

FINAL
2010 URBAN WATER MANAGEMENT PLAN UPDATE
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Prepared for:
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Section 3: System Demands

3.1 UWMP Requirements

This section will include the following:

- Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data. (CWC, 10608.20(e))
- *Wholesalers*: Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers*: Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009. (CWC, 10608.36, 10608.26(a))
- Report progress in meeting urban water use targets using the standardized form. (CWC, 10608.40)
- Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture. [past = 2005, present = 2010, and projected to be 2015, 2020, 2025, and 2030] (CWC, 10631(e)(1))
- Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types. [Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030] (CWC, 10631(k))
- Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier. (CWC, 10631.1(a))

3.2 Customer Connections

Currently, the District serves water to over 3,300 single family and multi-family accounts, 330 commercial, industrial, and government/institutional accounts, and over 400 agricultural accounts. See Tables 3-1 and 3-2 for details of customer connections for 2005 to 2010. All of the District's customers are metered accounts. The majority of the growth in the number of connections through 2035 will be in the residential sector (see Tables 3-3 to 3-7). All future new accounts will be metered and billed via volume-based rates.

3.3 Current Demands

Water demands for 2005 and 2010 are presented in Tables 3-1 and 3-2, respectively. According to District Water Division staff, total water sold in 2010 was 3,718 acre-feet (AF), while water sold in 2005 was 3,962 AF. The 2010 demands were over 244 AF (6.2 percent) less than the 2005 demands.

Water demand is a function of several factors. Geographic location, topography, land use, demography, and water system characteristics (i.e., system pressures, water quality and metering of connections) all influence water usage. Water demand characteristics within the District will therefore differ from water demands of other areas in California according to these factors of influence.

Reasons for differences in water demand between local communities can be numerous and complex. Differences in per capita demand are primarily attributable to variations in outdoor demands (Vickers, 2000). Other factors may include, but are not limited to, the following: parcel size, housing density, house age, condition of plumbing, use of water conservation fixtures, conservation practices, land use, climate, water rates, local ordinances, record keeping, statistical anomalies, etc.

**TABLE 3-1
NUMBER OF CONNECTIONS AND WATER DEMANDS 2005**

| Water Use Sector | Metered | | Unmetered | | Total Volume ⁽¹⁾ |
|----------------------------|--------------|--------------|------------|------------|-----------------------------|
| | # Accounts | Volume (1) | # Accounts | Volume (1) | |
| Single Family | 2,995 | 1,016 | 0 | 0 | 1,016 |
| Multi Family | 308 | 500 | 0 | 0 | 500 |
| Commercial | 216 | 368 | 0 | 0 | 368 |
| Industrial | 64 | 116 | 0 | 0 | 116 |
| Institutional/governmental | 56 | 121 | 0 | 0 | 121 |
| Landscape | 0 | 0 | 0 | 0 | 0 |
| Agricultural | 424 | 1,840 | 0 | 0 | 1,840 |
| Other | 111 | 0 | 0 | 0 | 0 |
| Total | 4,174 | 3,962 | 0 | 0 | 3,962 |

Notes:

Source: CVWD.

(1) All values rounded.

**TABLE 3-2
NUMBER OF CONNECTIONS AND WATER DEMANDS 2010**

| Water Use Sector | Metered | | Unmetered | | Total Volume ⁽¹⁾ |
|-----------------------------|--------------|--------------|-----------|------------|-----------------------------|
| | # Accounts | Volume (1) | | Volume (1) | |
| Single Family | 3,078 | 885 | 0 | 0 | 885 |
| Multi Family | 314 | 445 | 0 | 0 | 445 |
| Commercial | 211 | 339 | 0 | 0 | 339 |
| Industrial | 57 | 68 | 0 | 0 | 68 |
| Institutional/governmental | 35 | 90 | 0 | 0 | 90 |
| Landscape | 53 | 70 | 0 | 0 | 103 |
| Agricultural | 398 | 1,582 | 0 | 0 | 1,582 |
| Other (non USBR Ag) | 15 | 23 | 0 | 0 | 23 |
| Water Losses ⁽²⁾ | 0 | 0 | 0 | 183 | 183 |
| Total | 4,161 | 3,502 | 0 | 183 | 3,718 |

Notes:

Source: CVWD.

