10

Conclusions

This chapter assesses California's water future, based on today's conditions and on options being considered by California's water purveyors. The Department's Bulletin 160 series does not forecast a particular vision or preferred future (such as statewide use of xeriscape landscaping or favoring production of certain agricultural crops over others), but instead attempts to forecast the most probable future based on today's data, economic conditions, and public policies.

Although no forecast can be perfect, several key trends appear inevitable. California's population will increase dramatically by 2020. How growth is accommodated and the land use planning decisions made by cities and counties have important implications for future urban and agricultural water use. California's agricultural acreage is forecasted to decline slightly by 2020 (reflecting the State's increasing urbanization), as is its agricultural water use. California agriculture is still anticipated to lead the nation's agricultural production because of advantages such as climate and proximity to domestic and export markets. As the State's population expands, greater attention will be directed to preserving and restoring California ecosystems and to maintaining the natural resources which have attracted so many people to California.

The 1848 discovery of gold at Sutter's Mill on the American River led to California's statehood in 1850. California celebrates its sesquicentennial in 2000.

Miners in the Sierra, *painting by Charles Nahl and Frederick Wenderoth, 1851. Courtesy of Smithsonian Institution*

This chapter begins by reviewing water supply and demand information and the statewide applied water budget with existing facilities and programs presented in Chapter 6. Water management options identified as likely to be implemented in Chapters 6-9 are then tabulated and included in a state-

TABLE 10-1
California Water Budget with Existing Facilities and Programs (maf)

	1995		*2020*	
	Average	*Drought*	*Average*	*Drought*
Water Use				
Urban	8.8	9.0	12.0	12.4
Agricultural	33.8	34.5	31.5	32.3
Environmental	36.9	21.2	37.0	21.3
Total	**79.5**	**64.7**	**80.5**	**66.0**
Supplies				
Surface Water	65.1	43.5	65.0	43.4
Groundwater	12.5	15.8	12.7	16.0
Recycled and Desalted	0.3	0.3	0.4	0.4
Total	**77.9**	**59.6**	**78.1**	**59.8**
Shortage	**1.6**	**5.1**	**2.4**	**6.2**

wide applied water budget with options. The chapter ends with an evaluation of how actions planned by water purveyors statewide would affect forecasted water shortages, and a summary of key findings.

Future with Existing Facilities and Programs

Table 10-1 repeats the California water budget with existing facilities and programs shown in Chapter 6. (Regional water budgets with existing facilities and programs are shown in Appendix 6A and in the regional chapters.)

Water Supply

As described in Chapter 3, Bulletin 160-98 water budgets do not account for the State's entire water supply and use. Less than one-third of the State's precipitation is quantified in the water budgets. Precipitation provides California with nearly 200 maf of total water supply in average years. Of this renewable supply, about 65 percent is depleted through evaporation and transpiration by vegetation. This large volume of water (approximately 130 maf) is excluded from Bulletin 160 water supply and water use calculations. The remaining 35 percent stays in the State's hydrologic system as runoff.

Over 30 percent of the State's runoff is not explicitly designated for urban, agricultural, or environmental uses. Similar to precipitation depletions by vegetation, non-designated runoff is excluded from the Bulletin 160 water supply and water use calculations.

The State's remaining runoff is available as renewable water supply for urban, agricultural, and environmental uses in the Bulletin 160 water budgets.

About 65 percent of the precipitation that falls on California's land surface is consumed through evaporation and transpiration by vegetation. The remaining 35 percent comprises the water supply that may be managed or dedicated for urban, agricultural, and environmental purposes.

In addition to this supply, Bulletin 160 water budgets include a few supplies that are not generated by intrastate precipitation. These supplies include imports from the Colorado and Klamath Rivers and new supplies generated by water recycling and desalting.

