

4.14 PUBLIC SERVICES, UTILITIES, AND ENERGY

This section evaluates the potential impacts to public services, utilities, and energy associated with implementation of the 2050 RTP/SCS. The information presented was compiled from multiple sources, including the 2050 RTP/SCS, the San Diego County General Plan EIR, and other sources identified throughout the section.

4.14.1 EXISTING CONDITIONS

4.14.1.1 Public Services

Fire protection, police protection, schools, and libraries are a vital component in maintaining the high quality of life throughout the San Diego region. San Diego region cities, the County of San Diego, special districts, school districts, colleges and universities, and energy providers are responsible for providing public services, utilities, and energy to the San Diego region and develop their own standards and processes for determining if the existing level of service is adequate and are individually responsible for making decisions to build new facilities or expand existing facilities. Service providers are also responsible for identifying and allocating funding necessary to provide services and facilities.

Fire Protection

Each of the 18 cities in the San Diego region operates their own fire department that is responsible for providing fire suppression and fire prevention services within their respective city limits. Unincorporated areas within the jurisdiction of the County of San Diego are provided fire protection services through 14 autonomous Fire Protection Districts (FPDs), seven County Service Areas (CSAs), or five Municipal Water Districts (MWDs). The various FPDs, CSAs, and MWDs are either directly responsible for providing fire protection services or provide fire protection services under contract with another service provider (LAFCO 2008–2009). The San Diego County Regional Fire Authority also provides administrative and operational support to six privately funded volunteer fire departments in the rural areas of the county (LAFCO 2007).

Some of the region's fire protection service providers have entered into agreements for joint powers agencies to provide coordinated fire protection services, dispatch services, or centralized management. North County Dispatch Joint Powers Authority (JPA) and Heartland Fire and Rescue are established coordinating agencies that assist local fire departments to provide fire protection and emergency services.

The California Department of Forestry and Fire Protection (CAL FIRE) is the primary provider of fire protection services for State Responsibility Areas and, under contract, for many county FPDs, CSAs, and MWDs. In addition, CAL FIRE jointly operates four conservation camps in conjunction with the California Department of Corrections and Rehabilitation (CDCR). CAL FIRE also operates an air attack station and two helitack bases that provide aerial fire suppression if needed. CAL FIRE is responsible for providing dispatch services to many fire protection service providers located in the eastern part of the region (CAL FIRE 2009).

A number of federal agencies are responsible for providing fire protection services to federal responsibility areas. The United States Forest Service is responsible for fire protection in Cleveland National Forest and the Department of Defense provides fire protection at military facilities (CAL FIRE 2011). The Port of San Diego's Harbor Police department is also cross-trained as marine fire fighters. Tribal governments in the San Diego region operate fire departments that are responsible for fire protection on sovereign land. Automatic and mutual aid agreements exist between agencies (e.g., local-local, local-state, local-federal, state-federal, etc.) to facilitate an enhanced and coordinated response to

fires and emergencies. Table 4.14-1 identifies agencies responsible for fire protection in the region's cities. Table 4.14-2 identifies agencies responsible for providing fire protection in the unincorporated areas of San Diego County.

**Table 4.14-1
Fire Service Providers in the 18 Cities in the San Diego Region**

| Cities | Fire Service Provider | Number of Stations | Dispatch |
|------------------------|----------------------------------|--------------------|--------------------|
| City of Carlsbad | Carlsbad Fire Department | 6 | North County JPA |
| City of Chula Vista | Chula Vista Fire Department | 9 | City of San Diego |
| City of Coronado | Coronado Fire Department | 2 | Heartland Dispatch |
| City of Del Mar | Del Mar Fire Department | 1 | North County JPA |
| City of El Cajon | El Cajon Fire Department | 4 | Heartland Dispatch |
| City of Encinitas | Encinitas Fire Department | 5 | North County JPA |
| City of Escondido | Escondido Fire Department | 7 | City of Escondido |
| City of Imperial Beach | Imperial Beach Fire Department | 1 | Heartland Dispatch |
| City of La Mesa | La Mesa Fire Department | 3 | Heartland Dispatch |
| City of Lemon Grove | Lemon Grove Fire Department | 1 | Heartland Dispatch |
| City of National City | National City Fire Department | 2 | Heartland Dispatch |
| City of Oceanside | Oceanside Fire Department | 8 | North County JPA |
| City of Poway | Poway Fire Department | 3 | City of San Diego |
| City of San Diego | San Diego Fire-Rescue Department | 47 | City of San Diego |
| City of San Marcos | San Marcos Fire Department | 4 | North County JPA |
| City of Santee | Santee Fire Department | 2 | Heartland Dispatch |
| City of Solana Beach | Solana Beach Fire Department | 1 | North County JPA |
| City of Vista | Vista Fire Department | 6 | North County JPA |

Source: Carlsbad 2011; Chula Vista 2010; Hadfield, pers. comm., 2011; Del Mar 2009; El Cajon Fire Department 2011; Encinitas 2011; Escondido Fire Department 2011; Imperial Beach 2011; La Mesa 2011; Lemon Grove 2011; National City 2008; Oceanside Fire Department 2011; Poway 2011; San Diego 2011; San Marcos 2011; Santee 2011; Solana Beach 2010; Vista Fire Department 2009; San Diego County 2010.

**Table 4.14-2
Fire Service Providers in Unincorporated and Federal Lands within the San Diego Region***

| Agency | Governance | Fire Service Provider | Number of Stations | Dispatch |
|---|-------------|-----------------------|--------------------|--------------------|
| Alpine Fire Protection District | Independent | District | 1 | Heartland Dispatch |
| Bonita-Sunnyside Fire Protection District | Independent | District | 1 | Heartland Dispatch |
| Borrego Springs Fire Protection District | Independent | District | 1 | CAL FIRE Dispatch |
| Deer Springs Fire Protection District | Independent | District/CAL FIRE | 1 / 3 | CAL FIRE Dispatch |
| Julian-Cuyamaca Fire Protection District | Independent | District | 2 | CAL FIRE Dispatch |
| Lakeside Fire Protection District | Independent | District | 5 | Heartland Dispatch |
| Lower Sweetwater Fire Protection District | Independent | City of National City | n/a | Heartland Dispatch |
| North County Fire Protection District | Independent | District | 6 | North County JPA |
| Pine Valley Fire Protection District | Independent | SDCRFA | 1 | CAL FIRE Dispatch |
| Rancho Santa Fe Fire Protection District | Independent | District | 4 | North County JPA |
| San Diego Rural Fire Protection District | Independent | SDCRFA | 13 | CAL FIRE Dispatch |

| Agency | Governance | Fire Service Provider | Number of Stations | Dispatch |
|--|-------------|-----------------------|--------------------|--------------------|
| San Marcos Fire Protection District | Dependent | City of San Marcos | 4 | North County JPA |
| San Miguel Consolidated Fire Protection District | Independent | District | 8 | Heartland Dispatch |
| Valley Center Fire Protection District | Independent | District/CAL FIRE | 2 / 1 | CAL FIRE Dispatch |
| Vista Fire Protection District | Independent | City of Vista | n/a | North County JPA |
| Mootami MWD | Independent | CAL FIRE | n/a | CAL FIRE Dispatch |
| Pauma MWD | Independent | CAL FIRE | n/a | CAL FIRE Dispatch |
| Ramona MWD | Independent | CAL FIRE | 3 | CAL FIRE Dispatch |
| Rincon del Diablo MWD | Independent | City of Escondido | n/a | City of Escondido |
| Yuima MWD | Independent | CAL FIRE | n/a | CAL FIRE Dispatch |
| CSA 107 - Elfin Forest | Dependent | District | 1 | North County JPA |
| CSA 109 - Mt. Laguna** | Dependent | SDCRFA | 1 | CAL FIRE Dispatch |
| CSA 110 - Palomar Mountain** | Dependent | SDCRFA | 1 | CAL FIRE Dispatch |
| CSA 111 – Boulevard** | Dependent | SDCRFA | 1 | CAL FIRE Dispatch |
| CSA 112 – Campo** | Dependent | SDCRFA | 1 | CAL FIRE Dispatch |
| CSA 113 - San Pasqual** | Dependent | SDCRFA | 1 | CAL FIRE Dispatch |
| CSA 115 - Pepper Drive | Dependent | City of Santee | n/a | Heartland Dispatch |
| Sunshine Summit | Volunteer | SDCRFA | 1 | CAL FIRE Dispatch |
| Ranchita | Volunteer | SDCRFA | 1 | CAL FIRE Dispatch |
| Ocotillo Wells | Volunteer | SDCRFA | 1 | CAL FIRE Dispatch |
| Intermountain | Volunteer | SDCRFA | 1 | CAL FIRE Dispatch |
| De Luz | Volunteer | SDCRFA | 1 | CAL FIRE Dispatch |
| Shelter Valley | Volunteer | SDCRFA | 1 | CAL FIRE Dispatch |
| Others | | | | |
| CAL FIRE | State | CAL FIRE | 18 | CAL FIRE Dispatch |
| USFS | Federal | USFS | 10 | USFS |

Source(s): CAL FIRE 2009; LAFCO 2008–2009; LAFCO 2007

SDCRFA = San Diego County Regional Fire Authority

* Does not include fire protection provided by the San Diego Harbor Police Department for the Port of San Diego or the Department of Defense for military facilities.

** San Diego County Board of Supervisors approved actions necessary to implement “Step II of the Hybrid Plan Proposal” on January 25, 2011. Pending LAFCO approval it would incorporate CSA No(s). 109, 110, 111, 112, and 113 into CSA No. 135.

Fire protection services are typically measured by response times or service ratios. However, performance measures differ among agencies, as well as between urban and rural areas with different needs and challenges. Response times establish a measure of how quickly fire service providers are able to respond to emergencies throughout their service area. Service ratios have also been used by fire service providers to ensure that an adequate level of personnel and appropriate equipment are available to respond to different types of emergencies. Sufficient water pressure and supply are also critical to providing sufficient fire suppression in urban areas.

Fire departments are assigned a Public Protection Classification (PPC™) from ISO, a private company that provides information about insurance risk. ISO uses information about emergency dispatch; the number and location of engine companies; the amount of water needed to fight a fire; and water supply, pressure, and flow. Local fire departments receive a classification from one to 10; a classification of one

being the highest, and a classification of 10 indicating that fire suppression capabilities do not meet ISO's minimum standard (ISO 2011).

Police Protection

The San Diego County Sheriff's Department (SDSD) provides police protection services to the unincorporated areas of San Diego County and, through contract, to the cities of Del Mar, Encinitas, Imperial Beach, Lemon Grove, Poway, San Marcos, Santee, Solana Beach, and Vista. For the nine cities under contract, SDSD functions as the cities' local police department and is responsible for a full range of law enforcement services, including patrol, traffic, and investigative services. Within the unincorporated areas of San Diego County, SDSD provides patrol and investigative services, and the California Highway Patrol is responsible for traffic enforcement.

The cities of Carlsbad, Chula Vista, Coronado, El Cajon, Escondido, La Mesa, National City, Oceanside, and San Diego operate their own police departments that are responsible for providing police patrol, traffic enforcement, and investigative services to their residents.

SDSD also operates and maintains seven detention facilities, including providing services necessary to support an inmate population, and support the functions of court services for the entire region. SDSD also provides a number of specialized services to law enforcement agencies throughout the region, including aerial support, a bomb and arson unit, and a special enforcement detail responsible for highly specialized tactical operations. SDSD's crime laboratory provides forensic services to law enforcement and criminal justice agencies, including all the cities in San Diego County, except the City of San Diego. Table 4.14-3 shows sworn police protection personnel by jurisdiction in the San Diego region.

**Table 4.14-3
Sworn Police Protection Personnel by Jurisdiction in the San Diego Region, 2010**

| Police Protection Providers by Jurisdiction | Number of Sworn Personnel* |
|--|-----------------------------------|
| City of Carlsbad | 115 |
| City of Chula Vista | 237 |
| City of Coronado | 44 |
| City of El Cajon | 120 |
| City of Escondido | 160 |
| City of La Mesa | 68 |
| City of National City | 92 |
| City of Oceanside | 206 |
| City of San Diego | 2,124.75 |
| San Diego County Sheriff's Department (Total) | 949 |
| City of Del Mar | 10 |
| City of Encinitas | 59 |
| City of Imperial Beach | 29 |
| City of Lemon Grove | 23 |
| City of Poway | 48 |
| City of San Marcos | 76 |
| City of Santee | 59 |
| City of Solana Beach | 17 |
| City of Vista | 89 |
| Harbor Police | 141 |

Source: SANDAG 2010

* Number of Sworn Personnel is based on number of budgeted positions for FY 2009–10.

Police departments typically evaluate police protection based upon response times, which are used as guidelines to measure adequate levels of service. Response times vary among police protection service providers. Some service providers have standards for response times that are adopted through a general plan or strategic plan and approved by elected officials. Other agencies' response times are more informal and are established by the chief of police or city manager. Response times vary greatly between urbanized or built-out areas, which typically have lower response times than rural areas with disparate development patterns. Police departments often measure response times based upon the type of emergency. Calls are commonly ranked into different priority levels, with higher priority calls assigned a quicker goal for response time than lower priority calls. Police units respond to calls for service while on patrol, rather than from a centralized location. This differs from emergency response for fire protection, where units respond from a number of facilities located throughout the community.

Schools

There are 44 public school districts in the San Diego region that are responsible for educating approximately 496,866 pupils in kindergarten through 12th grade. Students are taught by 24,470 teachers in 742 schools. In addition to the primary and secondary educational facilities, eight community colleges are included in the region. California State University, San Marcos; San Diego State University; and University of California, San Diego are all public institutions for higher education within the San Diego region. The region has a number of private educational facilities at all education levels. Table 4.14-4 identifies the public school districts that provide education at the elementary school, intermediate/middle school, and high school levels.

**Table 4.14-4
2009–10 Student Enrollment and Staffing by District in the San Diego Region**

| District | District Type | Elementary School Students | Elementary Schools | Middle / Intermediate School Students | Middle / Intermediate Schools | High School Students | High Schools | Other School Types* | Total Students | Number of Teachers | Student / Teacher Ratio ** |
|----------------------------|---------------|----------------------------|--------------------|---------------------------------------|-------------------------------|----------------------|--------------|---------------------|----------------|--------------------|----------------------------|
| Alpine Union Elementary | Elementary | 1,485 | 4 | 523 | 1 | 1 | 0 | 2 | 2,009 | 108 | 18.60 |
| Bonsall Union Elementary | Elementary | 1,611 | 3 | 366 | 1 | 0 | 0 | 0 | 1,977 | 92 | 21.49 |
| Borrego Springs Unified | Unified | 259 | 1 | 83 | 1 | 193 | 2 | 2 | 535 | 34 | 15.74 |
| Cajon Valley Union | Elementary | 12,313 | 20 | 3,827 | 7 | 0 | 0 | 3 | 16,140 | 811 | 19.90 |
| Cardiff Elementary | Elementary | 749 | 2 | 0 | 0 | 0 | 0 | 0 | 749 | 46 | 16.28 |
| Carlsbad Unified | Elementary | 6,050 | 9 | 1,687 | 3 | 3,169 | 1 | 3 | 10,906 | 523 | 20.85 |
| Chula Vista Elementary | Elementary | 27,257 | 45 | 216 | 0 | 0 | 0 | 0 | 27,473 | 1,458 | 18.84 |
| Coronado Unified | Unified | 1,526 | 2 | 516 | 1 | 1,194 | 1 | 1 | 3,236 | 159 | 20.35 |
| Dehesa Elementary | Elementary | 746 | 2 | 142 | 0 | 354 | 0 | 0 | 1,242 | 70 | 17.74 |
| Del Mar Union Elementary | Elementary | 4,169 | 8 | 0 | 0 | 0 | 0 | 0 | 4,169 | 259 | 16.10 |
| Encinitas Union Elementary | Elementary | 5,452 | 9 | 0 | 0 | 0 | 0 | 0 | 5,452 | 287 | 19.00 |
| Escondido Union | Elementary | 15,118 | 19 | 4,219 | 5 | 0 | 0 | 1 | 19,337 | 1,007 | 19.20 |
| Escondido Union High | High | 0 | 0 | 0 | 0 | 9,322 | 5 | 2 | 9,322 | 392 | 23.78 |
| Fallbrook Union Elementary | Elementary | 4,564 | 6 | 1,132 | 1 | 0 | 0 | 2 | 5,696 | 263 | 21.66 |
| Fallbrook Union High | High School | 0 | 0 | 2 | 0 | 3,000 | 1 | 2 | 3,002 | 133 | 22.57 |