(1) All values rounded.

(2) Estimated based on District's total production and purchases compared to metered sales.

3.3.1 Residential Demands

In 2010, single-family residential demands accounted for nearly 29 percent (885 AF) of the urban water demand, while multi-family residential customers accounted for 12 percent (445 AF) of the urban water demands. See Table 3-2 for additional details. These values are consistent with the residential demands within the District for 2005.

3.3.2 Commercial Demands

Commercial customers accounted for approximately 9.1 percent (339 AF) of water demands in 2010. See Table 3-2 for additional details.

3.3.3 Industrial and Institutional Demands

Industrial and institutional customers accounted for over 4 percent (158 AF) of water demands in 2010. See Table 3-2 for additional details.

3.3.4 Agricultural Demands

Agricultural customers accounted for over 43 percent (1,605 AF) of water demands in 2010. See Table 3-2 for additional details. In 2010, agriculture accounted for approximately 65 percent of total water demands including District sources and private pumping.

3.3.5 Water Losses

In addition to the traditional demand sources, another component that significantly impacts the District's water resources is water system losses (also known as "unaccounted-for water"). This component is typically defined as the difference between water production and water sales. These water losses can be due to authorized activities such as fire fighting and main flushing. In addition, water losses may be due to unauthorized sources such as leakage, illegal connections, theft, and inaccurate flow meters. Water loss within the District was approximately 5 percent during 2010 (see Table 3-2). It is anticipated that the District will have approximately 5 percent water loss for the period 2010 to 2035.

This average unaccounted-for water value is slightly lower than most water agencies. Estimates from USEPA Region 9, indicate an average of 6.4 percent for total water loss. California Department of Water Resources, Office of Water Conservation uses 9.5 percent for long-range planning of municipal water production. The District may consider additional measures to reduce water loss within the distribution system. These measures may include additional water main replacement and meter replacement, and meter exchange.

3.3.6 Demands for-Low Income Households

One of the new requirements of the UWMP Act is the evaluation of demands for low income households. (CWC, 10631.1) The District has provided sufficient water to all customers to meet customer demands including water necessary for lower income single-family households and multi-family households.

3.4 Future Water Demands

Projected water use estimates are based on the small increases to the District's customer base. Section 2.4.1 summarized anticipated population growth within the District. Population growth within the District is anticipated to be 4,100 persons over the next 25 years (approximately 0.5 percent per year). For the period 2015 to 2035, the District anticipates a slight increase in residential demands of approximately 0.5 percent per year, an increase in commercial demands of less than 1 percent per year, and no change in annual agricultural demands. Potential development within the District is summarized in Table 2-5 (Section 2) including additional water demands for each water use sector through 2035.

Projected water demands for each water use sector in 5-year increments through 2035 are summarized in Tables 3-3 to 3-7. Total estimated water demands will be approximately 4,268 AFY in 2015, 4,212 AFY in 2020, 4,268 AF in 2025, 4,325 AF in 2030, and 4,382 AF in 2035.

3.4.1 Residential Demands

Future single-family and multiple-family residential demands will account for approximately 35 percent of the urban water demand. This amount will be consistent with the 2010 residential demands within the District. See Tables 3-3 to 3-7 for details of future water demands through 2035.

3.4.2 Commercial Demands

Future commercial demands will account for approximately 9 percent of the urban water demand. This amount will be consistent with the 2010 commercial demands within the District. See Tables 3-3 to 3-7 for details of future water demands through 2035.

3.4.3 Industrial and Institutional Demands

Future industrial and institutional demands will account for approximately 4 percent of the urban water demand. This amount will be consistent with the 2010 industrial and institutional demands within the District. See Tables 3-3 to 3-7 for details of future water demands through 2035.

3.4.4 Agricultural Demands

Future agricultural demands will account for approximately 45 percent of the District water demand (and approximately 65 percent of total water demands within the District including District sources and private pumping). This amount will be consistent with the 2010 agricultural demands within the District. See Tables 3-3 to 3-7 for details of future water demands through 2035.