The State's 1995-level average year applied water supply—from intrastate sources, interstate sources, and return flows—is about 78 maf. Even assuming a reduction in Colorado River supplies to California's 4.4 maf basic apportionment, average year statewide supply is projected to increase 0.2 maf by 2020 without additional water supply options. This projected increase in water supply is due mainly to higher CVP and SWP deliveries in response to higher 2020 level

USBR's Corning Pumping Plant diverts water from the Tehama-Colusa Canal into the Corning Canal, which supplies agricultural users in southern Tehama County. California's Central Valley provides about 80 percent of the State's agricultural production.

demands (for example, from CVP urban water users in the Central Valley and from SWP urban water users in the South Coast and South Lahontan Regions). Additional groundwater extraction and facilities now under construction will also provide new supplies. The State's 1995-level drought year supply is about 60 maf. Drought year supply is projected to increase slightly by 2020 without future water supply options, for the same reasons that average year supplies are expected to increase.

Bulletin 160-98 estimates statewide groundwater overdraft of about 1.5 maf/yr at a 1995 level of development. Increasing overdraft in the 1990s reverses the trend of basin recovery seen in the 1980s. Most increases are occurring in the San Joaquin and Tulare Lake Regions, due primarily to Delta export restrictions associated with SWRCB's Order WR 95-6, ESA requirements, and reductions in CVP supplies.

Water recycling is a small, yet growing, element of California's water supply. At a 1995 level of development, water recycling and desalting produce about 0.3 maf/yr of new water (reclaiming water that would otherwise flow to the ocean or to a salt sink), up significantly from the 1990 annual supply of new water. The California Water Code urges wastewater treatment agencies located in coastal areas to recycle as much of their treated effluent as possible, recognizing that this water supply would otherwise be lost to the State's hydrologic system. Greater recycled water production at existing treatment plants and additional production at plants now under construction are expected to increase new recycled and desalted supplies by nearly 30 percent to 0.4 maf/yr by 2020.

Water Demand

California's estimated demand for water at a 1995 level of development is about 80 maf in average years and 65 maf in drought years. California's water demand in 2020 is forecasted to reach 81 maf in average years and 66 maf in drought years. California's increasing population is a driving force behind increasing water demands.

California's population is forecasted to increase to 47.5 million people by 2020 (about 15 million people more than the 1995 base). Forty-six percent of the State's population increase is expected to occur in the South Coast Region. Even with extensive water conservation, urban water demand will increase by about 3.2 maf in average years. (Bulletin 160-98 assumes that all urban and agricultural water agencies will implement BMPs and EWMPs by 2020, regardless of whether they are cost-effective for water supply purposes.)

Irrigated crop acreage is expected to decline by 325,000 acres—from the 1995 level of 9.5 million acres to a 2020 level of 9.2 million acres. Reductions in forecasted irrigated acreage are due primarily to urban encroachment and to impaired drainage on lands in the western San Joaquin Valley. Increases in water use efficiency combined with reductions in irrigated agricultural acreage are expected to reduce average year water demand by about 2.3 maf by 2020. Shifts from lower to higher value crops are expected to continue, with an increase in permanent plantings such as orchards and vineyards. This trend would tend to harden agricultural demands associated with permanent plantings, making it less likely that this acreage would be temporarily fallowed during droughts.

Average and drought year water needs for environmental use are forecasted to increase only slightly by 2020. Drought year environmental water needs are considerably lower than average year environmental water needs, reflecting the variability of unimpaired flows in wild and scenic rivers. North Coast wild and scenic rivers constitute the greatest component of environmental water demands. CVPIA implementation, Bay-Delta requirements, new ESA restrictions, and FERC relicensing could significantly modify environmental demands within the Bulletin 160-98 planning period.

Water Shortages

The shortage shown in Table 10-1 for 1995 average water year conditions reflects the Bulletin's assumption that groundwater overdraft is not available as a supply. Groundwater overdraft represents a significant portion of the 2020 average water year shortage. Forecasted water shortages vary widely from region to region, as shown in Table 10-2 and presented graphically in Figure 10-1. For example, the North Coast and San Francisco Bay regions are not expected to experience future shortages during average water years but are expected to see shortages in drought years. Most of the State's remaining regions experience average year and drought year shortages now, and are forecasted to experience increased shortages in 2020. The largest future shortages are forecasted for the Tulare Lake and South Coast regions, areas that rely heavily on imported water supplies. These regions are also where some of the greatest increases in population are expected to occur.