| District | District Type | Elementary School Students | Elementary Schools | Middle / Intermediate School Students | Middle / Intermediate Schools | High School Students | High Schools | Other School Types* | Total Students | Number of Teachers | Student / Teacher Ratio ** |
|--------------------------------------|----------------------------------|----------------------------|--------------------|---------------------------------------|-------------------------------|----------------------|--------------|---------------------|----------------|--------------------|----------------------------|
| Grossmont Union High | High School | 280 | 0 | 65 | 0 | 25,121 | 11 | 14 | 25,466 | 1,003 | 25.39 |
| Jamul-Dulzura Union Elementary | Elementary | 823 | 2 | 335 | 1 | 111 | 0 | 0 | 1,269 | 60 | 21.15 |
| Julian Union Elementary | Elementary | 1,257 | 1 | 422 | 1 | 801 | 0 | 0 | 2,480 | 145 | 17.10 |
| Julian Union High | High School | 0 | 0 | 0 | 0 | 174 | 1 | 2 | 174 | 12 | 14.50 |
| La Mesa-Spring Valley | Elementary | 9,574 | 17 | 2,969 | 4 | 1 | 0 | 1 | 12,544 | 616 | 20.36 |
| Lakeside Union Elementary | Elementary | 3,279 | 8 | 992 | 2 | 801 | 2 | 1 | 5,072 | 244 | 20.79 |
| Lemon Grove | Elementary | 3,080 | 6 | 828 | 1 | 0 | 0 | 0 | 3,908 | 168 | 23.26 |
| Mountain Empire Unified | Unified | 1,241 | 6 | 447 | 1 | 715 | 3 | 5 | 2,403 | 157 | 15.31 |
| National Elementary | Elementary | 5,922 | 11 | 48 | 0 | 0 | 0 | 0 | 5,970 | 259 | 23.05 |
| Oceanside Unified | Unified | 11,887 | 17 | 3,040 | 4 | 6,195 | 2 | 1 | 21,122 | 992 | 21.29 |
| Poway Unified | Unified | 17,623 | 25 | 5,178 | 6 | 10,996 | 5 | 2 | 33,797 | 1,368 | 24.71 |
| Ramona City Unified | Unified | 3,022 | 5 | 1,033 | 1 | 2,213 | 1 | 3 | 6,268 | 287 | 21.84 |
| Rancho Santa Fe Elementary | Elementary | 512 | 1 | 184 | 1 | 0 | 0 | 0 | 696 | 65 | 10.71 |
| San Diego County Office of Education | County Office of Education (COE) | 716 | 1 | 518 | 0 | 2,542 | 0 | 15 | 3,776 | 256 | 14.75 |
| San Diego Unified | Unified | 71,184 | 136 | 19,772 | 31 | 40,461 | 41 | 10 | 131,417 | 7,054 | 18.63 |
| San Dieguito Union High | High School | 0 | 0 | 3,965 | 4 | 8,696 | 4 | 3 | 12,661 | 526 | 24.07 |
| San Marcos Unified | Unified | 10,361 | 11 | 2,631 | 3 | 4,871 | 2 | 3 | 17,863 | 761 | 23.47 |
| San Pasqual Union Elementary | Elementary | 404 | 1 | 154 | 0 | 0 | 0 | 0 | 558 | 32 | 17.44 |
| San Ysidro Elementary | Elementary | 3,679 | 6 | 1,046 | 1 | 0 | 0 | 1 | 4,725 | 235 | 20.11 |
| Santee Elementary | Elementary | 4,845 | 9 | 1,428 | 0 | 0 | 0 | 2 | 6,273 | 312 | 20.11 |
| Sbc - High Tech High | Statewide Benefit Charter | 111 | 0 | 219 | 1 | 851 | 2 | 0 | 1,181 | 63 | 18.75 |
| Solana Beach Elementary | Elementary | 2,788 | 6 | 0 | 0 | 0 | 0 | 0 | 2,788 | 172 | 16.21 |
| South Bay Union Elementary | Elementary | 7,752 | 12 | 0 | 0 | 0 | 0 | 0 | 7,752 | 394 | 19.68 |
| Spencer Valley Elementary | Elementary | 1,143 | 1 | 501 | 0 | 622 | 0 | 0 | 2,266 | 218 | 10.39 |
| Sweetwater Union High | High School | 5 | 0 | 12,221 | 11 | 29,983 | 12 | 10 | 42,209 | 1,904 | 22.17 |
| Vallecitos Elementary | Elementary | 213 | 1 | 71 | 0 | 73 | 1 | 0 | 357 | 24 | 14.88 |
| Valley Center-Pauma Unified | Unified | 2,135 | 4 | 645 | 1 | 1,477 | 1 | 3 | 4,257 | 201 | 21.18 |
| Vista Unified | Unified | 12,677 | 17 | 3,853 | 5 | 9,614 | 5 | 8 | 26,144 | 1,284 | 20.36 |
| Warner Unified | Unified | 115 | 2 | 37 | 0 | 93 | 1 | 1 | 245 | 16 | 15.31 |

Source: CDE 2011a; CDE 2011b

* "Other School Types" includes Preschool, Special Education Schools (Public), County Community/Youth Authority Facilities (CYA), Opportunity Schools, Juvenile Court Schools, Alternative Schools of Choice, Continuation High Schools, District Community Day Schools, Adult Education Centers, and ROC/P.

** "Student/Teacher Ratio" is calculated based on available data and does not necessarily represent the actual instructional ratios per classroom.

Public schools typically use student generation rates as a basis for facility planning. Generation rates are evaluated against the existing capacity of individual school facilities that would be affected. Student generation rates are unique to each jurisdiction and individual developments based upon historical data and future plans to project the number of new students that will eventually be a part of the community.

California Government Code Section 65995 and Education Code Section 53080 authorize school districts to impose facility mitigation fees on new development as a method of addressing increasing enrollment resulting from that development. Pursuant to Government Code Section 65995, payment of development fees provides for full and complete mitigation of school impacts.

Libraries

The San Diego County Library operates branch libraries throughout the unincorporated areas of the County, and in the cities of Del Mar, El Cajon, Encinitas, Imperial Beach, La Mesa, Lemon Grove, Poway, San Marcos, Santee, Solana Beach, and Vista. The cities of Carlsbad, Chula Vista, Coronado, Escondido, National City, Oceanside, and San Diego all operate and maintain their own library systems. Table 4.14-5 identifies the municipal and county public library systems in the San Diego region. California State University, San Marcos; San Diego State University; and the University of California, San Diego also maintain academic libraries that are accessible to the community, but community members must pay an annual fee to borrow library resources. The San Diego County Law Library also provides a collection of legal materials that are available to the general public and legal professionals. The Law Library is funded through a portion of court fees that are collected and through the County of San Diego general fund.

**Table 4.14-5
Municipal and County Public Library Systems in the San Diego Region, 2010**

| Library | Total Outlets | Total Visits | Total Circulation | Total Transactions | Total Programs |
|------------------------------|---------------|--------------|-------------------|--------------------|----------------|
| Carlsbad City Library | 3 | 749,514 | 1,376,601 | 1,255 | 1,818 |
| Chula Vista Public Library | 3 | 605,979 | 985,157 | 534 | 763 |
| Coronado Public Library | 1 | 384,288 | 372,182 | 412 | 514 |
| Escondido Public Library | 4 | 439,494 | 603,537 | 164 | 182 |
| National City Public Library | 2 | 425,960 | 285,527 | 4,876 | 5,388 |
| Oceanside Public Library | 4 | 576,223 | 561,182 | 410 | 719 |
| San Diego County Library | 35 | 5,708,697 | 10,788,181 | 10,412 | 21,396 |
| San Diego Public Library | 36 | 6,143,281 | 7,706,431 | 6,524 | 10,851 |

Source: CSL 2011

Libraries typically use a ratio of square footage per resident within a defined service area as a performance measure. Some jurisdictions and systems have adopted service standards for libraries, while others have prepared library facility master plans to evaluate the need for facilities throughout their system.

4.14.1.2 Wastewater Treatment Facilities

Wastewater is generated by residential, commercial, and industrial sources throughout the San Diego region. In urbanized areas, municipalities, special districts, and other public entities operate and maintain sanitary sewer systems that include pipes, sewer lines, sewer laterals, and pump stations, which collect and convey wastewater to a wastewater treatment plant. Table 4.14-6 identifies existing wastewater collection systems in the San Diego region.

**Table 4.14-6
Wastewater Collection Systems in the San Diego Region by Responsible Agency**

| Region | Responsible Agency | Collection System | Miles Pressure Sewer | Miles Gravity Sewer | Miles of Laterals |
|--------|---|---|----------------------|---------------------|-------------------|
| 9 | 22nd District Agricultural Association | 22nd District Ag. Ass. CS | 0.7 | 1.6 | 0.4 |
| 9 | AC/S Environmental Security, MCB Camp Pendleton | USMC Base, Camp Pendleton CS | 32.0 | 104.0 | 80.0 |
| 7 | Borrego Water District | Borrego Wd-Rams Hill CS | 2.8 | 12.5 | 1.6 |
| 9 | Buena Sanitation District | Buena CS | 8.0 | 100.9 | 0.0 |
| 9 | Carlsbad MWD | Carlsbad MWD CS | 4.8 | 282.0 | 0.0 |
| 9 | Chula Vista City | City of Chula Vista CS | 2.6 | 488.0 | 0.0 |
| 9 | Coronado City | City of Coronado CS | 6.6 | 39.3 | 1.0 |
| 9 | CSU San Diego | San Diego State University CS | 0.0 | 5.0 | 4.0 |
| 9 | Del Mar City | City of Del Mar CS | 1.8 | 29.0 | 0.0 |
| 9 | El Cajon City | City of El Cajon CS | 0.0 | 195.0 | 0.0 |
| 9 | Encinitas City | City of Encinitas CS | 4.0 | 120.0 | 0.0 |
| 9 | Escondido City | HARRF Disch to San Elijo Ocean Outfall CS | 10.7 | 365.0 | 0.0 |
| 9 | Fallbrook Public Utility Dist | Fallbrook Plant 1, Oceanside of CS | 4.6 | 76.8 | 0.0 |
| 9 | Imperial Beach City | City of Imperial Beach CS | 6.0 | 39.5 | 0.3 |
| 9 | La Mesa City | City of La Mesa CS | 0.0 | 155.0 | 0.0 |
| 9 | Lemon Grove City | City of Lemon Grove CS | 0.1 | 62.4 | 0.0 |
| 9 | Leucadia Wastewater District | Leucadia Wastewater District CS | 11.4 | 193.0 | 0.0 |
| 9 | Marine Corps Base, Camp Pendleton | USMC Base, Camp Pendleton CS | 32.0 | 104.0 | 80.0 |
| 9 | National City | City of National City CS | 1.0 | 96.9 | 0.0 |
| 9 | Oceanside PWD | La Salina WWTP, Oceanside Otrfl CS | 40.0 | 450.0 | 0.0 |
| 9 | Olivenhain MWD | 4-S Ranch CS | 5.5 | 40.0 | 0.0 |
| 9 | Otay MWD | Otay Water District CS | 1.7 | 79.9 | 0.0 |
| 9 | Padre Dam Municipal Water District | Padre Dam CS | 5.0 | 161.0 | 0.0 |
| 9 | Poway City | City of Poway CS | 10.0 | 178.0 | 34.0 |
| 9 | Rainbow MWD | Rainbow Municipal Water Dist CS | 4.0 | 52.0 | 0.0 |
| 9 | Ramona MWD | San Vicente Treatment Plant CS | 1.0 | 40.0 | 21.0 |
| 9 | Rancho Santa Fe CSD | Rancho Santa Fe San Dist Plant CS | 6.0 | 60.0 | 0.0 |
| 9 | Rancho Santa Fe CSD | Santa Fe Valley CS | 2.0 | 14.2 | 0.0 |
| 9 | San Diego City | San Diego City CS | 145.0 | 3,002.0 | 2,000.0 |
| 9 | San Diego County Dept of Public Works | County of San Diego CS | 4.0 | 371.0 | 64.0 |
| 9 | San Diego County Dept of Public Works | Julian Water Pollution Facil. CS | 0.4 | 3.0 | 1.8 |
| 9 | Solana Beach City | City of Solana Beach CS | 2.0 | 39.0 | 0.0 |
| 9 | UC San Diego | University of California, San Diego CS | 2.0 | 25.0 | 3.0 |
| 9 | US Marine Corps Recruit Depot | MCRD CS | 0.0 | 4.0 | 2.5 |
| 9 | Vallecitos Water District | Meadowlark CS | 19.5 | 247.0 | 0.0 |
| 9 | Valley Center MWD | Lower Moosa Canyon Recl Facil CS | 5.0 | 50.0 | 0.0 |
| 9 | Valley Center MWD | Woods Valley CS | 5.0 | 50.0 | 0.0 |
| 9 | Vista City | City of Vista CS | 0.2 | 215.1 | 0.0 |

Source: SWRCB 2011b

Wastewater is transported through the sewer system to treatment facilities that use a series of methods to remove solids and contaminants from wastewater. Treated wastewater is disposed of through ocean outfalls, percolation beds, or groundwater recharge. A number of water reclamation facilities provide additional treatment to produce water for beneficial uses, such as agriculture, construction, and other commercial and industrial processes. Biosolids are produced in the wastewater treatment process as solids are removed from liquids and disposed of in landfills. Table 4.14-7 identifies permitted wastewater treatment facilities in the San Diego region and their capacity.

**Table 4.14-7
Wastewater Treatment and Water Reclamation Facilities in the San Diego Region**

| Responsible Agency | Facility Name | Existing Capacity MGD | | | Planned Capacity (2040) MGD | | | Disposal Method |
|--|-----------------------------------|-----------------------|-------|-------|-----------------------------|-------|-------|-------------------------------|
| | | P | S | T | P | S | T | |
| Borrego WD | Rams Hill WTF | 0.25 | 0.25 | - | 0.25 | 0.25 | - | Percolation |
| Buena SD | Shadowridge WRF | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | Irrigation |
| Carlsbad MWD | Carlsbad WRF | - | - | 4.0 | - | - | 16.0 | Irrigation |
| Encina Wastewater Authority | Encina WPCF | 40.5 | 40.5 | - | 40.5 | 40.5 | - | Outfall / Reuse |
| Escondido, City of | Hale Avenue RRF / WRF | 18.0 | 18.0 | 9.0 | 21.0 | 21.0 | 9.0 | Outfall / Reuse |
| Fairbanks Ranch CSD | Fairbanks Ranch WPCF | 0.275 | 0.275 | 0.275 | 0.275 | 0.275 | 0.275 | Percolation |
| Fallbrook PUD | Plant No.1 and 2 WRP ¹ | 3.1 | 3.1 | 3.1 | 4.6 | 4.6 | 3.1 | Reuse / Outfall |
| Leucadia Wastewater District | Forest R. Gafner WRP | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | Reuse / Outfall |
| Oceanside, City of | La Salina WRF | 5.5 | 5.5 | - | 5.5 | 5.5 | - | Outfall |
| Oceanside, City of | San Luis Rey WRF | 13.5 | 13.5 | 0.7 | 17.4 | 17.4 | 10.0 | Reuse / Outfall / Percolation |
| Olivenhain MWD | 4-S Ranch WWTP ² | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | Reuse / Outfall |
| Otay WD | Ralph W. Chapman WRF | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | Reuse / Outfall |
| Padre Dam MWD | Padre Dam WRF | 2.0 | 2.0 | 2.0 | 14.0 | 14.0 | 4.0 | Reuse / Outfall |
| Ramona MWD | Santa Maria WWTP | 1.0 | 1.0 | 0.35 | 1.5 | 1.5 | 1.5 | Reuse / Stream |
| Ramona MWD | San Vicente WWTP | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | Reuse / Stream |
| Rancho Santa Fe CSD | Santa Fe Valley WRF | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | Irrigation |
| Rancho Santa Fe CSD | Rancho Santa Fe Facility | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | Percolation |
| San Diego, City of (MWWD) | North City WRP | 60.0 | 60.0 | 30.0 | 60.0 | 60.0 | 30.0 | Reuse / Outfall |
| San Diego, City of (MWWD) | South Bay WRP | 15.0 | 15.0 | 15.0 | 21.0 | 21.0 | 15.0 | Reuse / Outfall |
| San Diego, City of (MWWD) | San Pasqual WRF | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | Irrigation / Land |
| San Diego, City of (MWWD) | Point Loma WWTP | 240.0 | - | - | 340.0 | - | - | Outfall |
| San Diego County, County of ³ | Descanso WPCF | 0.040 | 0.040 | - | - | - | - | Irrigation |
| San Diego County, County of ³ | Heise Park WPCF | 0.018 | 0.018 | - | - | - | - | Irrigation |
| San Diego County, County of ³ | Julian WPCF | 0.04 | 0.04 | - | - | - | - | Irrigation |
| San Diego County, County of ³ | Pine Valley WPCF | 0.04 | 0.04 | - | - | - | - | Percolation |
| San Diego County, County of ³ | Rancho Del Campo WPCF | 0.113 | 0.113 | - | - | - | - | Percolation |
| San Elijo JPA | San Elijo WRF | 5.25 | 5.25 | 2.48 | 5.25 | 5.25 | 3.7 | Reuse / Outfall |
| Vallecitos WD | Meadowlark WRF | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | Reuse / Land |
| Valley Center MWD | Moosa Canyon WRF | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | Irrigation / Percolation |
| Valley Center MWD | Orchard Run WRF | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | Irrigation |
| Valley Center MWD | Woods Valley Ranch WRF | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | Irrigation |
| Valley Center MWD | Skyline Ranch WRF | 0.06 | 0.06 | 0.03 | 0.06 | 0.06 | 0.03 | Percolation |
| Valley Center MWD | Central Valley (North) WRF | - | - | - | 0.22 | 0.22 | 0.22 | Irrigation |
| Valley Center MWD | Lilac Ranch WRF | - | - | - | 0.09 | 0.09 | 0.09 | Irrigation |
| Valley Center MWD | Live Oak Ranch WRF | - | - | - | 0.04 | 0.04 | 0.04 | Irrigation |
| Whispering Palms CSD | Whispering Palms WPCF | 0.4 | 0.4 | - | 0.4 | 0.4 | 0.4 | Reuse / Percolation |

Source: RWQCB 2011; SDCWA 2007, Appendix F; San Diego County 2010.

P=Primary Treatment, S=Secondary Treatment, T=Tertiary Treatment

¹Combined capacity of Plant 1 and Plant 2.

²Conditional capacity. Permitted capacity by SWRCB is 1.6 MGD.

³San Diego County Sanitation District becomes effective July 1, 2011.

Overall, the region's existing wastewater treatment facilities and collection systems have the capacity to convey, treat, and dispose or reuse the current levels of wastewater that are generated throughout the region. In some cases, individual facilities and systems may need upgrades to meet evolving treatment standards and address specific engineering challenges.

Most rural areas have no sanitary sewer system and rely on on-site wastewater treatment systems (septic tank systems). Approximately 80,000 septic systems exist throughout the unincorporated areas of San

Diego County. The most common type of septic system found in San Diego County consists of a septic tank connected to leach lines (San Diego County 2010).

City of San Diego Metropolitan Wastewater Department

The City of San Diego Metropolitan Wastewater Department (MWWD) provides regional wastewater treatment services for the City of San Diego and 15 other cities and sanitation districts: Chula Vista, Coronado, Del Mar, El Cajon, Imperial Beach, La Mesa, National City, and Poway; the Lemon Grove Sanitation District; the Padre Dam Municipal and Otay water districts; and the County of San Diego (on behalf of the Winter Gardens Sewer Maintenance District, and the Alpine, Lakeside, and Spring Valley sanitation districts).

In addition to the E.W. Blom Point Loma Wastewater Treatment Facility, MWWD owns and operates nine major pump stations, 84 small pump stations, the Point Loma Ocean Outfall, the MWWD Biosolids Center, the North City Water Reclamation Plant, the South Bay Water Reclamation Plant, and the South Bay Ocean Outfall.