**TABLE 3-3
NUMBER OF CONNECTIONS AND WATER DEMANDS 2015**

| Water Use Sector | Metered | | Unmetered | | Total Volume ^(1,2) |
|-----------------------------------|--------------|--------------|------------|--------------|-------------------------------|
| | # Accounts | Volume (1,2) | # Accounts | Volume (1,2) | |
| Single Family | 3,149 | 1,002 | 0 | 0 | 1,002 |
| Multi Family | 311 | 477 | 0 | 0 | 477 |
| Commercial | 215 | 373 | 0 | 0 | 373 |
| Industrial | 57 | 75 | 0 | 0 | 75 |
| Institutional/governmental | 535 | 104 | 0 | 0 | 104 |
| Landscape | 54 | 105 | 0 | 0 | 105 |
| Agricultural | 398 | 1,904 | 0 | 0 | 1,904 |
| Other (non USBR Ag) | 15 | 24 | 0 | 0 | 24 |
| Water Losses⁽³⁾ | 0 | 0 | 0 | 203 | 203 |
| Total | 4,174 | 4,064 | 0 | 203 | 4,268 |

Notes: Source - CVWD.

(1) All values rounded.

(2) Does not include potential reduction of demand of 10 percent for period 2015-2035 utilizing water conservation Demand Management Measures.

(3) Estimated based on District's total production and purchases compared to metered sales.

**TABLE 3-4
NUMBER OF CONNECTIONS AND WATER DEMANDS 2020**

| Water Use Sector | Metered | | Unmetered | | Total Volume ^(1,2) |
|-----------------------------|--------------|--------------|------------|--------------|-------------------------------|
| | # Accounts | Volume (1,2) | # Accounts | Volume (1,2) | |
| Single Family | 3,221 | 966 | 0 | 0 | 966 |
| Multi Family | 308 | 473 | 0 | 0 | 473 |
| Commercial | 219 | 365 | 0 | 0 | 365 |
| Industrial | 57 | 73 | 0 | 0 | 73 |
| Institutional/governmental | 35 | 99 | 0 | 0 | 99 |
| Landscape | 54 | 107 | 0 | 0 | 107 |
| Agricultural | 398 | 1,903 | 0 | 0 | 1,903 |
| Other (non USBR Ag) | 16 | 25 | 0 | 0 | 25 |
| Water Losses ⁽³⁾ | 0 | 0 | 0 | 201 | 201 |
| Total | 4,307 | 4,012 | 0 | 201 | 4,212 |

Notes: Source - CVWD.

(1) All values rounded.

(2) Does not include potential reduction of demand of 10 percent for period 2015-2035 utilizing water conservation Demand Management Measures.

(3) Estimated based on District's total production and purchases compared to metered sales.

**TABLE 3-5
NUMBER OF CONNECTIONS AND WATER DEMANDS 2025**

| Water Use Sector | Metered | | Unmetered | | Total Volume ^(1,2) |
|-----------------------------|--------------|--------------|------------|--------------|-------------------------------|
| | # Accounts | Volume (1,2) | # Accounts | Volume (1,2) | |
| Single Family | 3,295 | 991 | 0 | 0 | 991 |
| Multi Family | 305 | 485 | 0 | 0 | 485 |
| Commercial | 223 | 374 | 0 | 0 | 374 |
| Industrial | 57 | 75 | 0 | 0 | 75 |
| Institutional/governmental | 35 | 102 | 0 | 0 | 102 |
| Landscape | 55 | 110 | 0 | 0 | 110 |
| Agricultural | 398 | 1,902 | 0 | 0 | 1,902 |
| Other (non USBR Ag) | 16 | 26 | 0 | 0 | 26 |
| Water Losses ⁽³⁾ | 0 | 0 | 0 | 203 | 203 |
| Total | 4,383 | 4,065 | 0 | 203 | 4,268 |

Notes: Source - CVWD.

(1) All values rounded.