As discussed in Chapter 6, there are uncertainties associated with the magnitude of forecasted shortages. Chapter 6 presented a range of potential shortage amounts for programs whose uncertainties could be quantified—CALFED and SWRCB Bay-Delta water right actions. Other uncertainties cannot be quantified now—impacts of future ESA listings and FERC relicensing. Furthermore, the evaluation of water management options performed for the Bulletin was based on the options' present affordability to local agencies. Circumstances that increase or decrease options' affordability will correspondingly affect forecasted shortages.

What is apparent is that Californians face water shortages now, and will face increasing shortages in the future. The shortages shown in Table 10-2 highlight the need for future water management actions to reduce the gap between forecasted supplies and demands. As Californians experienced during the most recent drought (especially in 1991 and 1992), drought year shortages are large. Urban residents faced cutbacks in supply and mandatory rationing, some small rural communities saw their wells go dry, agricultural lands were fallowed, and environmental water supplies were reduced. By 2020, without additional facilities and programs, these conditions will worsen.

Finding reliable water supplies for the more than 15 million new Californians will be a challenge for the State's water purveyors. Almost half of the State's forecasted 2020 population increase is expected to occur in the South Coast Region.

Water shortages have direct and indirect economic consequences. Direct consequences include costs to residential water users to replace landscaping lost during droughts, costs to businesses that experience water supply cutbacks, or costs to growers who fallow land because supplies are not available. Indirect conse-

