area, the San Joaquin Valley, the rural counties, and several Bay Area counties (Solano, Contra Costa, and Sonoma) reported no perceived problems of long-term water availability for development. Indeed, several communities north of the Delta foresee large increases in surface water diversions to support growth.<sup>69</sup> When requirements are imposed on new development in these communities, they typically involve paying to sink new wells or otherwise helping to fund new water-related infrastructure. Although this assessment of supply abundance is likely accurate in some cases, the lack of coordinated groundwater management also raises the likelihood of overdraft problems in others.

### C. THE ROLE OF UWMPs IN WATER ADEQUACY REVIEWS

In principle, the “show me the water” laws provide a significant

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<sup>69</sup> Both Sacramento and West Sacramento plan to increase diversions within their existing water rights. Vacaville expects to use water obtained in a 2003 settlement with DWR over an area-of-origin water rights application. Two Stockton utilities plan to augment supplies with a new surface-water diversion in the Delta.

incentive to produce a solid UWMP, which makes it possible to streamline development approvals. DWR's guidelines and worksheets for the 2005 round of UWMPs included tables to accommodate taking the planning window out to 2030 (five years beyond the mandated twenty-year horizon), so that a plan can be used to cover new development proposed within the five-year window between UWMP updates.<sup>70</sup>

Overall, submissions of plans for the 2005 round were up somewhat from the previous round: DWR estimated that 452 utilities met the size threshold, and by mid-2008 only fourteen percent of the retailers had not yet submitted (down from eighteen percent five years earlier).<sup>71</sup> By October 2009, only eleven percent (forty-two retail utilities) were delinquent.<sup>72</sup> Still, only fifty-three percent of the plans for which DWR had finished its review were deemed complete – suggesting significant gaps in plan quality.

To take a closer look at how the linkages are working, the telephone survey sought information on which utilities were involved in the water adequacy reviews and what type of documentation they used in the water supply assessments. In all, ninety-five utilities were involved in the projects subject to screening, including two new utilities that were to supply rural projects in Sutter and Kern counties. In all, seventy-six utilities (80%) had submitted UWMPs to DWR. All but two of the missing cases involved utilities not considered large enough to be subject to the UWMP law.

Thus, overall compliance was higher than average for the utilities subject to water adequacy screening, with ninety-seven percent having submitted plans, versus only eighty-six percent for all utilities. These utilities were also somewhat more likely to have passed the DWR review for completeness, at sixty-four percent (versus fifty-three percent for all UWMPs). And four out of five of these plans were prepared with projections out to 2030. When available, UWMPs appear to be used routinely as supporting documents for water supply assessments. This is true even in cases where the proposed project was not included in the UWMP demand projections, and supplemental analysis of water supply availability was needed to provide a favorable review. A few utilities use the UWMP as the sole supporting document for water supply availability

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<sup>70</sup> CAL. DEP'T OF WATER RES., *supra* note 7, at 8.

<sup>71</sup> Author's calculations using compliance data from Cal. Dep't of Water Res. (received Oct. 22, 2009) (on file with author).

<sup>72</sup> *Id.*

when the project was accounted for in the water plan's projections.<sup>73</sup> The City of Sacramento has developed a short (three-page) water supply assessment form for such projects.<sup>74</sup>

Taken together, this evidence suggests that the introduction of formal linkages between the laws on water supply adequacy and water-management planning is beginning to bear fruit. However, there still appear to be important gaps in the water supply planning process itself that limit the ultimate effectiveness of this decentralized planning system.

Although a detailed examination of the 2005 round of UWMPs is beyond the scope of this analysis, the author was able to examine demand and supply projections contained in the plans of sixty-three of the utilities that conducted water adequacy reviews.<sup>75</sup> Some improvements are apparent relative to the 2000 round of plans. Notably, in compliance with a new requirement introduced with SB 610, the new plans provide a fuller description of groundwater sources used – in many cases including a description of basin overdraft conditions. Supply projections also appear somewhat more diversified than in 2000, with more utilities considering transfers, recycling, and desalination options. Overall, two-thirds of the utilities projected declines in per-capita water demand.<sup>76</sup> There are some inconsistencies in this regard, with some agencies deducting conservation savings from baseline demand projections, and others projecting baseline demands as though conservation were not expected to occur, and then explicitly documenting conservation savings as a new source of supply. Other problems are still apparent in some plans, including missing data, data inconsistencies (e.g., supply sources that do not sum to totals presented elsewhere), and optimistic assumptions about the availability and reliability of some water sources.

One particular area of concern relates to the continued absence of systematic coordination between retailer and wholesaler plans. Although

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<sup>73</sup> For instance, this was the case for some projects in San Francisco, Mountain View, and Los Angeles.

<sup>74</sup> See, e.g., [www.sacgp.org/documents/AppendixM\\_WSAandWaterInfo.pdf](http://www.sacgp.org/documents/AppendixM_WSAandWaterInfo.pdf) (last visited July 5, 2010).