(2) Does not include potential reduction of demand of 10 percent for period 2015-2035 utilizing water conservation Demand Management Measures.

(3) Estimated based on District's total production and purchases compared to metered sales.

**TABLE 3-6
NUMBER OF CONNECTIONS AND WATER DEMANDS 2030**

| Water Use Sector | Metered | | Unmetered | | Total Volume ^(1,2) |
|-----------------------------------|--------------|--------------|------------|--------------|-------------------------------|
| | # Accounts | Volume (1,2) | # Accounts | Volume (1,2) | |
| Single Family | 3,371 | 1,016 | 0 | 0 | 1,016 |
| Multi Family | 302 | 497 | 0 | 0 | 497 |
| Commercial | 227 | 384 | 0 | 0 | 384 |
| Industrial | 57 | 77 | 0 | 0 | 77 |
| Institutional/governmental | 35 | 105 | 0 | 0 | 105 |
| Landscape | 55 | 113 | 0 | 0 | 113 |
| Agricultural | 398 | 1,900 | 0 | 0 | 1,900 |
| Other (non USBR Ag) | 16 | 28 | 0 | 0 | 28 |
| Water Losses⁽³⁾ | 0 | 0 | 0 | 206 | 206 |
| Total | 4,460 | 4,119 | 0 | 206 | 4,325 |

Notes: Source - CVWD.

(1) All values rounded.

(2) Does not include potential reduction of demand of 10 percent for period 2015-2035 utilizing water conservation Demand Management Measures.

(3) Estimated based on District's total production and purchases compared to metered sales.

**TABLE 3-7
NUMBER OF CONNECTIONS AND WATER DEMANDS 2035**

| Water Use Sector | Metered | | Unmetered | | Total Volume ^(1,2) |
|-----------------------------------|--------------|--------------|------------|--------------|-------------------------------|
| | # Accounts | Volume (1,2) | # Accounts | Volume (1,2) | |
| Single Family | 3,449 | 1,041 | 0 | 0 | 1,041 |
| Multi Family | 299 | 510 | 0 | 0 | 510 |
| Commercial | 231 | 393 | 0 | 0 | 393 |
| Industrial | 57 | 79 | 0 | 0 | 79 |
| Institutional/governmental | 35 | 107 | 0 | 0 | 107 |
| Landscape | 55 | 115 | 0 | 0 | 115 |
| Agricultural | 398 | 1,899 | 0 | 0 | 1,899 |
| Other (non USBR Ag) | 16 | 29 | 0 | 0 | 29 |
| Water Losses⁽³⁾ | 0 | 0 | 0 | 209 | 209 |
| Total | 4,630 | 4,513 | 0 | 209 | 4,382 |

Notes:

Source: CVWD.

(1) All values rounded.

(2) Does not include potential reduction of demand of 10 percent for period 2015-2035 utilizing water conservation Demand Management Measures.

(3) Estimated based on District's total production and purchases compared to metered sales.

3.4.5 Future Demands for-Low Income Households

One of the new requirements of the UWMP Act is the evaluation of demands for low income households. (CWC, 10631.1) There are approximately 122 of new low income single-family and multiple-family housing units projected to be constructed in the City of Carpinteria through 2015 (City, 2011). This low income housing will generate approximately 28 AF per year of additional water demand (based on 0.23 AF per household per year) when constructed. The City has sufficient resources to accommodate this increase in water demand.

3.5 Water Conservation Act of 2009

In February 2008, Governor Arnold Schwarzenegger introduced a seven-part comprehensive plan for improving the Sacramento-San Joaquin Delta. A key component of this plan was a goal to achieve a 20 percent reduction in per capita water use statewide by the year 2020 (also known as the 20x2020 target). The Governor's inclusion of water conservation in the Delta plan emphasizes the importance of water conservation in reducing demand on the Delta and in reducing demand on the overall California water supply. In response to Schwarzenegger's call for statewide per capita savings, the DWR prepared a 20x2020 Water Conservation Plan (DWR, 2010). The Water Conservation Plan developed estimates of statewide and regional baseline per capita water use and outlined recommendations to the Governor on how a statewide per capita water use reduction plan could be implemented.