The MWWD Biosolids Center processes organic material produced from solid material collected in the wastewater treatment process. The biosolids may be used as fertilizer for agriculture, gardens, and parks, or to reclaim and replenish worn and nutrient-depleted land. The North City Water Reclamation Plant has a treatment capacity of 30 million gallons per day (MGD) and distributes reclaimed water throughout the northern region of San Diego via an extensive reclaimed water pipeline system. The South Bay Water Reclamation Plant has a capacity of 15 MGD. Effluent produced at this facility is distributed for beneficial reuse through recycled water distribution systems operated by the Otay Water District and/or discharged through the South Bay Ocean Outfall into the Pacific Ocean.

South Bay International Water Treatment Plant

The South Bay International Wastewater Treatment Plant (SBIWTP) was designed to treat wastewater originating in Tijuana, Mexico, and resulting in the contamination of the Tijuana River in the United States. The United States and Mexico approved International Boundary and Water Commission (IBWC) Minute No. 283 dated July 8, 1990, that established a binational interagency "Clean Water Partnership," and authorized the construction and financing agreement of the SBIWTP. The SBIWTP is located about 2 miles west of the San Ysidro POE, near the international boundary, immediately north of Tijuana's main wastewater pumping station.

The SBIWTP is a physical-chemical plant capable of providing secondary treatment for 25 MGD average daily flows of sewage originating in Tijuana, Mexico, in excess of the Tijuana sewage system capacity. Treated effluent is discharged into the Pacific Ocean through the South Bay Ocean Outfall. The SBIWTP has expansion capability of up to 100 MGD. Mexico is expanding its sewage collection system and constructing additional facilities necessary to collect and convey Tijuana's sewage. These facilities will be operated and maintained at Mexico's expense. Both countries share in the operation and maintenance of the SBIWTP (IBWC 2011).

4.14.1.3 Storm Water Drainage Facilities

Storm water runoff occurs when precipitation from rain and snowmelt events flows over land or impervious surfaces and does not percolate into the ground. In rural areas, storm water flows into natural drainages, such as creek, streams, and rivers. In the urban areas of the San Diego region, storm water is collected in Municipal Separate Storm Sewer Systems (MS4s). MS4s collect storm water runoff in a system of conveyances, including roads with drainage systems, municipal streets, catch basins, curbs,

gutters, ditches, man-made channels, or storm drains. Storm water systems and facilities are necessary to drain water and prevent flooding in urban areas, for controlling erosion, and for protecting water quality.

As the runoff flows over the land or impervious surfaces (paved streets, parking lots, and building rooftops), it accumulates debris, chemicals, sediment, or other pollutants that could adversely affect water quality if the runoff is discharged untreated. Storm water pollution prevention is discussed in detail in Section 4.10, Hydrology and Water Quality. Each MS4 operator, identified in Table 4.14-8, is responsible for operation, maintenance, and management of their own system. MS4s are interconnected and often share facilities, cooperatively manage systems, and coordinate pollution control efforts.

**Table 4.14-8
Operators of Municipal Separate Storm Sewer Systems in the San Diego Region**

| Facility Name | Agency / Discharger | City |
|-----------------------------|---|----------------|
| CARLSBAD MS4 | Carlsbad City | Carlsbad |
| CHULA VISTA MS4 | Chula Vista City | Chula Vista |
| CORONADO MS4 | Coronado City | Coronado |
| DEL MAR MS4 | Del Mar City | Del Mar |
| EL CAJON MS4 | El Cajon City | El Cajon |
| ENCINITAS MS4 | Encinitas City | Encinitas |
| ESCONDIDO MS4 | Escondido City | Escondido |
| IMPERIAL BEACH MS4 | Imperial Beach City | Imperial Beach |
| LA MESA MS4 | La Mesa City | La Mesa |
| LEMON GROVE MS4 | Lemon Grove City | Lemon Grove |
| NATIONAL CITY MS4 | National City | National City |
| OCEANSIDE MS4 | Oceanside City | Oceanside |
| POWAY MS4 | Poway City | Poway |
| SAN DIEGO CITY, MS4 | San Diego City Storm Water | San Diego |
| SAN DIEGO CO, MS4 | San Diego County Department of Environmental Health | San Diego |
| SAN DIEGO INT'L AIRPORT MS4 | San Diego County Regional Airport Authority | San Diego |
| SAN DIEGO PORT DISTRICT MS4 | San Diego Unified Port District | San Diego |
| SAN MARCOS MS4 | San Marcos City | San Marcos |
| SANTEE MS4 | Santee City | Santee |
| SOLANA BEACH MS4 | Solana Beach City | Solana Beach |
| VISTA MS4 | Vista City | Vista |

Source: SWRCB 2011a

A vast amount of the unincorporated portion of the San Diego region is rural land that does not support or require storm water drainage facilities. In contrast, most urban areas within the incorporated areas of the San Diego region have a range of storm water drainage facilities, which convey surface water runoff to the area's water bodies and ultimately the Pacific Ocean (County of San Diego 2010).

Each jurisdiction within the project area requires the implementation of storm water pollution prevention efforts such that conveyance systems are designed to protect the surface water and groundwater quality as mandated by the state and federal regulations. These regulations require a multifaceted approach that involves infrastructure improvements and maintenance; water quality monitoring; source identification of pollutants; land use planning policies and regulations; and pollution prevention activities such as education, code enforcement, outreach, public advocacy, and training. See Section 4.10, Hydrology and Water Quality, for a detailed discussion and analysis of impacts to hydrology and water quality associated with implementation of the 2050 RTP/SCS.

Caltrans is responsible for the design, construction, management, and maintenance of the California highway system, including freeways, bridges, tunnels, Caltrans' facilities, and other related properties. Caltrans' discharges consist of storm water and non-storm water discharges from state-owned rights-of-way and facilities.

4.14.1.4 Solid Waste

The County of San Diego is the designated local enforcement agency (LEA) for all solid waste facilities in the region. The City of San Diego is the LEA for facilities within that city. The LEAs, with concurrence from Department of Resources Recycling and Recovery (CalRecycle), formerly the California Integrated Waste Management Board (CIWMB), issue operating permits to facilities including landfills, transfer stations, material recovery, and composting facilities.

Solid Waste Generation

In general terms, solid waste refers to garbage, refuse, and other discarded solid materials generated by residential, commercial, and industrial activities. CalRecycle identifies 10 categories of wastes: paper, glass, metal, electronics, plastic, other organic, construction and demolition (C&D), household hazardous waste, special waste, and mixed residue.

Solid waste generation is measured by disposal and diversion. Disposal is defined in PRC Section 40192 as “the final deposition of solid wastes onto land, into the atmosphere, or into the waters of the state.” Solid waste that is disposed in landfills is measured in volume (cubic yards) and weight (tons). Diversion includes programs and practices such as waste prevention and source reduction, recycling, reuse, and composting that reduce the total amount of waste that requires disposal. Table 4.14-9 shows the 2009 waste generation and 2006 diversion rates by jurisdiction.

**Table 4.14-9
2009 Total Waste Generation and 2006 Diversion Rate by
Jurisdiction in the San Diego Region**

| City | 2009 Total Waste Generation (Tons) | 2006 Diversion Rate |
|------------------------|------------------------------------|---------------------|
| City of Carlsbad | 110,572.86 | 57% |
| City of Chula Vista | 168,325.14 | 54% |
| City of Coronado | 41,962.43 | 54% |
| City of Del Mar | 8,807.43 | 56% |
| City of El Cajon | 91,808.89 | 59% |
| City of Encinitas | 64,716.77 | 56% |
| City of Escondido | 139,078.33 | 53% |
| City of Imperial Beach | 12,849.58 | 57% |
| City of La Mesa | 37,063.33 | 54% |
| City of Lemon Grove | 18,979.03 | 44% |
| City of National City | 51,373.86 | 53% |
| City of Oceanside | 131,519.11 | 59% |
| City of Poway | 52,998.34 | 62% |
| City of San Diego | 1,405,490.05 | 55% |
| City of San Marcos | 79,771.27 | 57% |
| City of Santee | 44,444.22 | 61% |
| City of Solana Beach | 12,771.03 | 68% |
| City of Vista | 90,025.50 | 47% |
| County of San Diego | 518,583.97 | 54% |
| Total / Average | 3,081,141.14 | 56% |

Source: CalRecycle 2011b

Landfills

The San Diego region is currently served by three privately operated landfills and one operated by the City of San Diego. The four landfills have a total remaining capacity of 97,411,143 cubic yards and have a total daily throughput of 17,845 tons per day. This includes the Sycamore Landfill expansion that was permitted by CIWMB in 2006 (City of San Diego 2006). There are also two landfills operated by Marine Corps Base Camp Pendleton for its exclusive use. A limited amount of solid waste generated in the San Diego region is also disposed of outside of the region. The four landfills have an estimated average of 48.9 percent remaining capacity (CalRecycle 2011a). Table 4.14-10 shows the remaining capacity of landfills located in the San Diego region and their estimated date of closure.

**Table 4.14-10
Landfills Located in the San Diego Region**

| Facility | Operator | SwisNo | Estimated Closure Date | Throughput (Tons/Day) | Total Capacity (Cu Yd) | Remaining Capacity (Cu Yd) | % Capacity Remaining |
|-----------------------|-------------------------------|------------|------------------------|-----------------------|------------------------|----------------------------|----------------------|
| Borrego Landfill | Allied Waste Industries, Inc. | 37-AA-0006 | 10/31/2030 | 50 | 844,000 | 478,836 | 56.7% |
| Otay Landfill | Allied Waste Industries, Inc. | 37-AA-0010 | 4/30/2021 | 5,830 | 62,377,974 | 33,070,879 | 53.0% |
| West Miramar Landfill | City Of San Diego | 37-AA-0020 | 1/31/2017 | 8,000 | 87,760,000 | 16,473,000 | 18.8% |
| Sycamore Landfill | Allied Waste Industries, Inc. | 37-AA-0023 | 12/31/2031 | 3,965 | 48,124,462 | 47,388,428 | 98.5% |
| Total | | | | 17,845 | 199,106,436 | 97,411,143 | 48.9% |

(CalRecycle 2011a)

Collection, Transfer and Material Recovery Facilities

Solid waste generated from residences and businesses in the San Diego region is collected by private operators, under contract with each of the cities and the county, and permitted by the state. The City of San Diego is an exception in the region and operates its own solid waste management system, including solid waste collection.

There are 13 transfer stations in the region that receive solid waste and transfer it into containers or vehicles before it is finally disposed of in a landfill or transformation facility. Five additional transfer stations in the region are also combined with material recovery facilities (MRFs) that process solid waste to remove recyclables and other valuable materials from the solid waste that is collected. Depending on the facility, MRFs process either unseparated trash, or separated trash with commingled recyclables. The total combined daily throughput capacity of transfer stations in the San Diego region is 8,196 tons per day. Table 4.14-11 identifies the daily throughput of transfer facilities/MRFs in the region.

Recycling, Composting, Chipping, and Grinding

There are 145 recycling centers in the San Diego region that collect recyclable materials. In addition, eight composting facilities in region collect, grind, mix, pile, and add moisture and air to organic materials to speed natural decay and produce a soil amendment. Another five chipping and grinding facilities in the region are designed to reduce the size of compostable material. Recycling, composting, chipping, and grinding all reduce the amount of solid waste that must be disposed of in a landfill.

**Table 4.14-11
Transfer/Processing Facilities**

| Facility | Operator | SwisNo | Throughput (Cu Yd) |
|---|---|---------------|-------------------------------|
| EDCO Recycling | EDCO Disposal, Inc. | 37-AA-0964 | 516 |
| SANCO Recycling | SANCO Services | 37-AA-0965 | 735 |
| Ramona MRF And Transfer Station | JEMCO Equipment Corporation | 37-AA-0925 | 370 |
| Universal Refuse Removal Recycling & TS | Universal Refuse Removal | 37-AA-0929 | 1,000 |
| Palomar Transfer Station, Inc. | Palomar Transfer Station, Inc. | 37-AH-0001 | 800 |
| EDCO Transfer Station | EDCO Disposal Corporation | 37-AA-0105 | 1,500 |
| Escondido Resource Recovery | Jemco Equipment Corporation | 37-AA-0906 | 2,500 |
| EDCO Station | EDCO Disposal Corporation | 37-AA-0922 | 200 |
| Fallbrook Recycling Facility | Fallbrook Refuse Service | 37-AA-0923 | 500 |
| EDCO Waste and Recycling - LVT Op. | EDCO Waste and Recycling | 37-AA-0969 | 15 |
| Coast Waste Management, Inc. LVTS Op. | Coast Waste Management, Inc. | 37-AA-0966 | 15 |
| Waste Management of San Diego - LVTO | Universal Refuse Removal Recycling & TS | 37-AA-0967 | 15 |
| Escondido Disposal, Inc. | Escondido Disposal, Inc. | 37-AA-0970 | 15 |
| EDCO Bin Yard | EDCO Bin Yard | 37-AA-0972 | 15 |
| City of San Diego Env. Ser. Dept. LVTO | City of San Diego (Refuse Collection) | 37-AB-0010* | 134 |
| Waste Mgt. North Co. Limited Vol. Trans Op. | Waste Management Inc. North County | 37-AA-0958 | 15 |
| Waste Management Of North County | Waste Management Of North County | 37-AA-0928 | 4,500 |
| Total | | | 12,845 |

* Solid Waste Information System (SWIS) No. 37-AB-0010 was converted using standard conversion rate of 1.67 cubic yards per ton (CalRecycle 2011a).

Construction and Demolition and Inert Debris Facilities

C&D materials include lumber, drywall, metals, masonry (brick, concrete, etc.), carpet, plastic, pipe, rocks, dirt, paper, cardboard, or green waste related to land development. Metals are the most commonly recycled material while lumber makes up the majority of debris that still goes to a landfill (CalRecycle 2010). There are 19 C&D Recyclers in San Diego, one processing facility, and four inert fill-disposal operations (CalRecycle 2011a).

Planned Facilities

The proposed 1,770-acre Gregory Canyon Landfill site is located in northern San Diego County on SR-76 with a facility area of 308 acres and a disposal footprint of 183 acres. The facility, as currently planned, would have an average daily throughput of 3,200 tons per day and would receive up to 1,000,000 tons of municipal solid waste year. The total site capacity is 59,000,000 cubic yards and has an estimated closing date of 2040. Gregory Canyon is currently seeking approval of a Solid Waste Facility Permit to operate the landfill, after over 10 years of ballot initiatives, court challenges, and environmental review (Gregory Canyon 2011).

4.14.1.5 Energy

San Diego Gas & Electric (SDG&E) is responsible for supply, transmission, and distribution of electricity to 1.4 million residential and commercial customers in San Diego County and a small portion of Orange

County. SDG&E is an Investor-Owned Utility (IOU) and a subsidiary of Sempra Energy. The Southern California Gas Company, a Sempra Energy affiliate, supplies wholesale gas to SDG&E, which in turn distributes natural gas to residents and businesses.

Electricity Sources

SDG&E obtains electricity from a variety of sources, including SDG&E-owned facilities and other private and publicly owned facilities that provide electricity through contracts and agreements. Electricity is generated from a variety of energy sources, including coal, natural gas, nuclear, hydroelectric, and a mix of other renewable resources. SDG&E does not directly own any of its own renewable generation resources. Nonrenewable resources that generate electricity for SDG&E include the following:

- **Palomar Energy Center (Natural Gas)**
The Palomar Energy Center, located in Escondido, is owned and operated by SDG&E and can generate up to 550 megawatts (MW) of electricity (SDG&E 2010a).
- **El Dorado Power Plant (Natural Gas)**
The El Dorado Power Plant is owned and operated by Sempra Generation. It has a 480-MW capacity (Sempra 2011).
- **Miramar Energy Center Units I and II (Natural Gas)**
The Miramar Energy Center has two 46-MW power generation stations owned and operated by SDG&E (SDG&E 2010b).
- **San Onofre Nuclear Generating Station (Nuclear)**
San Onofre Nuclear Generating Station (SONGS) is located near the San Diego County/Orange County border and is one of the largest nuclear generating stations in the United States with two active 1,100-MW units for a total capacity of 2,200 MW. SDG&E has a 20 percent share of SONGS; other partners include Southern California Edison and the City of Riverside (Edison 2011).
- **NRG Encina Plant (Natural Gas/Oil)**
With five steam turbines and one peaking combustion turbine, the NRG Encina plant generates 965 MW of electricity (CPUC 2010). NRG is planning to retire the Encina Plant and replace the generating units with more efficient units on the same site (Carlsbad Energy Center 2011). Energy produced at the Encina Plant is provided to SDG&E under a bilateral contract.
- **Otay Mesa Energy Center (Natural Gas)**
The Calpine Corporation owns Otay Mesa Energy Center produces 562 MW that are purchased by SDG&E through a 10-year bilateral contract (Calpine 2011).

Renewables Portfolio Standard

The California Renewables Portfolio Standard (RPS) [program\[SLG1\]](#), established by SB 1078 (Statutes of 2006, Chapter 516), and updated by SB 2 (Chapter 1, Statutes of 2011–12 First Extraordinary Session), requires that the amount of electricity generated from eligible renewable energy resources per year is at least 33 percent of total retail sales of electricity by 2020 for electric utilities in California. SDG&E produced 11.9 percent of its energy from renewable sources in 2010 (SDGE 2011). Table 4.14-12 shows the RPS target and the percentage of renewable generation achieved by SDG&E from 2004 through 2010. Table 4.4-13 provides detail on the renewable resources included in SDG&E's renewable portfolio. Table

4.14-14 shows projects pending approval, under construction, and active renewable sources that generate electricity and provide it to SDG&E.

Table 4.14-12
SDG&E Renewable Portfolio Standard Target and Achieved Generation,
by Year, 2004–2010

| Year | Target | Achieved* |
|------|--------|-----------|
| 2004 | 3.0% | 4.5% |
| 2005 | 3.8% | 5.2% |
| 2006 | 4.8% | 5.6% |
| 2007 | 5.5% | 5.2% |
| 2008 | 6.5% | 6.1% |
| 2009 | 7.3% | 10.2% |
| 2010 | 20.0% | 11.9% |

Source: (SDG&E 2011)

* “Achieved” is SDG&E’s reported *Total RPS Eligible Procurement* for each year. It does not reflect annual procurement surplus or deficit reported in the *Adjusted Procurement Percentage*.