<sup>75</sup> Many of the plans deemed complete are available for download on DWR's website. See [www.water.ca.gov/urbanwatermanagement/UWMP.cfm](http://www.water.ca.gov/urbanwatermanagement/UWMP.cfm) (follow "UWMPs" hyperlink).

<sup>76</sup> Assessment is based on the author's statistical examination. It is worth noting that per-capita demand reductions might not be a good indicator of conservation efforts in all cases. For instance, if a community is expecting significant commercial or industrial growth, per-capita demand might increase despite water-use-efficiency improvements. However, on balance one should expect to see decreases if utilities are generally working to increase water-use efficiency.

there has been some improvement since 2000, with several fully coordinated plans presented for the 2005 UWMPs, most retailer and wholesaler plans are still prepared separately.<sup>77</sup> One risk, as noted above, is that retailers are in some cases making incompatible projections to augment their draws on wholesaler supplies.<sup>78</sup>

Another problem that has become apparent in the context of water supply adequacy reviews is the lack of consistency in the ways retailers view potential reliability problems when they rely on wholesaler supplies. Some local agencies in Southern California that rely on wholesale sources from the Metropolitan Water District of Southern California and its member agencies have been implementing increasingly aggressive requirements for new developments, and in at least two cases, developments have been put on hold because of recent supply-reliability concerns.<sup>79</sup> Meanwhile, one retail agency in Los Angeles County reported that agency staff did not believe it was their place to make an autonomous decision about water supply availability, since they believed that Metropolitan had projected that supplies would be available. Another retail agency in San Diego County reported that staff would like to require offsets for new development but feel this is beyond their authority, given that Metropolitan and the local wholesaler (San Diego County Water Authority) have said water supply is in surplus. These interpretations of wholesale supply reliability are not consistent with the wholesalers' own positions. (Neither agency promises precise amounts to retail agencies, and neither has gone on record that it will ensure supplies needed for new developments under SB 610 and 221 within its retail network.) They also suggest a misunderstanding of the scope of authority (and responsibility) of retail agencies in the water adequacy-review process.

Of course, the effectiveness of the linkages between the UWMP and water adequacy laws is also limited by the fact that some new development takes place in areas without large utilities. As noted above,

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<sup>77</sup> In addition to the Sonoma County Water Agency and Castaic Lake Water Agency and their members, which had submitted regional plans in 2000, regional plans for 2005 were prepared by wholesalers and retailers associated with the Mojave Water Agency and by several agencies in the Hollister area of San Benito County.

<sup>78</sup> See HANAK, *supra* note 5, at 47.

<sup>79</sup> This includes the Yucaipa Valley case noted above as well as some projects within the Eastern Municipal Water District Service Area (Riverside County), where will-serve letters were not issued pending an improvement in the water supply outlook in light of the drought and Delta pumping restrictions. See Jennifer Bowles & Dan Lee, *Perris-Based Water District First To Postpone Delivery Deals to Major New Developments*, RIVERSIDE PRESS ENTERPRISE, Dec. 11, 2007.

UWMPs tend to be weaker in areas that are experiencing faster growth, and growth also tends to be faster in outlying areas that are not covered by UWMPs at all. (In the sample surveyed here, eleven percent of all projects fell into this category.) In these cases, the onus falls on land use authorities to manage the review process and ensure that supplies are adequate to support growth. Yet these are often the areas where the local governments are least equipped to manage such reviews, and where technical information on supplies such as groundwater is least developed.

#### IV. UNFINISHED BUSINESS

California's water supply-adequacy laws distinguish themselves from those of other states in the arid southwest, where state engineers directly review water adequacy in a significant number of cases.<sup>80</sup> Indeed, California is an interesting hybrid from the perspective of planning law. The state's "home rule" tradition is strong – with deep-seated notions that both land use and water supply should be managed at the local level. Yet the public's desire to provide regulatory oversight is also strong, particularly in the area of environmental management. The compromise has been a series of state laws that aim to impose some planning norms on local agencies. The regulatory mechanism is a passive one – rather than applying state sanctions for noncompliance, the laws rely on the potential for civil lawsuits as the primary enforcement mechanism.

In principle, one might argue that the incentives under this system are well placed, since local community members have the greatest stake in making sure the laws are upheld. They are, after all, the parties who will bear the brunt of supply shortfalls if the plans overstate water availability. On the other hand, the costs of organizing and developing an adequate technical understanding of local water supply conditions could impede civil action in cases where it might be warranted. Moreover, local planning failures can have negative spillovers on other communities when they result in uncoordinated use of shared resources such as groundwater.