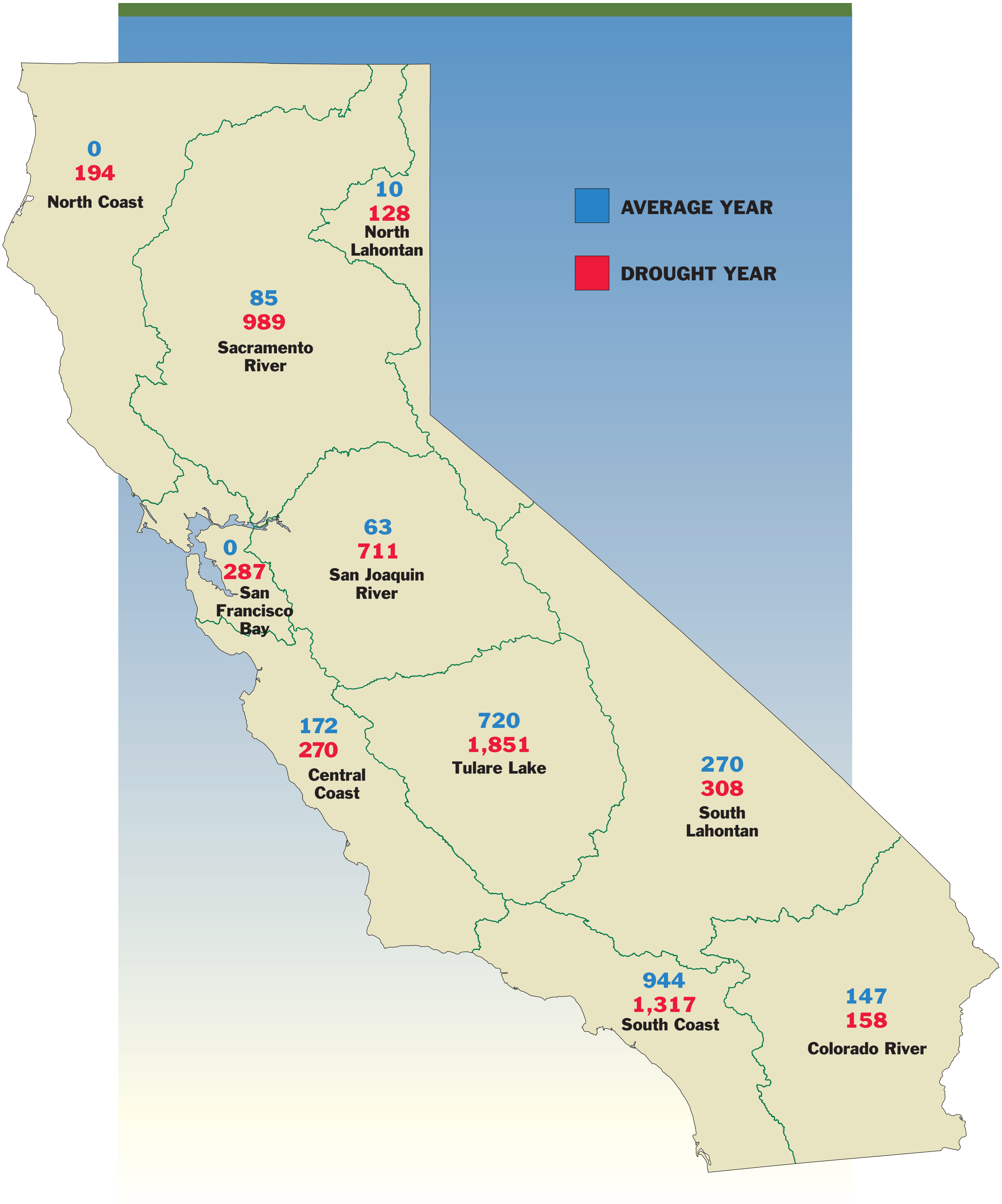
TABLE 10-2

Applied Water Shortages by Hydrologic Region (taf) with Existing Facilities and Programs

Region	*1995* *Average*	*1995* *Drought*	*2020* *Average*	*2020* *Drought*
North Coast	0	177	0	194
San Francisco Bay	0	349	0	287
Central Coast	214	282	172	270
South Coast	0	508	944	1,317
Sacramento River	111	867	85	989
San Joaquin River	239	788	63	711
Tulare Lake	870	1862	720	1,851
North Lahontan	0	128	10	128
South Lahontan	89	92	270	308
Colorado River	69	95	147	158
Total (rounded)	**1,590**	**5,150**	**2,410**	**6,210**

FIGURE 10-1

2020 Shortages by Hydrologic Region with Existing Facilities and Programs (taf)



The January 1997 flood disaster was the largest in the State's history. Flooding forced more than 120,000 people from their homes, and over 55,000 people were housed in temporary shelters. Nearly 300 square miles of agricultural land were flooded. Livestock and wildlife were trapped by the flooding.

quences include decisions by businesses and growers not to locate or to expand their operations in California, and reductions in the value of agricultural lands. Other consequences of shortages are less easily measured in economic terms—loss of recreational activities or impacts to environmental resources, for example.

Summary of Options Likely to be Implemented

The options summarized in this section represent water purveyors' strategies for meeting future needs. This information relies heavily on actions identified by local water agencies, which collectively provide about 70 percent of the State's developed water supply. As described earlier, water management options likely to be implemented were selected based on a ranking process that evaluated factors such as technical feasibility, cost, and environmental considerations. This process is most effective in hydrologic regions where local agencies have prepared plans for meeting future needs in their service areas. Affordability is a key factor for local agencies in deciding the extent to which they wish to invest in alternatives to improve their water service reliability. Water agencies must balance costs and quantity of supply (and sometimes quality of supply) based on their service area needs.

The Bulletin 160 series focuses on water supply. The statewide compilation of likely options has not been tailored to meet other water-related objectives such as flood control, hydropower generation, recreation, or nonpoint source pollution control. The evaluation process used to select likely options ranked the options based on their ability to provide multiple benefits, as described in Chapter 6. For example, one aspect of the relationship between water supply and flood control needs is illustrated in the sidebar on reservoir reoperation.