Table 4.14-13
SDG&E’s Renewable Portfolio Standard Portfolio for 2010

| Renewable Resource | % of RPS* |
|--------------------|---------------|
| Biomass | 17.5% |
| Digester Gas | 1.2% |
| Biodiesel | 0.0% |
| Landfill Gas | 9.7% |
| Muni Solid Waste | 0.0% |
| Geothermal | 9.4% |
| Small Hydro | 0.0% |
| Conduit Hydro | 1.2% |
| Solar PV | 0.1% |
| Solar Thermal | 0.0% |
| Wind | 61.0% |
| Ocean/Tidal | 0.0% |
| Fuel Cells | 0.0% |
| Total | 100.0% |

* As indicated in Table 4.14-12, RPS was 11.9% of SDG&E’s total energy portfolio.
Source: (SDG&E 2011)

**Table 4.14-14
RPS Project Status, March 2011**

| Projects Approved and Online | Status | Min MW | Min Expected GWh/yr | Technology | Contract Term (years) | Location |
|--|------------------|---------------|----------------------------|-------------------|------------------------------|---|
| Naturener Rim Rock | pending approval | 300 | 1054 | wind | 15 | Glacier County, MT |
| Stirling Solar Two | on schedule | 300 | 648 | solar thermal | 20 | Imperial Valley |
| Pacific Wind LLC | on schedule | 140 | 392 | wind | 20 | Tehachapi |
| AES Delano | operational | 49 | 386 | biomass | 5 | Delano, Kern County |
| AES Delano | operational | 49 | 365 | biomass | 10 | Delano, Kern County |
| CSolar IV South | pending approval | 97 | 306 | solar pv | 25 | Imperial Valley |
| Shell Cabazon/Whitewater Hill RECs | pending approval | 104.4 | 285 | wind | 2 | Palm Springs |
| Centinela Solar | on schedule | 110 | 231 | solar pv | 20 | Calexico |
| Calpine Geysers | operational | 25 | 212 | geothermal | 4.8 | Sonoma and Lake Counties |
| Oasis Power Partners | operational | 60 | 179 | wind | 15 | Mojave |
| Mt. Signal Solar | delayed | 49 | 168 | solar thermal | 20 | Fillaree Ranch, Imperial Valley |
| Bull Moose | delayed | 20 | 158 | biomass | 20 | San Diego County |
| Alta Mesa | on schedule | 40 | 126.6 | wind | 20 | Palm Springs |
| MM Prima Deshecha Energy (Algonquin) | operational | 15 | 118 | biogas | 15 | San Juan Capistrano |
| Kumeyaay Wind | operational | 51 | 101 | wind | 20 | San Diego County |
| Renewable Energy Providers - Blue Lake | operational | 11 | 90 | biomass | 15 | Eureka |
| PacifiCorp Power & SeaWest | operational | 25 | 89 | wind | 15 | Riverside County |
| Centinela Solar (expansion) | on schedule | 30 | 62.3 | solar pv | 20 | Calexico |
| GRS (Coyote Canyon) | operational | 8 | 60 | biogas | 10 | Irvine |
| WTE Acquisitions, Green Power Wind | operational | 17 | 48 | wind | 15 | San Geronio |
| Pacificorp | operational | 75 | 44 | wind | 2 | Various Locations in Pacificorp Territory |
| MM Prima Deshecha Energy | operational | 5 | 28 | biogas | 5 | San Juan Capistrano |
| Coram CellC | operational | 7.5 | 26.9 | wind | 15 | Tehachapi, Kern County |
| City of San Diego (Point Loma STP) | operational | 5 | 24 | biogas | 5 | Point Loma |
| Covanta Otay 3 | operational | 4 | 24 | biogas | 10 | Chula Vista |
| MM Miramar | operational | 3 | 22 | biogas | 10 | Miramar, San Diego County |
| City of San Diego MWD | operational | 5 | 22 | biogas | 5 | San Diego |
| Rancho Penasquitos | operational | 5 | 20 | small hydro | 10 | San Diego County |
| GRS (Sycamore 1) | operational | 3 | 19 | biogas | 12 | Santee |
| MM San Diego North City | operational | 1 | 7 | biogas | 10 | San Diego |

Source: CPUC 2011

Electricity Transmission Infrastructure

SDG&E has over 1,800 miles of transmission lines in its service territory, but only two connections to the state's electricity grid. Imported resources are received via the Miguel Substation as the delivery point for power flow on the Southwest Power Link (SWPL), which is SDG&E's 500-kilovolt (kV) transmission line that runs from Arizona to San Diego along the U.S. border with Mexico. SONGS also has a 230-kV switchyard that is used to import energy into the region (SDG&E 2008).

SDG&E has recently begun to improve its transmission infrastructure. The recently completed 52-mile Otay-Metro Powerloop includes two 230,000-volt electrical lines that create a loop around the heart of San Diego County, linking the cities of San Diego, National City, Chula Vista, and Santee, and unincorporated areas (SDG&E 2010). SDG&E has also recently begun construction on the Sunrise Powerlink, a 117-mile, 500-kV transmission line that will carry energy from the Imperial Valley to San

Diego. SDG&E is also developing the East County (ECO) Substation Project, which will provide local renewable energy projects with a connection point to the electric grid. The proposed 58-acre substation will be located on the eastern edge of the community of Jacumba, between I-8 and the United States/Mexico border (SDG&E 2010c).

Regional Electricity Demand

SDG&E's total annual retail electricity sales grew from 2003–2008 and declined in 2009. Table 4.14-15 shows total electricity usage in the SDG&E planning area for 1990–2009. Table 4.14-16 shows the percentage of electricity consumption by sector for 2009. Forecasted data, shown in Table 4.14-17, show a continual increase in total usage for the future. Table 4.14-17 also includes a forecast for peak demand, which measures the generation capacity necessary to satisfy energy demand during the hour of the year where energy demand is expected to be greatest, typically a hot summer day.

Long-Term Procurement Plan

IOUs are required to submit Long-Term Procurement Plans (LTPPs) to the California Public Utilities Commission (CPUC). LTPPs have a 10-year planning timeframe and are updated every 2 years. LTPPs must identify resources and demonstrate sufficient generating capacity to serve customers needs during peak periods, plus an additional 15 percent surplus, based upon the California Energy Commission forecast.

According to the 2006 SDG&E LTPP, SDG&E maintains multiple planning and procurement models to prepare a long-term plan for its resource portfolio and identify the need for resources and infrastructure.

SDG&E's long-term planning process focuses on providing a reliable electricity supply to customers at the lowest possible cost, while meeting California's preferred loading order for resources and reducing GHG emissions. To accomplish these goals, the long-term plan addresses both demand- and supply-side resources and makes recommendations for a balance of each of these resource types. SDG&E also uses modeling software to make short-term decisions on day-to-day electricity procurement.

Natural Gas

Southern California Gas Company (SoCalGas) is the principal provider of natural gas in Southern California, providing retail and wholesale customers, including electric generation (EG) customers. SDG&E is a wholesale utility customer of SoCalGas and responsible for distribution of natural gas to customers in San Diego.

Table 4.14-15
SDG&E Total Electricity Demand for 1990–2009

| Year | Total Usage |
|-------------|--------------------|
| 1990 | 14,926 |
| 1991 | 14,764 |
| 1992 | 15,665 |
| 1993 | 15,549 |
| 1994 | 15,791 |
| 1995 | 15,923 |
| 1996 | 16,437 |
| 1997 | 17,082 |
| 1998 | 17,630 |
| 1999 | 18,312 |
| 2000 | 19,294 |
| 2001 | 17,825 |
| 2002 | 18,267 |
| 2003 | 18,968 |
| 2004 | 19,908 |
| 2005 | 19,910 |
| 2006 | 20,851 |
| 2007 | 21,104 |
| 2008 | 21,468 |
| 2009 | 20,928 |

Source: CEC 2011

Table 4.14-16
Electricity Consumption by Sector, 2009

| Sector | Percent |
|-----------------------|----------------|
| Commercial Building | 44% |
| Residential | 36% |
| Commercial Other | 9% |
| Industry | 7% |
| Ag & Water Pump | 2% |
| Streetlight | 1% |
| Mining & Construction | 1% |

Source: CEC 2011

**Table 4.14-17
Forecasted Annual Energy Usage and Peak Demand for SDG&E 2008–2020**

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Energy Usage (GWH) | 21,695 | 21,941 | 22,284 | 22,680 | 22,978 | 23,283 | 23,556 | 23,845 | 24,130 | 24,434 | 24,740 |
| Peak Demand (MW) | 4,516 | 4,578 | 4,658 | 4,738 | 4,797 | 4,856 | 4,911 | 4,973 | 5,032 | 5,094 | 5,157 |

Source: SDG&E 2011

The Transwestern Pipeline Company and El Paso Natural Gas Company systems supply natural gas through three major interstate natural gas pipelines that deliver natural gas to California. The El Paso Natural Gas Company's southern system is the principal conveyance of natural gas to the southern leg of the SoCalGas system, which in turn provides a route for natural gas deliveries to the SDG&E system (US EIA 2011). The North Baja Pipeline (Gasoducto Bajanorte) is a 220-mile natural gas pipeline in Mexico that is co-owned by North Baja Pipelines LLC and Sempra Energy International. The system serves the growing energy demand in Baja California, Mexico, and portions of Riverside, Imperial, and San Diego counties (TransCanada 2011).

The San Diego region currently consumes approximately 581 million therms (MMTh) of natural gas per year (not including gas used for electricity generation). The majority of natural gas end-users are in the residential and commercial sectors, which account for 60 percent and 20 percent of end-use consumption, respectively. California imports 87 percent of its natural gas needs from outside the state, and at the same time in-state production is decreasing. Under a business-as-usual scenario, regional natural gas consumption is expected to grow to 660 MMTh in 2020 and 730 MMTh in 2030 (SANDAG 2009).

Transportation Fuels

Transportation fuels are critical to the region's mobility and goods movement. The on-road transportation sector is almost entirely dependent on gasoline and diesel (petroleum-based fuels). Passenger cars and light-duty trucks are the largest consumers of transportation fuel, accounting for about 1.6 billion gallons of gasoline and diesel per year, or 85 percent of total consumption by on-road vehicles. The remaining percentage is mostly attributed to heavy-duty trucks and buses, which account for about 170 million gallons or about 11 percent of total on-road fuel consumption. In addition, to buses that rely on diesel, the region's transit agencies operate a substantial number of compressed natural gas (CNG) buses, including CNG-electric hybrids. Without changes in policy or behavior, on-road consumption of petroleum-based fuels is expected to increase (SANDAG 2009).

Consumption of transportation fuels in the on-road transportation sector is largely determined by vehicle miles traveled (VMT) and technology. As VMT increase throughout the region there is an increased demand for transportation fuels. As discussed in Chapter 3 - Forging a Path Toward More Sustainable Living: A Sustainable Communities Strategy and Chapter 8 - Demand Management: Innovative Incentives for Taking the Path Less Traveled in the 2050 RTP/SCS, per capita VMT stay relatively constant, but increase slightly by 2035 and then decrease by 2050. Technology is also an important factor that can reduce the demand for transportation fuels. By increasing fuel efficiency and allowing greater distances to be traveled, the demand for transportation fuels will decrease all things equal.

Although small relative to fuel use by passenger cars and heavy-duty vehicles, energy consumed by the civil aviation, rail transportation, waterborne equipment, and off-road sectors is significant. In 2007, the civil aviation sector, which comprises commercial flights and ground operations at SDIA, consumed about 210 million gallons of jet fuel, 28,000 gallons of aviation gasoline, and 53 million cubic feet of

natural gas. International flights and aviation at other airports and military facilities are not included in this analysis because data could not be obtained. The off-road vehicles and equipment category is the next largest consumer of fuel in this sector (primarily gasoline and diesel). The largest sources of consumption of fuel in this category are construction and mining, industrial, pleasure craft, and agricultural.

The rail transportation category consumes diesel fuel for freight and goods movement, the COASTER commuter rail line, and the SPRINTER light-rail line. The light-rail San Diego Trolley is powered by electricity. There are many types of waterborne navigation in the San Diego region, but the largest sources of fuel consumption are ocean-going vessels (OGVs) and harbor operating within the San Diego Harbor. The majority of fuel use from OGVs is due to automobile shipments, refrigerated vessels, and passenger cruise ships. The majority of harbor craft fuel use is due to commercial and charter fishing boats.

Technological improvements have also enabled the viability of alternative transportation fuels and vehicles that reduce the dependence on petroleum-based fuels. Alternatives to petroleum-based fuels include biofuels (ethanol and biomass-based diesels), electricity, hydrogen and renewable biofuels, and natural gas and propane.

Most of the gasoline available in the San Diego region is shipped from refineries located in the Los Angeles/Long Beach area. This fuel is transported to San Diego by barge and via a pipeline. The fuel is delivered to bulk storage facilities north of Mission Valley and in the South Bay for further distribution to retailers by truck. The region has a limited number of public alternative fuel stations. The region has a number of alternative fuel facilities that are public accessible and that are restricted to private access, for fleet or other designated users. Most of these facilities supply CNG or electricity. A limited number of facilities provided liquefied petroleum gas (LPG), ethanol (E85), and biodiesel (BD). There is one hydrogen (HY) fuel facility in the San Diego region (U.S. DOE 2011).

4.14.2 REGULATORY SETTING

Federal Laws and Regulations

Clean Water Act

Section 402 of the CWA establishes the NPDES permit program to regulate the discharge of pollutants from point sources. The CWA defines point sources of water pollutants as “any discernable, confined, and discrete conveyance” that discharges or may discharge pollutants. These are sources from which wastewater is transmitted in some type of conveyance (pipe and channel) to a waterbody, and are classified as municipal or industrial. Municipal point sources consist primarily of domestic treated sewage and processed water, including municipal sewage treatment plant outfalls and storm water conveyance system outfalls. These outfalls contain harmful substances that are emitted directly into waters of the U.S. Without a permit, the discharge of pollutants from point sources into navigable waters of the U.S. is prohibited. NPDES permits require regular water quality monitoring. For a detailed discussion of the Clean Water Act see Section 4.10.2.

Resource Recovery and Conservation Act (RCRA) of 1976

RCRA Subtitle D focuses on state and local governments as the primary planning, regulating, and implementing entities for the management of nonhazardous solid waste, such as household garbage and nonhazardous industrial solid waste. To promote the use of safer units for solid waste disposal, Subtitle D provides regulations for the generation; transportation; and treatment, storage, or disposal of hazardous wastes. USEPA developed federal criteria for the proper design and operation of municipal solid waste

landfills (MSWLFs) and other solid waste disposal facilities. USEPA approved the State of California's program, a joint effort of the CIWMB, SWRCB, RWQCBs, and LEAs, on October 7, 1993.

State Laws and Regulations

State Responsibility Area (SRA) Fire Safe Regulations (Title 14 Natural Resources, Department of Forestry Fire Protection)

These regulations constitute the basic wildland fire protection standards of the California Board of Forestry. They have been prepared and adopted for the purpose of establishing minimum wildfire protection standards in conjunction with building, construction, and development in SRAs. Title 14 regulates that the future design and construction of structures, subdivisions, and developments in an SRA shall provide for basic emergency access and perimeter wildfire protection measures.

Assembly Bill 16

In 2002, AB 16 created the Critically Overcrowded School Facilities program, which supplements the new construction provisions within the School Facilities Program (SFP). SFP provides state funding assistance for two major types of facility construction projects: new construction and modernization. The Critically Overcrowded School Facilities program allows school districts with critically overcrowded school facilities, as determined by the California Department of Education (CDE), to apply for new construction projects in advance of meeting all SFP new construction program requirements. Districts with SFP new construction eligibility and school sites included on a CDE list of source schools may apply.

Senate Bill 50 – Leroy F Greene Schools Facilities Act of 1998

SB 50, or the Leroy F. Greene School Facilities Act of 1998, restricts the ability of local agencies to deny project approvals on the basis that public school facilities (classrooms, auditoriums, etc.) are inadequate. School impact fees are collected at the time when building permits are issued. Payment of school fees are also collected at the time when building permits are issued. Payment of school fees is required by SB 50 for all new residential development projects and is considered “full and complete mitigation” of any school impacts. School impact fees are payments to offset capital cost impacts associated with new developments, which result primarily from costs of additional facilities, related furnishings and equipment, and projected capital maintenance requirements. As such, agencies cannot require additional mitigation for any school impacts.

California Building Standards Code (Title 24, CCR)

Title 24 applies to all buildings throughout the State of California, and includes requirements for structural, mechanical, electrical, and plumbing systems, and requires measures for energy conservation, green design, construction and maintenance, fire and life safety and accessibility. Cities and counties are required by state law to enforce Title 24. More restrictive ordinances can also be adopted by cities and counties due to specific geographical conditions. Included among the twelve parts of Title 24 are Part 9, which includes the California Fire Code, and is based on the 2009 International Fire Code, and Part 11, which includes the California Green Building Standards Code that includes measures for incorporating energy efficiency into buildings.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB issues individual and general NPDES permits for wastewater and storm water through authorization of USEPA. Discharges that may impact surface or groundwater, and which are not regulated by an NPDES permit, are issued a waste discharge requirement (WDR) that serves as a permit under the authority of the California Water Code. The RWQCBs issue Land Disposal WDRs that permit certain solid and liquid waste discharges to land to ensure that wastes do not reach surface water or groundwater. Land Disposal WDRs contain requirements for liners, covers, monitoring, cleanup, and closure. The RWQCBs also permit certain point source discharges of waste to land that have the potential to affect surface or groundwater quality. This category of discharges, known as “Non-15” WDR, are the most diverse and include sewage sludge and biosolids, industrial wastewater from power plants, wastes from water supply treatment plants, treated wastewater for aquifer storage and recovery, treated groundwater from cleanup sites, and many others.