In November 2009, SBX7-7, The Water Conservation Act of 2009, was signed into law as part of a comprehensive water legislation package. The Water Conservation Act addresses both urban and agricultural water conservation. The urban provisions reflect the approach taken in the 20x2020 Water Conservation Plan. The legislation sets a goal of achieving a 20 percent statewide reduction in urban per capita water use and directs urban retail water suppliers to set 2020 urban water use targets. This new legislation requires urban retail water suppliers to summarize the calculation of this water use target in the UWMP.

3.5.1 Baseline Water Use

Water suppliers must define a 10-year base period (or 15-year) (also known as baseline) for water use that will be used to develop their target levels of per capita water use. Water suppliers must also calculate water use for a 5-year baseline period, and use that value to determine a minimum required reduction in water use by 2020. The longer baseline period applies to a water supplier that meets at least 10 percent of its 2008 measured-retail water demand through recycled water. Methodology 3: Base Daily Per Capita Water Use describes the calculations.

3.5.2 Water Use Targets

An urban retail water supplier, as defined above, must set a 2020 water use target and a 2015 interim target using one of four methods. Three of these are defined in Section 10608.20(a)(1), with the fourth developed by DWR by the end of 2010. The 2020 water use target will be calculated using one of the following four methods:

- Method 1: Eighty percent of the water supplier's baseline per capita water use
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscaped area water use; and CII uses
- Method 3: Ninety-five percent of the applicable state hydrologic region target as stated in the 20x2020 Water Conservation Plan
- Method 4: Urban water use target is calculated by estimating the baseline per capita use and subtracting total water savings (savings from metering, indoor residential, commercial, industrial, institutional, landscape, and water loss).

The target may need to be adjusted further to achieve a minimum reduction in water use regardless of the target method (this is explained in Methodology 3). The Water Code directs that water suppliers must compare their actual water use in 2020 with their calculated targets to assess compliance. In addition, water suppliers will report interim compliance in 2015 as compared to an interim target (generally halfway between the baseline water use and the 2020 target level). The years 2015 and 2020 are referred to in the methodologies as compliance years. All baseline, target, and compliance-year water use estimates must be calculated and reported in gallons per capita per day (GPCD). Water suppliers have some flexibility in setting and revising water use targets:

- A water supplier may set its water use target and comply individually, or as part of a regional alliance (see Methodology 9: Regional Compliance).
- A water supplier may revise its water use target in its 2015 or 2020 urban water management plan or in an amended plan.
- A water supplier may change the method it uses to set its water use target and report it in a 2010 amended plan or in its 2015 urban water management plan. Urban water suppliers are not permitted to change target methods after they have submitted their 2015 UWMP.

3.5.3 Data Reporting

DWR will collect data pertaining to urban water use targets through three documents: (1) through the individual supplier UWMP; (2) through the regional UWMP; and (3) through regional alliance reports.

Water suppliers that comply individually must report the following data in their UWMP (applicable UWMP dates are included in parentheses).

- Baseline Gross Water Use and Service Area Population (2010, 2015, 2020)
- Individual 2020 Urban Water Use Target (2010, 2015, 2020) and Interim 2015 Urban Water Use Target (2010)
- Compliance Year Gross Water Use (2015 and 2020) and Service Area Population (2010, 2015, 2020)
- Adjustments to Gross Water Use in the compliance year (2015, 2020)

- Water suppliers who choose Target Method 2 also must provide Landscaped Area Water Use and Baseline CII Water Use data (2010, 2015, and 2020).
- Water Suppliers who choose Target Method 4 must provide the components of calculation as required by Target Method 4.

3.5.4 District Compliance

Compliance with the California Water Conservation Act of 2009 includes the following:

- Gross water use 10 year average (2001-2010) of 2,214 acre-feet
- Population 10 year average (2001-2010) of 15,700
- Baseline per capita use 10 year average (2001-2010) of 126 gpcd
- Hydrologic region (Central Coast) target of 123 gpcd
- Hydrologic region (Central Coast) 95 percent target of 117 gpcd
- District interim 2015 water use target of 124 gpcd
- District 2020 water use target of 117 gpcd.