The results shown in Table 10-3 were obtained by adding statewide options identified as likely in Chapter 6 to regional options identified as likely in Chapters 7-9.

Options shown in Table 10-3 include demand re-

Reservoir Reoperation for Flood Control

The January 1997 floods demonstrated that Central Valley flood protection needs improvement. The 1997 *Final Report of the Governor's Flood Emergency Action Team* identified many actions that could be taken to increase valley flood protection, including better emergency preparedness, floodplain management actions, levee system improvements, construction of new floodways, temporary storage of floodwaters on wildlife refuges, reoperation or enlargement of existing reservoirs to increase flood storage, and construction of new reservoirs. The latter two actions have water supply implications. Reoperating existing reservoirs to provide greater flood control storage usually comes at the expense of water supply. Reoperation is particularly problematical in the San Joaquin River Basin, where water supplies are already limited. As more demands are placed on existing water supplies, reservoir reoperation will become increasingly difficult to implement. In contrast, enlarging reservoirs or constructing new reservoirs can provide both water supply and flood control benefits.

TABLE 10-3

Summary of Options Likely to be Implemented by 2020, by Option Type (taf)

Option Type	*Average*	*Drought*
Local Demand Reduction Options	**507**	**582**
Local Supply Augmentation Options		
Surface Water	110	297
Groundwater	24	539
Water Marketing	67	304
Recycled and Desalted	423	456
Statewide Supply Options		
CALFED Bay-Delta Program	100	175
SWP Improvements	117	155
Water Marketing (Drought Water Bank)	—	250
Multipurpose Reservoir Projects	710	370
Expected Reapplication	**141**	**433**
Total Options	**2,199**	**3,561**

duction beyond BMP and EWMP implementation included in Table 10-1. Future demand reduction options are options that would produce new water supply through reduction of depletions. For these optional water conservation measures to have been identified as likely, they must be competitive in cost with water supply augmentation options.

Local supply augmentation options comprise the largest potential new drought year source of water for California. (Local options include implementation of the draft CRB 4.4 Plan to reduce California's use of Colorado River water.) In Table 10-3 and in the water budgets, only water marketing options that result in a change of place of use of the water (from one hydrologic region to another), or a change in type of use (e.g., agricultural to urban) have been included. Considerably more marketing options have been described in earlier chapters than are shown in the water budgets, reflecting local agencies' plans to purchase future supplies from sources yet to be identified. Where the participants in a proposed transfer are known, the selling region's average year or drought year supply has been reduced in the water budgets. Presently, the only transfers with identified participants that are large enough to be visible in the water budgets are those associated with the draft CRB 4.4 Plan. Water agencies' plans to acquire water through marketing arrangements will depend on their ability to find sellers and on the level of competition for water purchases among water agencies and environmental restoration programs (such as CVPIA's AFRP or CALFED's ERP).

Possible statewide options include actions that could be taken by CALFED to develop new water supplies. The timing and extent of new water supplies that CALFED might provide are uncertain at the time of the Bulletin's printing. Bulletin 160-98 uses a placeholder analysis for new CALFED water supply development to illustrate the potential magnitude of new water supply the program might provide. The placeholder does not address specifics of which surface storage facilities might be selected, since this level of detail is not available. Water supply uncertainties associated with CALFED's selection of a draft preferred alternative were discussed in Chapter 6.

Other statewide options include specific projects to improve SWP water supply reliability, the State's drought water bank, and two multipurpose reservoirs. A third potential multipurpose reservoir option, an enlarged Shasta Lake, was recommended for further study because additional work is needed to quantify benefits and costs associated with different reservoir sizes.

The two multipurpose reservoir projects included as statewide options—Auburn Reservoir and enlarged Millerton Lake (Friant Dam)—were included to emphasize the interrelationship between water supply needs and the Central Valley's flood protection needs. Both reservoir sites offer significant flood protection benefits. Both projects have controversial aspects, and neither of them is inexpensive. However, they merit serious consideration. The lead time for planning and implementing any large reservoir project is long, and it would take almost to the Bulletin 160-98 2020 planning horizon for these projects to be constructed.