Related to wastewater collection and treatment facilities, storm water drainage facilities, and landfills the SWRCB has issued the following regulations:

- Caltrans NPDES Permit (Order 99-06-DWQ): Requires Caltrans to regulate nonpoint source discharge from its properties, facilities, and activities. Among other requirements, Caltrans must annually update an enforceable Stormwater Management Plan (SWMP). See Section 4.10.2 for more detail.
- Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2006-0003-DWQ): Requires all federal and state agencies, municipalities, counties, districts, and other public entities that own, operate, or are otherwise responsible for sanitary sewer systems greater than 1 mile in length that collect and/or convey untreated wastewater to a publicly owned treatment facility in California to prepare sewer system management plans and report all sanitary sewer overflows (SSOs) to the SWRCB. Order No. WQ 2008-0002-EXEC, amended the statewide Monitoring and Reporting Program for SSOs that reach surface waters or storm drains. The RWQCB issued Order No. R9-2007-0005 to reaffirm the prohibition of SSOs upstream of a wastewater treatment facility.

AB885 - On-Site Wastewater Treatment Systems (OWTS) – PENDING

AB885 (Chapter 781, Statutes of 2000) required the SWRCB to draft and implement regulations for siting, installation, operation, and maintenance of OWTS. Proposed regulations were issued in 2009 but have not yet been adopted.

Integrated Waste Management Act of 1989 (AB 939 or IWMA)

The IWMA was enacted by the California legislature to reduce dependence on landfills as the primary means of solid waste disposal, and to ensure an effective and coordinate approach to safe management of all solid waste generated within the state. The IWMA establishes a hierarchy of preferred waste management practices: (1) source reduction (waste prevention), to reduce the amount of waste generated at its source; (2) recycling (or reuse) and composting; (3) transformation; and (4) disposal by landfilling. The IWMA required disposal of waste by the local jurisdictions to be cut by 25 percent by 1995 and by 50 percent by 2000. Waste disposal levels from the year 1990 were used as the base, adjusted for population and economic conditions.

The IWMA also requires the preparation of a Countywide Integrated Waste Management Plan (CIWMP), including a Countywide Siting Element that must demonstrate a remaining landfill disposal capacity of at

least 15 years to serve all the jurisdictions in the county. The Countywide Siting Element includes a combination of strategies to demonstrate adequate capacity, including existing, proposed, and tentative landfills or expansions; increased diversion efforts; and the export of solid waste for disposal. In San Diego, the Countywide Siting Element is prepared by county staff and must be adopted by the County Board of Supervisors, and by a majority of the cities within San Diego County. The Countywide Siting Element must be reviewed and updated every 5 years.

As part of the CIWMP, the IWMA also requires that each jurisdiction (cities and the county) prepare (1) a Source Reduction and Recycling Element (SRRE), a Household Hazardous Waste Element (HHWE); and a Non-Disposal Facility Element (NDFE).

Title 14, CCR

CalRecycle regulations pertaining to nonhazardous waste management in California include minimum standards for solid waste handling and disposal; regulatory requirements for composting operations; standards for handling and disposal of asbestos containing waste; resource conservation programs; enforcement of solid waste standards and administration of solid waste facility permits; permitting of waste tire facilities and waste tire hauler registration; special waste standards; used oil recycling program; electronic waste recovery and recycling; planning guidelines and procedures for preparing, revising, and amending countywide IWMP; and solid waste cleanup program.

Title 27, CCR

CalRecycle and the SWRCB jointly issue regulations pertaining to waste disposal on land, including criteria for all waste management units, facilities and disposal sites; documentation and reporting; enforcement, financial assurance; and special treatment, storage, and disposal units.

California Mutual Aid Plan

The California Mutual Aid Plan establishes policies, procedures, and responsibilities for requesting and providing inter- and intra-agency assistance in emergencies. The plan directs local agencies to develop automatic or mutual aid agreements, or to enter into agreements for assistance by hire (e.g., Schedule A contracts) where local needs are not met by the framework established by the Mutual Aid Plan.

Local Regulations, Plans and Policies

San Diego Municipal Storm Water Permit

This permit requires the County of San Diego, the 18 incorporated cities of San Diego County, San Diego Unified Port District, and the San Diego County Regional Airport Authority to prepare a Jurisdictional Urban Runoff Management Plan (JURMP). Each of these JURMPs includes a component addressing construction activities, development planning, and existing development. In accordance with the provisions of the Municipal Permit, the County of San Diego developed a model Standard Urban Runoff Mitigation Plan (SUSMP) (County of San Diego 2011a) and a SUSMP manual (County of San Diego 2008) to identify mitigation strategies required to protect storm water quality for new development and significant redevelopment within the San Diego region. The County's model SUSMP establishes a series of source control, site design, and treatment control BMPs that are to be implemented by all Priority Development Projects (PDP). PDP include new development, redevelopment projects that create, add, or replace 5,000 square feet, and pollutant generating projects. Each jurisdiction within San Diego County (i.e., copermittees of the Municipal Storm Water Permit) has adopted their own SUSMP. A PDP should

refer to the SUSMP that has jurisdiction for the project for guidance on the mitigation of storm water pollutants.

Provision D.1.g of RWQCB Order R9-2007-0001 requires the San Diego Stormwater Copermittees (the cities within the San Diego region as well as the County government) to implement a Hydromodification Management Plan (HMP) “to manage increases in runoff discharge rates and durations from all PDP, where such increased rates and durations are likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.” The HMP requires PDP to implement hydrologic control measures so that postproject runoff flow rates and durations do not exceed preproject flow rates and durations where they would result in an increased potential for erosion or significant impacts to beneficial uses or violate the channel standard. A more detailed discussion of the San Diego Municipal Storm Water Permit and HMP, as well as its application, see Section 4.10.2.

California Regional Water Quality Control Board, Region 9, San Diego, Order No. R9-2007-0005

SWRCB Order No. 2006-0003-DWQ is the primary regulatory mechanism for sanitary sewer systems statewide but allows each RWQCB to issue more stringent or more prescriptive WDRs for sanitary sewer systems within their respective jurisdiction. Order No. R9-2007-0005 reaffirms the prohibition on all SSOs upstream of a sewage treatment plant that had already been adopted by the California RWQCB, Region 9, and San Diego.

County Code of Regulatory Ordinances, Section 68.301 et seq.

The County Department of Environmental Health (DEH) is the primary agency charged with regulating the design, construction, and maintenance of septic tanks, leach lines, seepage pits, and alternative OWTS throughout the region through a delegation from the RWQCB. The County DEH regulates these facilities through a Septic Tank Permit Process. Any development proposing to use an OWTS must first demonstrate that the site can meet minimum design criteria with respect to soil type and groundwater separation. The size of the OWTS is a function of the soil permeability and peak daily sewage flow based on percolation testing and occupancy.

Source Reduction and Recycling Element, Household Hazardous Waste Element, and Non-Disposal Facilities Element

The IWMA requires local jurisdictions to prepare and adopt three elements that contribute to the CIWMP. The elements include a Source Reduction and Recycling Element (SRRE), a Household Hazardous Waste Element (HHWE), and a Non-Disposal Facilities Element (NFDE). Local jurisdictions also have programs and policies to reduce waste generation, which also regulate the disposal, collection, and processing of solid waste.

California Mutual Aid Plan

The California Mutual Aid Plan establishes policies, procedures, and responsibilities for requesting and providing inter- and intra-agency assistance in emergencies. The plan directs local agencies to develop automatic or mutual aid agreements, or to enter into agreements for assistance by hire (e.g., Schedule A contracts) where local needs are not met by the framework established by the Mutual Aid Plan.

Regional Energy Strategy

SANDAG’s 2009 Regional Energy Strategy (RES) establishes goals for the San Diego region to be more energy efficient, increase use of renewable energy sources, and enhance the region’s energy infrastructure so that we are able to meet growing energy demand. The RES focuses on opportunities and authorities that SANDAG and its member agencies could take advantage of to address energy issues through their authorities in areas such as land use planning, transportation planning and funding, and the building

entitlement process. Although the RES Update does not make recommendations for specific energy projects (e.g., power plants or transmission projects), it does assess regional need for energy resources and infrastructure. The RES also does not replace the long-term electricity plan that San Diego Gas & Electric develops for the CPUC, but it can inform their decision-making (SANDAG 2011).

Local jurisdictions may have policies and objectives related to energy conservation, such as using infrastructure that maximizes energy savings or developing local or renewable energy sources, in their general plans or other documents.

General Plans, Municipal Codes, Zoning Ordinances, Policies, and Programs

General Plans

General plans are comprehensive plans, adopted by local jurisdictions, which provide a vision for the cities' future, and establish long-term policy direction on a variety of issues, including those related to public services, utilities, and energy. Table 4.14-18 identifies related topics that are addressed by cities' general plans.

**Table 4.14-18
General Plans Addressing Public Services, Utilities, and Energy**

| City | Fire Protection | Police Protection | Schools | Libraries | Wastewater | Storm water | Solid Waste | Energy | Facilities Financing |
|---------------------|-----------------|-------------------|---------|-----------|------------|-------------|-------------|--------|----------------------|
| Carlsbad | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Chula Vista | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Coronado | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| Del Mar | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| El Cajon | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Encinitas | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Escondido | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Imperial Beach | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| La Mesa | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Lemon Grove | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| National City | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Oceanside | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Poway | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| City of San Diego | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| San Marcos | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Santee | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Solana Beach | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Vista | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| County of San Diego | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Data compiled by AECOM in 2011

Construction and Demolition Ordinances

C&D ordinances usually require construction or demolition projects meeting certain thresholds to prepare a waste management plan that must demonstrate how the project applicant will meet diversion goals

through reuse and recycling. Chula Vista, Imperial Beach, La Mesa, Lemon Grove, San Diego, Santee, Solana Beach, and Vista each have existing C&D ordinances (CalRecycle 2011c).

4.14.3 SIGNIFICANCE CRITERIA

The 2050 RTP/SCS would have a significant impact on public services, utilities, and service systems if implementation were to:

- PS-1** Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:
- Fire protection
 - Police protection
 - Schools
 - Libraries
- US-1** Require or result in the construction of new wastewater treatment facilities or the expansion of existing facilities to adequately meet projected capacity needs, the construction of which could cause a significant environmental effect.
- US-2** Require or result in the construction of new storm water drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects.
- US-3** Be served by landfills with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
- US-4** Cause noncompliance with federal, state, and local statutes and regulations related to solid waste.
- US-5** Require or result in the construction of new natural gas, electricity, or transportation fuel facilities or the expansion of existing facilities to adequately meet projected capacity needs, the construction of which could cause a significant environmental effect.

4.14.4 IMPACT ANALYSIS

This section analyzes the impacts associated with the implementation of the 2050 RTP/SCS. It is organized in sections to address the two main components of the 2050 RTP/SCS; regional growth/land use change and transportation system improvements. A discussion of the forecasted population, housing and employment increases are included below for each planning horizon of 2020, 2035, and 2050, to help facilitate understanding of forecasted growth. Analysis for each significance criterion will include a program-level discussion of anticipated impacts in the planning horizon years of 2020, 2035, and 2050. Potentially significant impacts are identified and mitigation measures are provided where appropriate.

PS-1 PUBLIC SERVICES

Public services contribute to the overall quality of life for the San Diego region. Adequate fire and police protection facilities are necessary to ensure public safety and protect property. Schools and libraries help build the community fabric by providing education and access to learning.

Service providers develop their own standards and processes for determining if the existing level of service is adequate and are individually responsible for making decisions to build new facilities or expand existing facilities. Service providers are also responsible for identifying and allocating funding necessary to provide services and facilities.

Regional growth and increased development anticipated to occur over the next 40 years will require adequate public services and facilities to maintain the quality of life the San Diego region currently experiences. As more people live and work in the San Diego region, there will be a corresponding increase in the need to provide public services.

Highway, transit, and active transportation (bicycle and pedestrian) improvements, along with other infrastructure projects may also generate additional need for police and fire services.

2020

Regional Growth/Land Use Change

By 2020, population within the region is expected to increase by 310,568 people; housing by 113,062 units; and employment by 118,535 jobs. Regional growth and land use change projected to occur by 2020 would result in new development and introduce new urban elements to the existing community character throughout the region. New development would be focused within existing urban areas and along transportation routes in the western third of the San Diego region. In addition, more rural areas of the region would experience new development.

When comparing existing land use as shown in Figure 4.11-1 and 2020 land use as shown in Figure 4.11-3, there are no substantial differences in the land use patterns, types, or areas of development. The figures show that the land use changes that would occur throughout the region within the next 10 years would not create substantial changes to the existing regional land use patterns or developed areas. Some locations that would experience the most extensive land use change and development by 2020 would include areas such as eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 corridor; City of San Diego coastal and bay communities south of I-8 including Ocean Beach and the Peninsula planning areas; portions of northern Santee; areas north and south of the SR 56 corridor in the San Diego planning areas of Carmel Valley, Del Mar Mesa, Pacific Highlands Ranch, and Torrey Highlands; the San Marcos area near both the SR 78 and I-15 corridors; and within unincorporated County communities such as Fallbrook, Pala-Pauma Valley, and Valley Center along the I-15 and SR 76 corridors.

Overall, the population of the region is projected to increase by 310,568 people (10 percent) between 2010 and 2020. Jurisdictions projected to have the largest absolute and relative growth in population include as follows: the City of San Diego would increase by 166,151 people (12 percent); unincorporated communities by 42,089 people (8 percent); and Chula Vista by 29,823 people (10 percent). In these areas, and other areas where population increases are projected, there higher levels of public services will be needed. To meet increased demand, additional fire and police personnel, equipment, and facilities would likely be needed to maintain response times and service ratios needed to protect the health and safety of people and to protect property. Depending on demographic shifts and the actual number and location

housing units constructed, schools and libraries may also experience facility deficiencies and would likely require new facilities to maintain current levels of service as population increases.

Throughout the San Diego region, public service providers have historically accommodated increases in demand, and the construction of new facilities or expansion of existing facilities would likely be needed to maintain current service levels for fire protection, police protection, schools, and libraries in the year 2020. However, individual service providers are responsible for identifying service deficiencies based upon unique performance measures or services standards, determining if existing facilities are adequate, and making decisions on when and where existing facilities need to be expanded or if new facilities are needed.

Construction of new facilities or expanding existing governmental facilities may result in short-term construction-related impacts to air quality, noise, and traffic, and other areas of concern. Construction-related impacts are typically controllable and can be mitigated below a level of significance through actions of the implementing agency, including adherence to existing regulations and BMPs. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or physically altered governmental facilities will always be less than significant. Therefore, this impact is significant.

Transportation Network Improvements

The transportation network improvements that would be implemented between 2010 and 2020 generally include widening and/or installation of HOV lanes, ~~and Managed Lanes, and Transit Lanes~~ along portions of I-5, I-15, I-805, SR 78, and SR 94; completion of SR 905 and SR 11; and HOV connector projects along I-805 ~~and SR 78 at I-15~~. Some key transit network improvements in place by 2020 would include increases in existing COASTER service, including extension of COASTER service to the San Diego Convention Center and Petco Park. BRT downtown express services from inland and south bay locations would be expanded as well as new BRT routes from the south bay area and along I-15. Rapid bus service would add new routes and streetcar routes would be established. Airport express routes would also be developed. Local bus service would be improved to 15 minutes in key corridors. Double-tracking of the LOSSAN rail corridor would occur to accommodate increased frequency in COASTER and other rail services that utilize this rail line. In addition, the new Mid-Coast Trolley line from Old Town to University Town Center would be constructed and the Green Trolley line would be extended to downtown San Diego.

These improvements would occur in areas that are within the jurisdiction of existing police and fire protection service areas. Although new transportation facilities would be developed within those service areas, they would require only a small increase in protection services compared to existing conditions. Based upon the current level and pattern of fire and police protection within the region, it is anticipated that transportation network improvements identified in the proposed 2050 RTP/SCS would not require additional increases of police and fire protection beyond what is identified to meet the increasing needs of regional growth. Schools and libraries would not be needed to support the transportation facilities themselves, only the increase in population as described above. Therefore, this impact is less than significant.

Conclusion

In the year 2020, regional growth, but not transportation network improvements, would result in substantial adverse physical impacts associated with the construction of new or physically altered governmental facilities. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

2035**Regional Growth/Land Use Change**

By 2035, the population of the region is expected to increase by 801,699 people; housing by 268,094 units; and employment by 312,292 jobs over existing 2010 conditions. As shown in Figure 4.11-4, regional land use and development changes are evident by 2035. Some locations that would experience the most extensive land use change and development by 2035 would include continued growth in eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 and SR 125 corridors; northeast of the SR 94 corridor in the unincorporated County planning areas of Jamul/Dulzura, Tecate, and Potrero; eastern Poway along the SR 67 corridor; the County planning area of Ramona along the SR 67 and SR 78 corridors; County planning areas of Lakeside and Alpine and the Crest, Granite Hills, Dehesa, Harbison Canyon subregion; and multiple north County planning areas along the I-15 and SR 76 corridors such as Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, and Hidden Valley.

The increased density can be seen when comparing the existing housing density to the 2035 housing density, as shown in Figures 4.13-2 and 4.13-8, respectively. Areas of increased residential density by 2035 would be apparent in some coastal cities such as Oceanside and Encinitas, and City of San Diego coastal communities. Also, increased density would occur in more inland areas along the I-8 corridor through Mission Valley, College Area, and into the City of La Mesa, as well as eastern Chula Vista along the SR 125 corridor.

In the northern portion of the region, land use changes to accommodate growth in 2035 in the form of spaced rural residential development would occur along the I-15 corridor north of Escondido toward the northern county line and in more eastern areas along I-8, SR 67, SR 78, and SR 94.

The SR 78 corridor, from Escondido to I-5, would also experience growth and resulting land use density increases of both residential and commercial/office by 2035. As shown in Figure 4.11-4, single-family residential development would increase substantially along this corridor as well as additional commercial and industrial growth. The majority of this growth would be centered around the cities of Vista, San Marcos, and Escondido. The pattern of more dense growth along this segment of the SR 78 corridor is also apparent when comparing the existing housing density to 2035 housing density (see Figures 4.13.2 and 4.13-8 in Section 4.13, Population and Housing) and existing employment density to 2035 employment density (see Figures 4.13-3 and 4.13-9).