The findings presented here suggest that both the water supply adequacy laws and the law requiring urban water management plans have been honored to a large degree. Nevertheless, there remain some

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<sup>80</sup> Ellen Hanak & Margaret K. Browne, *Linking Housing Growth to Water Supply: New Planning Frontiers in the American West*, 72 J. AM. PLAN. ASS'N 154, 156 (2006). State engineers play an important role in Arizona, Colorado, Nevada, and New Mexico, for instance.

significant gaps and coordination problems that limit the laws' effectiveness in reliably balancing long-term supplies and demands in a growing state. The linchpin of a sound system is strong long-term water-management plans. One fundamental weakness in California's decentralized planning framework is the lack of comprehensive management of groundwater basins, which encourages competition and unsustainable basin management. But even in areas where basins are fully managed through adjudications or special management districts – as is the case in much of urban southern California – decentralized water-resources planning can result in coordination failures if retail plans are not developed in close conjunction with wholesale water suppliers.

These limitations do not undermine the premise that decentralized planning can effectively respond to the needs of local communities. But they do suggest the need for more state oversight and incentives – regulatory or financial – to encourage water utilities to coordinate within wholesale networks, and more generally, within the same groundwater basin and watershed, in accounting for supply sources.

Although the UWMP law has progressively added new requirements to encourage more comprehensive planning and to address areas of concern such as groundwater use, the fundamental issue of whether the plans make sense collectively – that is, whether they add up – has yet to be addressed. Several reforms are needed to allow the plans to work as intended. First, agencies should be required to classify their level of confidence in projected new supply sources in a standard way, to allow more transparent assessment of the likelihood of the supply becoming available.<sup>81</sup> Second, more explicit coordination within wholesale networks should be required. Ideally, both supply sources and demand projections should be consistent across members and with the wholesale provider. Standardized reporting of new supply sources should

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<sup>81</sup> One useful example is the system used by the Metropolitan Water District of Southern California, which classifies local agency supply projects depending on how far along the projects are in the planning process: (1) "existing": projects that are producing water, (2) "under construction": projects that are under construction, (3) "full design and appropriated funds": projects that are designed and have secure funding for construction; (4) "advanced planning (EIR/EIS certified)": projects that have completed environmental impacts report and other approvals; (5) "feasibility": projects that have undergone feasibility studies but have not obtained permits; (6) "conceptual": projects in early planning phases. Metropolitan Water District of Southern California, Integrated Area Study 2007, report #1317, pp. 3-9, 3-10 (Dec. 2007). With projects cleanly identified in this way, it is possible to choose different split points for reliability and be consistent across related agencies. The Integrated Area Study includes the first three categories as the split point. Metropolitan's 2005 UWMP distinguishes between the "existing and committed" categories (Appendix 5) and the rest (Appendix 6). Metropolitan Water District of Southern California, The Regional Urban Water Management Plan, Los Angeles, Cal. (Nov. 2005).

help in this regard, but limits in authority could still make this difficult, for instance if retail and wholesale agencies cannot agree on methods for projecting demand. At a minimum, wholesale agencies need to provide a clear indication of whether they expect to be able to cover projected wholesale demands within their service areas, so that clear contingency plans can be developed in the event of shortfalls. Third, DWR should be authorized to go beyond the current accounting of whether the plans are complete, to an assessment of whether the numbers make sense in the aggregate. To make this possible, it will also be necessary to require more consistent reporting of key data in the plans. In particular, agencies should be required to report savings expected from conservation in a consistent manner, so that it is clear what is included in baseline demand projections.

New concerns about long-term water supply reliability in areas dependent on water conveyed through the Sacramento-San Joaquin Delta also raise questions about the ability of the decentralized water-management structure to effectively plan for growth. Export-water users are currently pursuing a long-term conveyance alternative to improve supply reliability, in a coordinated effort led by the California Natural Resources Agency.<sup>82</sup> But this solution is at best some fifteen years off and could well mean lower overall supplies from the Delta over the long term.<sup>83</sup> Modeling simulations show that urban areas dependent on Delta supplies can adapt to significant cutbacks – or even a complete cessation of exports – and accommodate continued population growth.<sup>84</sup> But such adaptations will require significant changes in the way supplies are managed, including more interconnections to allow agencies to share non-Delta supplies. Effective responses to major shifts in water supply reliability such as this will tax the limits of California's decentralized water-management system, requiring agencies to collaborate more, at a minimum, and possibly also consolidate, to deliver water-management solutions to support the existing population and the growth projected to come.

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<sup>82</sup> See Bay Delta Conservation Plan, [www.baydeltaconservationplan.org/BDCPPages/Partners.aspx](http://www.baydeltaconservationplan.org/BDCPPages/Partners.aspx).

<sup>83</sup> This is, for instance, a recommendation of the Governor's Blue Ribbon Task Force. See PHILIP ISENBERG ET AL., DELTA VISION BLUE RIBBON TASK FORCE, OUR VISION FOR THE CALIFORNIA DELTA 1, 12 (Jan. 29, 2008), available at [landscape.ced.berkeley.edu/~delta/DV%20general/Delta\\_Vision\\_Final.pdf](http://landscape.ced.berkeley.edu/~delta/DV%20general/Delta_Vision_Final.pdf).

<sup>84</sup> LUND ET AL., *supra* note 52, at 76-77.