Implementing new water management options must be done in accordance with environmental protection requirements, including requirements for protection of species of special concern, such as this badger.

The potential future water management options summarized in this section are still being planned. Their implementation is subject to completion of environmental documents, permit acquisition, compliance with regulatory requirements such as those of ESA, and availability of funding. The permitting processes will address mitigating environmental impacts and resolving third-party impacts. If water management options are delayed or rendered infeasible as a result of these processes, or if their costs are increased to the point that the options are no longer affordable for the local sponsors, statewide shortages will be correspondingly affected.

Implementing Future Water Management Options

Table 10-4 was developed by combining the regional and statewide analyses of water management options with the water budget with existing facilities and programs (Table 10-1). Table 10-4 illustrates the effect these options would have on future shortages. (Appendix 10A shows regional water budgets with option implementation.) The table indicates that water management options now under consideration by water purveyors throughout the State will not reduce shortages to zero in 2020. The difference between av-

TABLE 10-4

California Water Budget with Options Likely to be Implemented (maf)

	1995		*2020*	
	Average	*Drought*	*Average*	*Drought*
Water Use				
Urban	8.8	9.0	11.8	12.1
Agricultural	33.8	34.5	31.3	32.1
Environmental	36.9	21.2	37.0	21.3
Total	**79.5**	**64.7**	**80.1**	**65.5**
Supplies				
Surface Water	65.1	43.5	66.4	45.4
Groundwater	12.5	15.8	12.7	16.5
Recycled and Desalted	0.3	0.3	0.8	0.9
Total	**77.9**	**59.6**	**79.9**	**62.8**
Shortage	**1.6**	**5.1**	**0.2**	**2.7**

TABLE 10-5

Water Shortages by Hydrologic Region With Likely Options (taf)

	1995		2020	
Region	*Average*	*Drought*	*Average*	*Drought*
North Coast	0	177	0	176
San Francisco Bay	0	349	0	0
Central Coast	214	282	0	100
South Coast	0	508	0	0
Sacramento River	111	867	0	722
San Joaquin River	239	788	0	658
Tulare Lake	870	1,862	202	868
North Lahontan	0	128	10	128
South Lahontan	89	92	0	0
Colorado River	69	95	0	0
Total (rounded)	**1,590**	**5,150**	**210**	**2,650**

erage year and drought year water shortages is significant. Water purveyors generally consider shortages in average years as basic deficiencies that should be corrected through long-term demand reduction or supply augmentation measures. Shortages in drought years may be managed by such long-term measures in combination with short-term actions used only during droughts. Short-term measures could include purchases from the State's drought water bank, urban water rationing, or agricultural land fallowing. Agencies may evaluate the marginal costs of developing new supplies and conclude that the cost of their development exceeds that of shortages to their service areas, or exceeds the cost of implementing contingency measures such as transfers or rationing. As water agencies implement increasing amounts of water conservation in the future (especially plumbing fixture changes), there will be a correspondingly lessened ability to implement short-term drought response actions such as rationing. Demand hardening will influence agencies' decisions about their future mix of water management actions.

Ability to pay is another consideration. Large urban water agencies frequently set high water service reliability goals and are able to finance actions necessary to meet the goals. Agencies supplying small rural communities may not be able to afford expensive projects. Small communities have limited populations over which to spread capital costs and may have difficulty obtaining financing. If local groundwater resources are inadequate to support expected growth, these communities may not be able to afford projects such as pipelines to bring in new surface water supplies. Small rural communities that are geographically isolated from population centers cannot readily interconnect with other water systems.