By 2035, some regional growth would be accommodated in the more eastern, rural areas of the region. Development in these areas would be centered mostly along highway corridors, such as SR 78, SR 67, I-8 east of El Cajon, and SR 94, and generally within San Diego County community planning areas. The unincorporated portions of San Diego County are currently undergoing population growth and expansion of residential land use as indicated by a population increase of 14 percent from 2000 to 2010 as shown in Table 4.11-2. When comparing the existing land uses and 2035 land uses in Figures 4.11-1 and 4.11-4, the 2035 land use pattern would generally involve additional residential development in areas that were previously undeveloped open space or at some time in agricultural use (as discussed in Section 4.2).

Overall, regional population is projected to increase by 801,699 people (25 percent) between 2010 and 2035. Areas projected to have the largest absolute and relative growth in population include as follows: the City of San Diego, which would experience an increase of 383,087 people (28 percent); unincorporated communities by 141,269 people (28 percent); Chula Vista by 62,693 people (27 percent); and El Cajon by 39,159 (39 percent). In these areas in particular, and in other areas of the region where population increases are also projected, additional public services will be needed. As discussed in the 2020 analysis, where population increases result in increases in the density of existing urban centers,

higher levels of public services would be required, while development in rural areas would result in a need to provide public services in new service areas.

To meet increased demand for public services, new or expanded public facilities would be needed to maintain service levels/ratios. As described in the 2020 analysis above, construction of new facilities or expanding existing governmental facilities may result in short-term construction-related impacts that are typically controllable and can be mitigated below a level of significance. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or physically altered governmental facilities will always be less than significant. Therefore, this impact is significant.

Transportation Network Improvements

Some key highway improvements in place by 2035 would include ~~continued widening along portions of I-5;~~ additional HOV and Managed Lanes along portions of I-5, I-15, I-805, and SR 52; widening of portions of SR 125 and SR 67; and additional freeway and HOV connector improvements. Some important transit projects operational by 2035 would include continued increases in COASTER service, increases in SPRINTER service, increases in downtown area streetcar service, and substantial increases in rapid bus service throughout the region. The Trolley Blue Line would be extended from UTC to Mira Mesa via Sorrento Mesa and Carroll Canyon; the Orange Line would be extended to Lindbergh Field; Phase 1 of the new Mid-City to Downtown San Diego line would provide service from the Mid-City transit station via El Cajon Boulevard to Downtown; and a new line from Pacific Beach to El Cajon via Kearny Mesa, Mission Valley, and San Diego State University would be established. Double-tracking along the SPRINTER rail line through the cities of Oceanside, Vista, San Marco, and Escondido would take place by 2035 as well as continued double-tracking along the LOSSAN corridor.

By 2035, additional transportation network improvements are proposed in areas throughout the region that are currently serviced by different public service providers. However, as true in the 2020 analysis, none of the proposed transportation network improvements are anticipated to create impacts to public services that would require new or physically altered governmental facilities. Therefore, this impact is less than significant.

Conclusion

In the year 2035, regional growth, but not transportation network improvements, would result in substantial adverse physical impacts associated with the construction of new or physically altered governmental facilities. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

2050

Regional Growth/Land Use Change

By 2050, the population of the region is forecast to increase by 1,160,435 people; housing by 379,664 units; and employment by 501,958 jobs over existing conditions. As shown in Figure 4.11-5, new growth and land use changes in 2050 per the 2050 RTP/SCS are apparent throughout the region. Areas of substantial land use change and development, beyond that described in 2035, would include significant industrial development in the County's Otay planning area and San Diego Otay Mesa community surrounding the East Otay Mesa POE; throughout County planning areas located along the international border including Tecate, Potrero, Campo/Lake Morena, Boulevard, and Jacumba; throughout the Ramona and Julian planning areas in the unincorporated County; throughout other northeastern County planning areas including North Mountain, Desert, and Borrego Springs; and continued development throughout County planning areas located north and east of Escondido extending to the northern border with

Riverside County including Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, Hidden Valley, Twin Oaks Valley, and North County Metro.

Increased population density from 2010 through 2050 can be seen when comparing Figures 4.13-1 and 4.13-10, respectively. Increased density is most apparent in City of San Diego communities near the downtown area near I-5 and I-805 and along the I-8 corridor to the east.

Urban centers in the western third of the San Diego region would have most available land developed with single- and multi-family uses, commercial and office uses, and industrial uses. Consistent with the goals of the 2050 RTP/SCS, the dense growth within existing urban centers with high accessibility to transit options allows for the creation of communities that are more sustainable, walkable, transit-oriented, and compact. Substantial dense growth within the urban centers corresponds with major transportation corridors such as I-5, I-8, I-15, and I-805 and these are also alignments that would have extensive transit opportunities.

Similar to the description in the 2035 analysis, growth would continue in more eastern locations of the region, such as east of I-15 in the northern area, east of SR 67 through the middle portion of the region, and east of SR 94 in the southern area. However, by 2050, spaced rural residential development would have expanded beyond areas along existing transportation corridors and established rural communities and into areas with very minimal development at present. As shown in Figure 4.11-5, some of these areas include northeast of Escondido to SR 76, areas east of Camp Pendleton, and areas north and south of the SR 78 corridor. Large pockets of land currently used for agricultural purposes would be developed with spaced rural residential uses.

As shown in Figure 4.11-5, by 2050, a substantial pocket of industrial development would be located along the planned SR 905 corridor in conjunction with the new Otay Mesa East POE at the international border with Mexico. This is a newly developing area that is planned for mainly industrial use and is highly dependent upon the planned construction of SR 11, SR 905, and the Otay Mesa East POE.

Overall, regional population is projected to increase 36 percent between 2010 and 2050. Areas projected to have the largest absolute and relative growth in population include as follows: the City of San Diego, which would experience an increase of 571,011 people (41 percent); unincorporated communities by 189,597 people (38 percent); El Cajon by 44,592 people (45 percent); National City by 34,338 people (59 percent); Vista by 47,079 people (48 percent); Chula Vista by 92,454 people (39 percent). In these areas, and other areas where population increases are projected, additional public services will be needed, as discussed under the 2020 and 2035 analysis.

Where population increases result in increases in the density of existing urban centers, higher levels of public services would be required, while development in rural areas would result in a need to provide public services in new service areas. To meet increased demand for public services, new or expanded public facilities would be needed to maintain service levels/ratios. As described in the 2020 analysis above, construction of new facilities or expanding existing governmental facilities may result in short-term construction-related impacts that are typically controllable and can be mitigated below a level of significance. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or physically altered governmental facilities will always be less than significant. Therefore, this impact is significant.

Transportation Network Improvements

By 2050, most of the highway, transit, and active transportation (bicycle and pedestrian) improvements, along with other infrastructure projects, would be in place and operational in accordance with the proposed 2050 RTP/SCS. Some key highway improvements that would be in place by 2050 would

include widening portions of SR 52, SR 56, SR 76, SR 94, SR 125, and I-5; additional HOV lanes and Managed Lanes along segments of I-805, I-5, I-15, SR 94, SR 125, and SR 54; and freeway and HOV connector improvements. Important transit improvements in place by 2050 would include the extension of Trolley lines and increased Trolley service frequency. The Trolley Green Line would be extended to Downtown-Bayside; ~~a new Phase 2 of the line connecting San Diego State University to Downtown San Diego to~~ via El Cajon Boulevard/Mid-City would be ~~constructed~~ extended to San Diego State University; and a line from University Town Center to ~~San Ysidro Palomar Trolley Station in the South Bay~~ via Kearny Mesa, Mission Valley, Mid-City, ~~and National City,~~ and Chula Vista would be established.

These transportation network improvements would occur in areas that are currently serviced by existing public services. However, none of the proposed transportation network improvements are anticipated to require increased public services beyond what is identified for regional population growth. Therefore, this impact is less than significant.

Conclusion

In the year 2050, regional growth, but not transportation network improvements, would result in substantial adverse physical impacts associated with the construction of new or physically altered governmental facilities. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

US-1 WASTEWATER TREATMENT FACILITIES

Wastewater treatment facilities and collection systems must have adequate capacity to prevent overflows, spills, or a release of untreated or partially treated wastewater, which has the potential to pollute surface and ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and enjoyment of surface waters. Untreated wastewater often contains high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oil, and grease, and an overflow could result in the closure of beaches and other recreational areas, inundate properties, and pollute rivers and streams (SWRCB 2011).

Regional growth and land use change forecasted to occur as part of the 2050 RTP/SCS would be primarily focused in previously developed urban areas that are served by existing wastewater treatment facilities and collection systems. Increases in population and housing density would result in a corresponding increase in the volume of wastewater compared to existing conditions and would require the expansion of treatment facilities and collection systems to ensure sufficient capacity. Similarly, the proposed 2050 RTP/SCS would also increase the population and housing density in areas outside the urban core, and a corresponding increase would occur in the volume of wastewater generated by residential sources in these areas. In some areas outside of the urban core, where wastewater treatment facilities already exist, there would be a need to expand existing collection systems so adequate capacity is available to convey and treat the increased volume of wastewater. In rural areas, new development would require construction of on-site wastewater treatment systems.

Highway, transit, and active transportation (bicycle and pedestrian) improvements, along with other infrastructure projects, would include a number of toilets, sinks, and drinking fountains at transit stops and stations, which would lead to a nominal increase in the amount of wastewater generated in the region.

2020

Regional Growth/Land Use Change

By 2020, population within the region is expected to increase by 310,568 people; housing by 113,062 units; and employment by 118,535 jobs. When comparing existing land use as shown in Figure 4.11-1 and 2020 land use as shown in Figure 4.11-3, there are no substantial differences in the land use patterns, types, or areas of development. Most of these areas are already served by existing wastewater treatment facilities.

When comparing existing land use as shown in Figure 4.11-1 and 2020 land use as shown in Figure 4.11-3, there are no substantial differences in the land use patterns, types, or areas of development. The figures show that the land use changes that would occur throughout the region within the next 10 years would not create substantial changes to the existing regional land use patterns or developed areas. Some locations that would experience the most extensive land use change and development by 2020 would include areas such as eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 corridor; City of San Diego coastal and bay communities south of I-8 including Ocean Beach and the Peninsula planning areas; portions of northern Santee; areas north and south of the SR 56 corridor in the San Diego planning areas of Carmel Valley, Del Mar Mesa, Pacific Highlands Ranch, and Torrey Highlands; the San Marcos area near both the SR 78 and I-15 corridors; and within unincorporated County communities such as Fallbrook, Pala-Pauma Valley, and Valley Center along the I-15 and SR 76 corridors.

Overall, the population of the region is projected to increase by 310,568 people (10 percent) between 2010 and 2020. Areas projected to have the largest absolute and relative growth in population include as follows: the City of San Diego would increase by 166,151 people (12 percent); unincorporated communities by 42,089 people (8 percent); and Chula Vista by 29,823 people (10 percent). Urban centers where most of the growth is anticipated to occur are served by existing wastewater treatment facilities. Population growth and development will also occur in established rural communities, such as Alpine, Borrego Springs, Julian, Fallbrook, Pala-Pauma Valley, Rainbow, Ramona, and Valley Center, which are currently served by wastewater collection systems and treatment facilities. Facilities in both the urban core and rural communities may be at or near capacity, and population growth would result in a corresponding increase in the amount of wastewater generated as population increases. Wastewater collection systems and treatment facilities would need to be expanded to ensure adequate capacity to support regional growth anticipated to occur by 2020. Development in rural residential areas will require on-site wastewater treatment facilities.

Construction of new or expanded wastewater treatment facilities and collection systems would result in short-term construction-related impacts to air quality, noise, traffic, and hydrology and other environmental issues. Construction-related impacts are typically controllable and can be mitigated below a level of significance through actions of the implementing agency, including adherence to existing regulations, such as those issued and enforced through the SWRCB and RWQCB, and BMPs. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or expanded wastewater treatment facilities will always be less than significant. Therefore, this impact is significant.

Transportation Network Improvements

The transportation network improvements that would be implemented between 2010 and 2020 generally include widening and/or installation of HOV lanes, ~~and~~ Managed Lanes, and Transit Lanes along portions of I-5, I-15, I-805, SR 78, and SR 94; completion of SR 905 and SR 11; and HOV connector projects along I-805 and SR 78 at I-15. Some key transit network improvements in place by 2020 would include

increases in existing COASTER service, including extension of COASTER service to the San Diego Convention Center and Petco Park. BRT downtown express services from inland and south bay locations would be expanded as well as new BRT routes from the south bay area and along I-15. Rapid bus service would add new routes and streetcar routes would be established. Airport express routes would also be developed. Local bus service would be improved to 15 minutes in key corridors. Double-tracking of the LOSSAN rail corridor would occur to accommodate increased frequency in COASTER and other rail services that utilize this rail line. In addition, the new Mid-Coast Trolley line from Old Town to University Town Center would be constructed and the Green Trolley line would be extended to downtown San Diego.

To support these projects, toilets, sinks, and drains would be required, and would generate nominal amounts of additional wastewater. In some cases, only new laterals or sewer lines would need to be constructed to convey wastewater to the collection system for treatment. However, transportation network improvements included in the proposed 2050 RTP/SCS would not result in a substantial increase in the amount of wastewater generated such that new or expanded wastewater treatment facilities would be needed. Therefore, this impact is less than significant.

Conclusion

In the year 2020, regional growth, but not transportation network improvements, would result in construction of new wastewater facilities or expansion of existing wastewater facilities, the construction of which could cause significant environmental effects. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

2035

Regional Growth/Land Use Change

By 2035, the population of the region is expected to increase by 801,699 people; housing by 268,094 units; and employment by 312,292 jobs over existing 2010 conditions. As shown in Figure 4.11-4, regional land use and development changes are evident by 2035. Some locations that would experience the most extensive land use change and development by 2035 would include continued growth in eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 and SR 125 corridors; northeast of the SR 94 corridor in the unincorporated County planning areas of Jamul/Dulzura, Tecate, and Potrero; eastern Poway along the SR 67 corridor; the County planning area of Ramona along the SR 67 and SR 78 corridors; County planning areas of Lakeside and Alpine and the Crest, Granite Hills, Dehesa, Harbison Canyon subregion; and multiple north County planning areas along the I-15 and SR 76 corridors such as Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, and Hidden Valley.

The increased density can be seen when comparing the existing housing density to the 2035 housing density, as shown in Figures 4.13-2 and 4.13-8, respectively. Areas of increased residential density by 2035 would be apparent in some coastal cities such as Oceanside and Encinitas, and City of San Diego coastal communities. Also, increased density would occur in more inland areas along the I-8 corridor through Mission Valley, College Area, and into the City of La Mesa, as well as eastern Chula Vista along the SR 125 corridor.

In the northern portion of the region, land use changes to accommodate growth in 2035 in the form of spaced rural residential development would occur along the I-15 corridor north of Escondido toward the northern county line and in more eastern areas along I-8, SR 67, SR 78, and SR 94.

The SR 78 corridor, from Escondido to I-5, would also experience growth and resulting land use density increases of both residential and commercial/office by 2035. As shown in Figure 4.11-4, single-family

residential development would increase substantially along this corridor as well as additional commercial and industrial growth. The majority of this growth would be centered around the cities of Vista, San Marcos, and Escondido. The pattern of more dense growth along this segment of the SR 78 corridor is also apparent when comparing the existing housing density to 2035 housing density (see Figures 4.13.2 and 4.13-8 in Section 4.13, Population and Housing)

By 2035, some regional growth would be accommodated in the more eastern, rural areas of the region. Development in these areas would be centered mostly along highway corridors, such as SR 78, SR 67, I-8 east of El Cajon, and SR 94, and generally within San Diego County community planning areas. The unincorporated portions of San Diego County are currently undergoing population growth and expansion of residential land use as indicated by a population increase of 14 percent from 2000 to 2010 as shown in Table 4.11-2. When comparing the existing land uses and 2035 land uses in Figures 4.11-1 and 4.11-4, the 2035 land use pattern would generally involve additional residential development in areas that were previously undeveloped open space or at some time in agricultural use (as discussed in Section 4.2).

Overall, regional population is projected to increase by 801,699 people (25 percent) between 2010 and 2035. Areas projected to have the largest absolute and relative growth in population include as follows: the City of San Diego, which would experience an increase of 383,087 people (28 percent); unincorporated communities by 141,269 people (28 percent); Chula Vista by 62,693 people (27 percent); and El Cajon by 39,159 (39 percent).

Urban centers where most of the growth is anticipated to occur are served by existing wastewater treatment facilities. Population growth and development will also occur in established rural communities, such as Alpine, Borrego Springs, Julian, Fallbrook, Pala-Pauma Valley, Rainbow, Ramona, and Valley Center, which are currently served by wastewater collection systems and treatment facilities. Facilities in both the urban core and rural communities may be at or near capacity, and population growth would result in a corresponding increase in the amount of wastewater generated as population increases. Wastewater collection systems and treatment facilities would need to be expanded to ensure adequate capacity to support regional growth anticipated to occur by 2035. Development in rural residential areas will require onsite wastewater treatment facilities.

As described in the 2020 analysis, construction of new or expanded wastewater treatment facilities and collection systems would result in short-term construction-related impacts, which can typically be controllable and mitigated below a level of significance. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or expanded wastewater treatment facilities will always be less than significant. Therefore, this impact is significant.

Transportation Network Improvements

Some key highway improvements in place by 2035 would include ~~continued widening along portions of I-5;~~ additional HOV and Managed Lanes along portions of I-5, I-15, I-805, and SR 52; widening of portions of SR 125 and SR 67; and additional freeway and HOV connector improvements. Some important transit projects operational by 2035 would include continued increases in COASTER service, increases in SPRINTER service, increases in downtown area streetcar service, and substantial increases in rapid bus service throughout the region. The Trolley Blue Line would be extended from UTC to Mira Mesa via Sorrento Mesa and Carroll Canyon; the Orange Line would be extended to Lindbergh Field; Phase 1 of the new Mid-City to Downtown San Diego line would provide service from the Mid-City transit station via El Cajon Boulevard to Downtown; and a new line from Pacific Beach to El Cajon via Kearny Mesa, Mission Valley, and San Diego State University would be established. Double-tracking along the SPRINTER rail line through the cities of Oceanside, Vista, San Marco, and Escondido would take place by 2035 as well as continued double-tracking along the LOSSAN corridor.