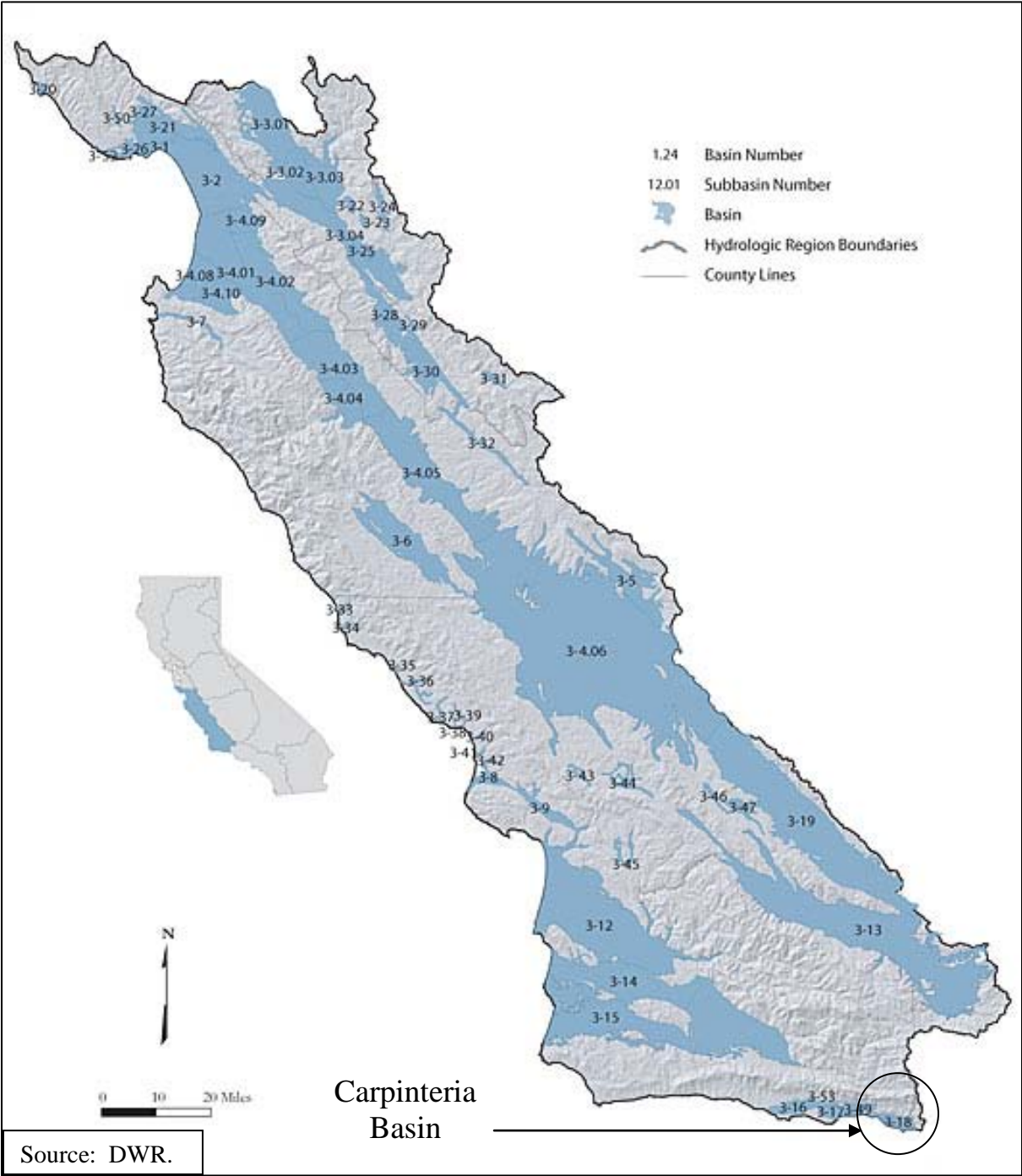


FIGURE 3-1
CENTRAL COAST HYDROLOGIC BASIN