Agricultural water agencies may be less able to pay for capital improvements than urban water agencies. Much of the State's earliest large-scale water development was for agriculture, and irrigation works were constructed at a time when water development was inexpensive by present standards. Agricultural users today may not be able to compete with urban users for development of new supplies. Some agricultural water users have historically been willing to accept lower water supply reliability in return for less expensive water supplies. It may be less expensive for some agricultural users to idle land in drought years rather than to incur capital costs of new water supply development. This can be particularly true for regions faced with production constraints such as short growing seasons or lower quality lands — areas where the dominant water use may be irrigated pasture. In areas such as the North Lahontan Region, for example, local agencies generally do not have plans for new programs or facilities to reduce agricultural water shortages in drought years. Table 10-5 shows forecasted shortages by hydrologic region to illustrate the effects of option implementation on a regional basis. The same information is presented graphically in Figure 10-2.

Local agencies that expect to have increased future demands generally do more water supply planning than do agencies whose demands remain relatively level. Most agricultural water agencies are not planning for greater future demands, although some agencies are examining ways to improve reliability of their existing supplies. Cost considerations limit the types of options available to many agricultural users. The agricultural sector has thus developed fewer options that could be evaluated in statewide water supply planning. Many

FIGURE 10-2

2020 Shortages by Hydrologic Region with Likely Options (taf)

options have been generated from planning performed by urban agencies, reflecting Urban Water Management Planning Act requirements that urban water suppliers with 3,000 or more connections, or that deliver over 3 taf of water per year, prepare plans showing how they will meet service area needs.

Geography plays a role in the feasibility of implementing different types of options, and not solely with respect to the availability of surface water and groundwater supplies. Water users in the Central Valley, Bay Area, and Southern California having access to major regional conveyance facilities have greater opportunities to rely on water marketing arrangements and conjunctive use options than do water users isolated from the State's main water infrastructure.

Bulletin 160-98 Findings

Bulletin 160-98 forecasts water shortages in California by 2020, as did the previous water plan update. The water management options identified in the Bulletin as likely to be implemented by 2020 would reduce, but not completely eliminate future shortages. Water agencies faced with meeting future needs must determine how those needs can be met within the statutory and regulatory framework affecting water use decisions, including how the needs can be met in a manner equitable to existing water users. Land use planning decisions made by cities and counties—locations where future growth will or will not be allowed, housing densities, preservation goals for open space or agricultural reserves—will have a significant influence on California's future water demands. Good coordination among local land use planning agencies and water agencies, as well as among water agencies themselves at a regional level, will facilitate finding solutions to meeting future needs.

Bulletin 160-98 makes no specific recommendations regarding how California water purveyors should meet the needs of their service areas. It is the water purveyors themselves who must make these decisions. The purpose of Bulletin 160-98 is to forecast the future based on today's conditions. Clearly, different agencies and individuals have different perspectives about how the future should be shaped. The CALFED discussions, for example, illustrate conflicting values among individuals and agencies.

There is not one magic bullet for meeting California's future water needs—not new reservoirs, not new conveyance facilities, not more groundwater extraction, not more water conservation, not more water recycling. Each of these options has its place. The most frequently used methods of providing new water supplies have changed with the times, reflecting changing circumstances. Much of California's early water development was achieved by constructing reservoirs and diverting surface water. Advances in technology, in the form of deep well turbine pumps, allowed substantial groundwater development. More recent improvements in water treatment technology have made water recycling and desalting feasible options. Today, water purveyors have an array of water management options available to meet future water supply reliability needs. The magnitude of potential shortages, especially drought year shortages, demonstrates the urgency of taking action. The do-nothing alternative is not an alternative that will meet the needs of 47.5 million Californians in 2020.

California water agencies have made great strides in water conservation since the 1976-77 drought. Bulletin 160-98 forecasts substantial demand reduction from implementing presently identified urban BMPs and agricultural EWMPs, and assumes a more rigorous level of implementation than water agencies are now obligated to perform. Presently, less than half of California's urban population is served by retailers that have signed the urban MOU for water conservation measures. Less than one-third of California's agricultural lands are served by agencies that have signed the corresponding agricultural MOU. Bulletin 160-98 assumes that all water purveyors statewide will implement BMPs and EWMPs by 2020, even if the actions are not cost-effective from a water supply perspective. Water conservation offers multipurpose benefits such as reduced urban water treatment costs and potential reduction of fish entrainment at diversion structures. The Bulletin also identifies as likely additional demand reduction measures that would create new water and would be cost-competitive with supply augmentation options. These optional demand reductions are almost as large as the average year water supply augmentation options planned by local agencies.