To support these projects, toilets, sinks, and drains would be required, and would generate nominal amounts of additional wastewater. In some cases, only new laterals or sewer lines would need to be constructed to convey wastewater to the collection system for treatment. However, transportation network improvements included in the proposed 2050 RTP/SCS would not result in a substantial increase in the amount of wastewater generated such that new or expanded wastewater treatment facilities would be needed. Therefore, this impact is less than significant.

Conclusion

In the year 2035, regional growth, but not transportation network improvements, would result in construction of new wastewater facilities or expansion of existing wastewater facilities, the construction of which could cause significant environmental effects. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

2050

Regional Growth/Land Use Change

By 2050, the population of the region is forecast to increase by 1,160,435 people; housing by 379,664 units; and employment by 501,958 jobs over existing conditions. As shown in Figure 4.11-5, new growth and land use changes in 2050 per the 2050 RTP/SCS are apparent throughout the region. Areas of substantial land use change and development, beyond that described in 2035 would include significant industrial development in the County's Otay planning area and San Diego Otay Mesa community surrounding the East Otay Mesa POE; throughout County planning areas located along the international border including Tecate, Potrero, Campo/Lake Morena, Boulevard, and Jacumba; throughout the Ramona and Julian planning areas in the unincorporated County; throughout other northeastern County planning areas including North Mountain, Desert, and Borrego Springs; and continued development throughout County planning areas located north and east of Escondido extending to the northern border with Riverside County including Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, Hidden Valley, Twin Oaks Valley, and North County Metro

Increased population density from 2010 through 2050 can be seen when comparing Figures 4.13-1 and 4.13-10, respectively. Increased density is most apparent in City of San Diego communities near the downtown area near I-5 and I-805 and along the I-8 corridor to the east.

Urban centers in the western third of the San Diego region would have most available land developed with single- and multi-family uses, commercial and office uses, and industrial uses. Consistent with the goals of the 2050 RTP/SCS, the dense growth within existing urban centers with high accessibility to transit options allows for the creation of communities that are more sustainable, walkable, transit-oriented, and compact. Substantial dense growth within the urban centers corresponds with major transportation corridors such as I-5, I-8, I-15, and I-805 and these are also alignments that would have extensive transit opportunities.

In these areas population growth and development would already be served by existing wastewater collection systems and treatment facilities. As true in the 2020 and 2035 analyses above, additional population growth and increased density would generate a corresponding increase in the volume of wastewater compared to existing conditions. Wastewater collection systems and treatment facilities would need to be expanded, or new facilities would need to be constructed, in order to ensure capacity.

Similar to the description in the 2035 analysis, growth would continue in more eastern locations of the region, such as east of I-15 in the northern area, east of SR 67 through the middle portion of the region, and east of SR 94 in the southern area. However, by 2050, spaced rural residential development would have expanded beyond areas along existing transportation corridors and established rural communities

and into areas with very minimal development at present. As shown in Figure 4.11-5, some of these areas include northeast of Escondido to SR 76, areas east of Camp Pendleton, and areas north and south of the SR 78 corridor. Large pockets of land currently used for agricultural purposes would be developed with spaced rural residential uses

As shown in Figure 4.11-5, by 2050, a substantial pocket of industrial development would be located along the planned SR 905 corridor in conjunction with the new Otay Mesa East POE at the international border with Mexico. This is a newly developing area that is planned for mainly industrial use and is highly dependent upon the planned construction of SR 11, SR 905, and the Otay Mesa East POE.

Population growth and development occurring in established rural communities, such as Borrego Springs, Julian, Fallbrook, Pauma Valley, Rainbow, Ramona, and Valley Center, which are currently served by wastewater collection systems and treatment facilities, may be at or near capacity and population growth would result in a corresponding increase in the amount of wastewater generated as population increases. Wastewater collection systems and treatment facilities in these areas would need to be expanded to ensure adequate capacity to support regional growth anticipated to occur by 2020. Development in rural residential areas will require onsite wastewater treatment facilities.

As described in the 2020 analysis, construction of new or expanded wastewater treatment facilities and collection systems would result in short-term construction-related impacts, which can typically be controllable and mitigated below a level of significance. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or expanded wastewater treatment facilities will always be less than significant. Therefore, this impact is significant.

Transportation Network Improvements

By 2050, most of the highway, transit, and active transportation (bicycle and pedestrian) improvements, along with other infrastructure projects, would be in place and operational in accordance with the proposed 2050 RTP/SCS. Some key highway improvements that would be in place by 2050 would include widening portions of SR 52, SR 56, SR 76, SR 94, SR 125, and I-5; additional HOV lanes and Managed Lanes along segments of I-805, I-5, I-15, SR 94, SR 125, and SR 54; and freeway and HOV connector improvements. Important transit improvements in place by 2050 would include the extension of Trolley lines and increased Trolley service frequency. The Trolley Green Line would be extended to Downtown-Bayside; ~~a new Phase 2 of the line connecting San Diego State University to Downtown San Diego~~ via El Cajon Boulevard/Mid-City would be constructed ~~extended to San Diego State University;~~ and a line from University Town Center to ~~San Ysidro Palomar Trolley Station in the South Bay~~ via Kearny Mesa, Mission Valley, Mid-City, and National City, and Chula Vista would be established.

To support these projects, toilets, sinks, and drains would be required, and would generate nominal amounts of additional wastewater. In some cases, only new laterals or sewer lines would need to be constructed to convey wastewater to the collection system for treatment. However, transportation network improvements included in the proposed 2050 RTP/SCS would not result in a substantial increase in the amount of wastewater generated such that new or expanded wastewater treatment facilities would be needed. Therefore, this impact is less than significant.

Conclusion

In the year 2050, regional growth, but not transportation network improvements, would result in construction of new wastewater facilities or expansion of existing wastewater facilities, the construction of which could cause significant environmental effects. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

US-2 STORM WATER DRAINAGE FACILITIES

Regional Growth/Land Use Change

Storm water drainage facilities are necessary to drain excess water from paved streets, parking lots, sidewalks, and roofs to prevent flooding after rain events. Ensuring adequate capacity and design of storm water drainage facilities allows for the safe management of large volumes of water and conveyance of runoff to a point of disposal.

Growth and development and transportation network improvements anticipated to occur as part of the 2050 RTP/SCS would be primarily focused in previously developed urban areas. Urban areas have limited amounts of vacant land where rainwater and urban runoff can percolate into the soil, and new infill development in urban areas would not result in a substantial increase in impervious surfaces. In addition, development in urban areas would be served by existing storm drain collection systems. A limited number of new developments in urban areas would convert undeveloped land to impermeable surfaces, resulting in an increase in storm water runoff, which could potentially exceed the capacity of existing storm water drainage facilities.

Development outside of the urban core would be more likely to convert undeveloped land to impermeable surfaces from the development of rooftops, parking lots, roads, and driveways, and would result in an increase in storm water runoff. In areas outside of the urban core, there are not typically storm water drainage systems, and increases in the amount of impermeable surfaces could result in volumes of runoff requiring the construction of new or expansion of existing facilities.

Any increases in storm water runoff that would occur as a result of regional growth would not only require storm water drainage facilities with sufficient capacity to drain excess water, but capacity would also be required downstream in channels and other drainage outlets.

2020

Regional Growth/Land Use

By 2020, population within the region is expected to increase by 310,568 people; housing by 113,062 units; and employment by 118,535 jobs. When comparing existing land use as shown in Figure 4.11-1 and 2020 land use as shown in Figure 4.11-3, there are no substantial differences in the land use patterns, types, or areas of development. Some locations that would experience the most extensive land use change and development by 2020 would include areas such as eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 corridor; City of San Diego coastal and bay communities south of I-8 including Ocean Beach and the Peninsula planning areas; portions of northern Santee; areas north and south of the SR 56 corridor in the San Diego planning areas of Carmel Valley, Del Mar Mesa, Pacific Highlands Ranch, and Torrey Highlands; the San Marcos area near both the SR 78 and I-15 corridors; and within unincorporated County communities such as Fallbrook, Pala-Pauma Valley, and Valley Center along the I-15 and SR 76 corridors.

Regional growth and land use change would be located in urban areas that are predominately impermeable surfaces and would not significantly increase the amount of runoff. Development that increases impervious area would result in increased storm water flows in volume and/or velocity. Any increase in volume and/or velocity of storm water flow increases the potential for flooding, scouring, erosion, and other drainage pattern alterations.

However, development associated with the 2050 RTP/SCS would have to comply with all existing regulations pertaining to drainage patterns (i.e., the local SUSMP and HMP). These regulations include

the requirement that postproject storm water flows match the preproject flows for Priority Development Projects. When there is an increase in impervious area, this requirement would generally be achieved through the implementation of the appropriate BMPs described in the local SUSMP and HMP, and the County LID Handbook. Furthermore, drainage systems would be upgraded and increased in size in areas determined to have inadequate conveyance capacity relative to new impervious surface to reduce impacts related to storm water runoff. Hydrologic impacts resulting from construction would be primarily addressed through compliance with the Construction General Permit as discussed in Section 4.10.4.

In addition, regulations (Hydromodification under RWQCB Order R9-2007-0001) require that priority development projects maintain preproject hydrology under postconstruction operation. This means that additional runoff volumes and peak flow discharges from impervious areas must be attenuated to preproject levels in order to maintain hydrological conditions and not exceed storm water conveyance capacities. One of the methods for achieving this is through the implementation of LID. LID is an integrated site design methodology that uses small-scale detention and retention to minimize pollutants conveyed by runoff and to mimic preproject site hydrological conditions. The effectiveness of the regulations to reduce the impacts of development depends upon the implementation of the requirements. When projects are out of compliance with all existing regulations and the BMPs are not properly implemented, impacts are likely to occur. By incorporating these design standards for the protection of public life and property into the 2050 RTP/SCS projects, surface runoff patterns and flows would be adequately controlled and impacts to drainage patterns would be avoided.

Although this would reduce the need for storm water drainage facilities needed as a result of regional growth and land use change by the year 2020, the construction of new storm water drainage facilities or expansion of existing storm water drainage facilities would still be required to ensure adequate capacity for the conveyance of storm water.

Construction of new storm water drainage facilities would result in short-term construction-related impacts to air quality, noise, traffic, and hydrology and other environmental issues. Construction-related impacts are typically controllable and can be mitigated below a level of significance through actions of the implementing agency, including adherence to existing regulations and BMPs. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or expanded storm water drainage facilities will always be less than significant. Therefore, this impact is significant.

Transportation Network Improvements

The transportation network improvements that would be implemented between 2010 and 2020 generally include widening and/or installation of HOV lanes, ~~and~~ Managed Lanes, ~~and~~ Transit Lanes along portions of I-5, I-15, I-805, SR 78, and SR 94; completion of SR 905 and SR 11; and HOV connector projects along I-805 ~~and~~ SR 78 at I-15. Some key transit network improvements in place by 2020 would include increases in existing COASTER service, including extension of COASTER service to the San Diego Convention Center and Petco Park. BRT downtown express services from inland and south bay locations would be expanded as well as new BRT routes from the south bay area and along I-15. Rapid bus service would add new routes and streetcar routes would be established. Airport express routes would also be developed. Local bus service would be improved to 15 minutes in key corridors. Double-tracking of the LOSSAN rail corridor would occur to accommodate increased frequency in COASTER and other rail services that utilize this rail line. In addition, the new Mid-Coast Trolley line from Old Town to University Town Center would be constructed and the Green Trolley line would be extended to downtown San Diego.

While most of the transportation improvements would occur in already urbanized areas, some improvements would convert vacant land to impervious surfaces, resulting increase storm water flow

volume and/or velocity. As described in Section 4.10.4, engineering standards, including the Caltrans Highway Design Manual and County requirements, exist for properly controlling and conveying surface runoff and surface waters when drainage modifications are necessary for project implementation. In addition, regulations (Hydromodification under RWQCB Order R9-2007-0001) require that priority development projects maintain preproject hydrology under postconstruction operation. This means that additional runoff volumes and peak flow discharges from impervious areas, such as freeways, must be attenuated to preproject levels in order to maintain hydrological conditions and not exceed storm water conveyance capacities. One of the methods for achieving this is through the implementation of LID. LID is an integrated site design methodology that uses small-scale detention and retention to minimize pollutants conveyed by runoff and to mimic preproject site hydrological conditions.

However, storm water drainage facilities would be required to support the transportation network improvements planned to be completed by the year 2020, and any increase in the volume of storm water generated would require storm water drainage facilities with sufficient capacity downstream in channels and other drainage outlets.

Construction of new storm water drainage facilities would result in short-term construction-related impacts to air quality, noise, traffic, and hydrology and other environmental issues. Construction-related impacts are typically controllable and can be mitigated below a level of significance through actions of the implementing agency, including adherence to existing regulations and BMPs. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or expanded storm water drainage facilities will always be less than significant. Therefore, this is a significant impact.

Conclusion

In the year 2020, both regional growth and transportation network improvements would result in construction of new storm water drainage facilities or expansion of existing storm water drainage facilities, the construction of which could cause significant environmental effects. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

2035

Regional Growth/Land Use

From 2020 to 2035, the population of the region is forecasted to increase by 491,131 people; housing by 155,032 units; and employment by 193,757 jobs. By 2035, the population of the region is expected to increase by 801,699 people; housing by 268,094 units; and employment by 312,292 jobs over existing 2010 conditions. As shown in Figure 4.11-4, regional land use and development changes are evident by 2035. Some locations that would experience the most extensive land use change and development by 2035 would include continued growth in eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 and SR 125 corridors; northeast of the SR 94 corridor in the unincorporated County planning areas of Jamul/Dulzura, Tecate, and Potrero; eastern Poway along the SR 67 corridor; the County planning area of Ramona along the SR 67 and SR 78 corridors; County planning areas of Lakeside and Alpine and the Crest, Granite Hills, Dehesa, Harbison Canyon subregion; and multiple north County planning areas along the I-15 and SR 76 corridors such as Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, and Hidden Valley.

The increased density can be seen when comparing the existing housing density to the 2035 housing density, as shown in Figures 4.13-2 and 4.13-8, respectively. Areas of increased residential density by 2035 would be apparent in some coastal cities such as Oceanside and Encinitas, and City of San Diego coastal communities. Also, increased density would occur in more inland areas along the I-8 corridor

through Mission Valley, College Area, and into the City of La Mesa, as well as eastern Chula Vista along the SR 125 corridor.

In the northern portion of the region, land use changes to accommodate growth in 2035 in the form of spaced rural residential development would occur along the I-15 corridor north of Escondido toward the northern county line and in more eastern areas along I-8, SR 67, SR 78, and SR 94. The SR 78 corridor, from Escondido to I-5, would experience growth and resulting land use density increases of both residential and commercial/office. As shown in Figure 4.11-4, single-family residential development would increase substantially along this corridor as well as additional commercial and industrial growth. The majority of this growth would be centered around the cities of Vista, San Marcos, and Escondido. The pattern of more dense growth along this segment of the SR 78 corridor is also apparent when comparing the existing housing density to 2035 housing density (see Figures 4.13.2 and 4.13-8 in Section 4.13, Population and Housing) and existing employment density to 2035 employment density (see Figures 4.13-3 and 4.13-9).

By 2035, some regional growth would be accommodated in the more eastern, rural areas of the region. Development in these areas would be centered mostly along highway corridors, such as SR 78, SR 67, I-8 east of El Cajon, and SR 94, and generally within San Diego County community planning areas. The unincorporated portions of San Diego County are currently undergoing population growth and expansion of residential land use as indicated by a population increase of 14 percent from 2000 to 2010 as shown in Table 4.11-2. When comparing the existing land uses and 2035 land uses in Figures 4.11-1 and 4.11-4, the 2035 land use pattern would generally involve additional residential development in areas that were previously undeveloped open space or at some time in agricultural use (as discussed in Section 4.2).

As discussed in the 2020 analysis, regional growth and development would result in the conversion of vacant land to impervious surfaces. Incorporating all of the design standards and maintaining compliance with all applicable regulations, as described in Section 4.10, would reduce the need for storm water drainage facilities needed as a result of regional growth and land use change by the year 2020. However, the construction of new storm water drainage facilities or expansion of existing storm water drainage facilities would still be required to ensure adequate capacity for the conveyance of storm water in the region. Construction of new storm water drainage facilities would result in short-term construction-related impacts that are typically controllable and can be mitigated. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or expanded storm water drainage facilities will always be less than significant. Therefore, this is a significant impact.

Transportation Network Improvements

Some key highway improvements in place by 2035 would include ~~continued widening along portions of I-5;~~ additional HOV and Managed Lanes along portions of I-5, I-15, I-805, and SR 52; widening of portions of SR 125 and SR 67; and additional freeway and HOV connector improvements. Some important transit projects operational by 2035 would include continued increases in COASTER service, increases in SPRINTER service, increases in downtown area streetcar service, and substantial increases in rapid bus service throughout the region. The Trolley Blue Line would be extended from UTC to Mira Mesa via Sorrento Mesa and Carroll Canyon; the Orange Line would be extended to Lindbergh Field; Phase 1 of the new Mid-City to Downtown San Diego line would provide service from the Mid-City transit station via El Cajon Boulevard to Downtown; and a new line from Pacific Beach to El Cajon via Kearny Mesa, Mission Valley, and San Diego State University would be established. Double-tracking along the SPRINTER rail line through the cities of Oceanside, Vista, San Marco, and Escondido would take place by 2035 as well as continued double-tracking along the LOSSAN corridor.

As discussed in the 2020 analysis, incorporating all of the design standards and maintaining compliance with all applicable regulations, as described in Section 4.10, would adequately control storm water flows. However, storm water drainage facilities would still be required to support the transportation network improvements. Construction of new storm water drainage facilities would result in short-term construction-related impacts that are typically controllable and can be mitigated. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or expanded storm water drainage facilities will always be less than significant. Therefore, this is a significant impact.