California water agencies have also made great strides in water recycling. By 2020, total recycling could potentially be almost 1.4 maf, which would exceed the goal expressed in Section 13577 of the Water Code that total recycling statewide be 1 maf by 2010. (The potential 2020 total recycling of 1.4 maf would be equivalent to about 2 percent of the State's 2020 water supply.) Water recycling offers multipurpose benefits, such as reduction of treatment plant discharges to waterbodies. Cost is a limiting factor in implementing recycling projects. When economic considerations are taken into account, the potential new water supply (water new to the State's hydrologic system) from recycling is forecasted to be about 0.8 maf.

Clearly, conservation and recycling alone are not sufficient to meet California's future needs. Bulletin 160-98 has included all of the conservation and recycling measures likely to be implemented by 2020. Adding supply augmentation options identified by California's water purveyors still leaves a shortfall in meeting forecasted demands. Review of local agencies' likely supply augmentation options shows that relatively few larger-scale or regional programs are in active planning, especially among small and mid-size water agencies. This outcome reflects local agencies' concerns about perceived implementability constraints associated with larger-scale options, and their affordability.

In the interests of maintaining California's vibrant economy, it is important that the State of California take an active role in assisting water agencies in meeting their future needs. New storage facilities are an important part of the mix of options needed to meet California's future needs. Just as water conservation and recycling provide multiple benefits, storage facilities offer flood control, power generation, and recreation in addition to water supply benefits. The devastating January 1997 floods in the Central Valley emphasized the need for increased attention to flood control. Apart from CALFED's investigation of storage alternatives, little planning is currently being done for storage projects that would meet regional or statewide needs. It is important for small and mid-size water agencies who could not develop such facilities on their own to have access to participation in regional projects. The more diversified water agencies' sources of supply are, the better their odds of improved water supply reliability.

An appropriate State role would be for the Department to take the lead in performing feasibility studies of potential storage projects—not on behalf of the SWP, but on behalf of all potentially interested water agencies. State funding support is needed to identify likely projects, so that local agencies may determine how those projects might benefit their service areas. In concept, the Department could use State funding to complete project feasibility studies, permitting, and environmental documentation for likely new storage facilities, removing uncertainties that would prevent smaller water agencies from funding planning studies themselves. This concept is not new. Historically, Department investigations into the State's water resources (for example, Bulletin 3, the original *California Water Plan*) formulated projects that were later built by local agencies.

Agencies wishing to participate in projects shown to be feasible in Department studies would repay their share of the State planning costs as a condition of participation in a project. Feasible projects would likely be constructed by a consortium of local agencies acting through a joint powers agreement or other contractual mechanism. The water users would be responsible for construction costs.

Meeting California's future needs will require cooperation among all levels of government—federal, State, and local. Likewise, all three of California's water-using sectors—agricultural, environmental, and urban—must work together to recognize each others' legitimate needs and to seek solutions to meeting the State's future water shortages. When the Bay-Delta Accord was signed in 1994, it was hailed as a truce in one of the State's longstanding water wars. The Accord, and the efforts by California agencies to negotiate a resolution to interstate and intrastate Colorado River water issues, represent a new spirit of fostering cooperation and consensus rather than competition and conflict. Such an approach will be increasingly necessary, given the magnitude of the water shortages facing California. Mutual accommodation of each others' needs is especially important in drought years, when water purveyors face the greatest water supply challenges. With continued efforts to prepare for the future, California can have safe and reliable water supplies for urban areas, adequate long-term water supplies to maintain the State's agricultural economy, and restoration and protection of fish and wildlife habitat.