Conclusion

In the year 2035, both regional growth and transportation network improvements would result in construction of new storm water drainage facilities or expansion of existing storm water drainage facilities, the construction of which could cause significant environmental effects. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

2050

Regional Growth/Land Use

By 2050, the population of the region is forecast to increase by 1,160,435 people; housing by 379,664 units; and employment by 501,958 jobs over existing conditions. As shown in Figure 4.11-5, new growth and land use changes in 2050 per the 2050 RTP/SCS are apparent throughout the region. Areas of substantial land use change and development, beyond that described in 2035 would include significant industrial development in the County's Otay planning area and San Diego Otay Mesa community surrounding the East Otay Mesa POE; throughout County planning areas located along the international border including Tecate, Potrero, Campo/Lake Morena, Boulevard, and Jacumba; throughout the Ramona and Julian planning areas in the unincorporated County; throughout other northeastern County planning areas including North Mountain, Desert, and Borrego Springs; and continued development throughout County planning areas located north and east of Escondido extending to the northern border with Riverside County including Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, Hidden Valley, Twin Oaks Valley, and North County Metro.

Increased population density from 2010 through 2050 can be seen when comparing Figures 4.13-1 and 4.13-10, respectively. Increased density is most apparent in City of San Diego communities near the downtown area near I-5 and I-805 and along the I-8 corridor to the east.

Urban centers in the western third of the San Diego region would have most available land developed with single- and multi-family uses, commercial and office uses, and industrial uses. Consistent with the goals of the 2050 RTP/SCS, the dense growth within existing urban centers with high accessibility to transit options allows for the creation of communities that are more sustainable, walkable, transit-oriented, and compact. Substantial dense growth within the urban centers corresponds with major transportation corridors such as I-5, I-8, I-15, and I-805 and these are also alignments that would have extensive transit opportunities.

Similar to the description in the 2035 analysis, growth would continue in more eastern locations of the region, such as east of I-15 in the northern area, east of SR 67 through the middle portion of the region, and east of SR 94 in the southern area. However, by 2050, spaced rural residential development would have expanded beyond areas along existing transportation corridors and established rural communities and into areas with very minimal development at present. As shown in Figure 4.11-5, some of these areas include northeast of Escondido to SR 76, areas east of Camp Pendleton, and areas north and south of the SR 78 corridor.

As shown in Figure 4.11-5, by 2050, a substantial pocket of industrial development would be located along the planned SR 905 corridor in conjunction with the new Otay Mesa East POE at the international border with Mexico. This is a newly developing area that is planned for mainly industrial use and is highly dependent upon the planned construction of SR 11, SR 905, and the Otay Mesa East POE.

As development occurs outside of urban centers and increasingly in rural residential settings, regional growth and development occurring by 2050 would convert would result in the conversion of vacant land to impervious surfaces. Incorporating all of the design standards and maintaining compliance with all applicable regulations, as described in Section 4.10, would reduce the need for storm water drainage facilities. However, the construction of new storm water drainage facilities or expansion of existing storm water drainage facilities would still be required to ensure adequate capacity for the conveyance of storm water in the region. Construction of new storm water drainage facilities would result in short-term construction-related impacts that are typically controllable and can be mitigated. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or expanded storm water drainage facilities will always be less than significant. Therefore, this is a significant impact.

Transportation Network Improvements

By 2050, most of the highway, transit, and active transportation (bicycle and pedestrian) improvements, along with other infrastructure projects, would be in place and operational in accordance with the proposed 2050 RTP/SCS. Some key highway improvements that would be in place by 2050 would include widening portions of SR 52, SR 56, SR 76, SR 94, SR 125, and I-5; additional HOV lanes and Managed Lanes along segments of I-805, I-5, I-15, SR 94, SR 125, and SR 54; and freeway and HOV connector improvements. Important transit improvements in place by 2050 would include the extension of Trolley lines and increased Trolley service frequency. The Trolley Green Line would be extended to Downtown-Bayside; ~~a new Phase 2 of the line connecting San Diego State University to Downtown San Diego via El Cajon Boulevard/Mid-City would be constructed~~ extended to San Diego State University; and a line from University Town Center to ~~San Ysidro Palomar Trolley Station in the South Bay via Kearny Mesa, Mission Valley, Mid-City, and National City, and Chula Vista~~ would be established.

As discussed in the 2020 analysis, incorporating all of the design standards and maintaining compliance with all applicable regulations, as described in Section 4.10, would adequately control storm water flows. However, storm water drainage facilities would still be required to support the transportation network improvements. Construction of new storm water drainage facilities would result in short-term construction-related impacts that are typically controllable and can be mitigated. Because details about the timing, location, and project-specific information are not known, there is no assurance that impacts from the construction of new or expanded storm water drainage facilities will always be less than significant. Therefore, this is a significant impact.

Conclusion

In the year 2050, both regional growth and transportation network improvements would result in construction of new storm water drainage facilities or expansion of existing storm water drainage facilities, the construction of which could cause significant environmental effects. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

US-3 SOLID WASTE DISPOSAL

Solid waste management has been recognized as an issue of regional importance in San Diego because of urban encroachment, environmental concerns, and limited capacity of landfills. There are also economic

and regulatory barriers to facility expansions and replacement, including environmental review, permit approval, and the increased cost of developing and operating waste management facilities.

The capacity of existing landfills is limited by the maximum volume of solid waste that can physically be held and by the rate at which disposal occurs. Exceeding the designed and permitted maximum volume would potentially be a threat to health, safety, and the environment. The throughput of landfills ensures that solid waste is disposed of in a sanitary and efficient manner, containing potential environmental impacts, limiting the land area required for the disposal of solid waste in the region, and controlling the amount of car and truck traffic to and from landfills. Due to the finite capacity of landfills and the continuing need to dispose of solid waste, available capacity will gradually decrease over time, even in the absence of any population growth, and will eventually reach maximum capacity.

Implementation of the 2050 RTP/SCS would result in an increase in population, housing, and employment over the next 40 years and would increase the total amount of solid waste generated. The amount of waste generated per person or per employee would not be affected by regional growth, but additional people living and working in the region would add incrementally more amounts of solid waste. Increasing the total amount of solid waste that requires disposal in landfills would cause landfills to reach maximum permitted capacity quicker.

Source reduction, recycling, processing, and transformation facilities would continue to decrease the amount of solid waste that is disposed of in landfills. However, the region will be served by landfills with insufficient permitted capacity to accommodate the solid waste disposal needs of regional growth and development over the next 40 years if no new landfill sites are identified and permitted.

Construction of the transportation network improvement projects identified in the 2050 RTP/SCS could generate solid waste as a result of demolition, grading, excavation, and other construction activities. The San Diego region has a number of processing and disposal facilities specifically for the disposal of C&D waste and inert debris that could be generated by the transportation network improvements in the 2050 RTP/SCS. C&D waste processing and disposal facilities would prevent waste generated from construction from diminishing the available capacity at the region's landfills that dispose of municipal solid waste.

Highways, roads, transit, and other transportation network improvements would not generate significant amounts of solid waste beyond construction since transportation facilities would not solely generate solid waste. A small amount of waste would be generated from litter and at transit stations with public trash cans, but this would not significantly increase the total amount of solid waste in the region.

2020

Regional Growth/Land Use Change

By 2020, population within the region is expected to increase by 310,568 people; housing by 113,062 units; and employment by 118,535 jobs. When comparing existing land use as shown in Figure 4.11-1 and 2020 land use as shown in Figure 4.11-3, there are no substantial differences in the land use patterns, types, or areas of development. Some locations that would experience the most extensive land use change and development by 2020 would include areas such as eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 corridor; City of San Diego coastal and bay communities south of I-8 including Ocean Beach and the Peninsula planning areas; portions of northern Santee; areas north and south of the SR 56 corridor in the San Diego planning areas of Carmel Valley, Del Mar Mesa, Pacific Highlands Ranch, and Torrey Highlands; the San Marcos area near both the SR 78 and I-15 corridors; and within unincorporated County communities such as Fallbrook, Pala-Pauma Valley, and Valley Center along the I-15 and SR 76 corridors.

Regional growth and land use change forecasted to occur as part of the 2050 RTP/SCS would result in an increase in the total amount of solid waste generated in the San Diego region by 2020. However, the region's solid waste generation rate would not change significantly over this time.

The West Miramar Sanitary Landfill currently has 18.8 percent capacity remaining and is estimated to close in 2017, which would significantly reduce the available capacity at landfills in the region. The Borrego Landfill, Otay Landfill, and Sycamore Landfill have a limited remaining capacity and are estimated to close beyond the year 2020, but these landfills would not have sufficient permitted capacity to serve the region's needs through 2020.

Increasing amounts of solid waste would be collected through the existing collection system and would continue to be processed at the region's transfer stations and materials recovery facilities. Continuing local and regional programs and policies that promote source reduction, recycling and composting, and the operation of transfer stations and materials recovery facilities, would maintain or increase the diversion rate, reduce the percentage of solid waste that is ultimately disposed of in a landfill, and reduce the demand for new landfills.

However, increases in the volume of waste that would result from population growth and development by 2020 would significantly increase the volume of solid waste disposed of in landfills and reduce the remaining capacity in landfills that serve the region.

The proposed Gregory Canyon Landfill would have an average daily throughput of 3,200 tons per day and would receive up to 1,000,000 tons of municipal solid waste year. The total site capacity is 59,000,000 cubic yards and has an estimated closing date of 2040. Gregory Canyon is currently seeking approval of a Solid Waste Facility Permit to operate the landfill. Gregory Canyon would increase landfill capacity in the region and provide sufficient additional capacity to serve the region through 2020.

The IWMA requires regular monitoring of solid waste disposal needs, assessment of available landfill capacity, a projection of landfill capacity needed in the future, and the identification of potential new landfill sites. Although this establishes a process to identify future needs and prevent the region from being served by landfills with insufficient permitted capacity, it would not guarantee that a landfill with sufficient capacity is permitted and operational by the time existing landfills reach capacity. Therefore, this solid waste disposal impact is significant.

Transportation Network Improvements

The transportation network improvements that would be implemented between 2010 and 2020 generally include widening and/or installation of HOV lanes, ~~and Managed Lanes, and Transit Lanes~~ along portions of I-5, I-15, I-805, SR 78, and SR 94; completion of SR 905 and SR 11; and HOV connector projects along I-805 ~~and SR 78 at I-15~~. Some key transit network improvements in place by 2020 would include increases in existing COASTER service, including extension of COASTER service to the San Diego Convention Center and Petco Park. BRT downtown express services from inland and south bay locations would be expanded as well as new BRT routes from the south bay area and along I-15. Rapid bus service would add new routes and streetcar routes would be established. Airport express routes would also be developed. Local bus service would be improved to 15 minutes in key corridors. Double-tracking of the LOSSAN rail corridor would occur to accommodate increased frequency in COASTER and other rail services that utilize this rail line. In addition, the new Mid-Coast Trolley line from Old Town to University Town Center would be constructed and the Green Trolley line would be extended to downtown San Diego.

Transportation network improvements identified in the 2050 RTP/SCS would generate waste from the demolition, grading, and excavation necessary for construction. Waste created from construction activities

would be processed in C&D waste and inert debris facilities that process construction waste separately from municipal solid waste, and would not significantly reduce the available capacity at the region's landfills. This impact to solid waste disposal is less than significant.

Conclusion

If no new landfills are permitted by 2020, the region would be served by landfills with insufficient permitted capacity to meet the solid waste disposal needs of regional growth forecasted by the 2050 RTP/SCS. Therefore, this is a significant impact; mitigation measures are described in Section 4.14.5.

2035

Regional Growth/Land Use Change

By 2035, the population of the region is expected to increase by 801,699 people; housing by 268,094 units; and employment by 312,292 jobs over existing 2010 conditions. As shown in Figure 4.11-4, regional land use and development changes are evident by 2035. Some locations that would experience the most extensive land use change and development by 2035 would include continued growth in eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 and SR 125 corridors; northeast of the SR 94 corridor in the unincorporated County planning areas of Jamul/Dulzura, Tecate, and Potrero; eastern Poway along the SR 67 corridor; the County planning area of Ramona along the SR 67 and SR 78 corridors; County planning areas of Lakeside and Alpine and the Crest, Granite Hills, Dehesa, Harbison Canyon subregion; and multiple north County planning areas along the I-15 and SR 76 corridors such as Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, and Hidden Valley.

The increased density can be seen when comparing the existing housing density to the 2035 housing density, as shown in Figures 4.13-2 and 4.13-8, respectively. Areas of increased residential density by 2035 would be apparent in some coastal cities such as Oceanside and Encinitas, and City of San Diego coastal communities. Also, increased density would occur in more inland areas along the I-8 corridor through Mission Valley, College Area, and into the City of La Mesa, as well as eastern Chula Vista along the SR 125 corridor.

In the northern portion of the region, land use changes to accommodate growth in 2035 in the form of spaced rural residential development would occur along the I-15 corridor north of Escondido toward the northern county line and in more eastern areas along I-8, SR 67, SR 78, and SR 94.

The SR 78 corridor, from Escondido to I-5, would also experience growth and resulting land use density increases of both residential and commercial/office by 2035. As shown in Figure 4.11-4, single-family residential development would increase substantially along this corridor as well as additional commercial and industrial growth. The majority of this growth would be centered around the cities of Vista, San Marcos, and Escondido. The pattern of more dense growth along this segment of the SR 78 corridor is also apparent when comparing the existing housing density to 2035 housing density (see Figures 4.13.2 and 4.13-8 in Section 4.13, Population and Housing)

By 2035, some regional growth would be accommodated in the more eastern, rural areas of the region. Development in these areas would be centered mostly along highway corridors, such as SR 78, SR 67, I-8 east of El Cajon, and SR 94, and generally within San Diego County community planning areas. The unincorporated portions of San Diego County are currently undergoing population growth and expansion of residential land use as indicated by a population increase of 14 percent from 2000 to 2010 as shown in Table 4.11-2. When comparing the existing land uses and 2035 land uses in Figures 4.11-1 and 4.11-4, the 2035 land use pattern would generally involve additional residential development in areas that were previously undeveloped open space or at some time in agricultural use (as discussed in Section 4.2).

Existing programs, policies, and practices would continue to reduce the rate of solid waste generation (amount per person or per employee) and divert a percentage of solid waste from landfills. However, all the active landfills in the region, identified in Table 4.14-10, have a limited capacity and are estimated to be closed by 2031. In addition, growth and development expected to occur by 2035 would result in an increase in the total amount of solid waste generated. This would reduce the available capacity of landfills in the San Diego region at a quicker rate than would occur without the regional growth. Therefore, the region's landfills would not have sufficient permitted capacity to accommodate the solid waste disposal needs of the region in the year 2035.

The proposed Gregory Canyon Landfill would have an average daily throughput of 3,200 tons per day and would receive up to 1,000,000 tons of municipal solid waste year. The total site capacity is 59,000,000 cubic yards and has an estimated closing date of 2040. Gregory Canyon is currently seeking approval of a Solid Waste Facility Permit to operate the landfill. Gregory Canyon would increase landfill capacity in the region and provide sufficient additional capacity to serve the region through 2035.

The IWMA requires regular monitoring of solid waste disposal needs, assessment of available landfill capacity, a projection of landfill capacity needed in the future, and the identification of potential new landfill sites. Although this establishes a process to identify future needs and prevent the region from being served by landfills with insufficient permitted capacity, it would not guarantee that a landfill with sufficient capacity is permitted and operational by the time existing landfills reach capacity. This solid waste disposal impact is significant.

Transportation Network Improvements

Some key highway improvements in place by 2035 would include ~~continued widening along portions of I-5;~~ additional HOV and Managed Lanes along portions of I-5, I-15, I-805, and SR 52; widening of portions of SR 125 and SR 67; and additional freeway and HOV connector improvements. Some important transit projects operational by 2035 would include continued increases in COASTER service, increases in SPRINTER service, increases in downtown area streetcar service, and substantial increases in rapid bus service throughout the region. The Trolley Blue Line would be extended from UTC to Mira Mesa via Sorrento Mesa and Carroll Canyon; the Orange Line would be extended to Lindbergh Field; Phase 1 of the new Mid-City to Downtown San Diego line would provide service from the Mid-City transit station via El Cajon Boulevard to Downtown; and a new line from Pacific Beach to El Cajon via Kearny Mesa, Mission Valley, and San Diego State University would be established. Double-tracking along the SPRINTER rail line through the cities of Oceanside, Vista, San Marco, and Escondido would take place by 2035 as well as continued double-tracking along the LOSSAN corridor.

Construction waste generated by transportation network improvements identified in the 2050 RTP/SCS would be processed in C&D waste and inert debris facilities and would not be disposed of in sanitary landfills. A nominal increase in the amount of solid waste that would be generated at transit stations, bus stops, and other public facilities, would not significantly increase the total volume of solid waste requiring disposal in the region. This solid waste disposal impact is less than significant.

Conclusion

If no new landfills are permitted by ~~2035~~²⁰, the region would be served by landfills with insufficient permitted capacity to meet the solid waste disposal needs of regional growth forecasted by the 2050 RTP/SCS. Therefore, this is a significant impact; mitigation measures are described in Section 4.14.5.

2050

Regional Growth/Land Use Change

By 2050, the population of the region is forecast to increase by 1,160,435 people; housing by 379,664 units; and employment by 501,958 jobs over existing conditions. As shown in Figure 4.11-5, new growth and land use changes in 2050 per the 2050 RTP/SCS are apparent throughout the region. Areas of substantial land use change and development, beyond that described in 2035 would include significant industrial development in the County's Otay planning area and San Diego Otay Mesa community surrounding the East Otay Mesa POE; throughout County planning areas located along the international border including Tecate, Potrero, Campo/Lake Morena, Boulevard, and Jacumba; throughout the Ramona and Julian planning areas in the unincorporated County; throughout other northeastern County planning areas including North Mountain, Desert, and Borrego Springs; and continued development throughout County planning areas located north and east of Escondido extending to the northern border with Riverside County including Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, Hidden Valley, Twin Oaks Valley, and North County Metro.

Increased population density from 2010 through 2050 can be seen when comparing Figures 4.13-1 and 4.13-10, respectively. Increased density is most apparent in City of San Diego communities near the downtown area near I-5 and I-805 and along the I-8 corridor to the east.

Urban centers in the western third of the San Diego region would have most available land developed with single- and multi-family uses, commercial and office uses, and industrial uses. Consistent with the goals of the 2050 RTP/SCS, the dense growth within existing urban centers with high accessibility to transit options allows for the creation of communities that are more sustainable, walkable, transit-oriented, and compact. Substantial dense growth within the urban centers corresponds with major transportation corridors such as I-5, I-8, I-15, and I-805 and these are also alignments that would have extensive transit opportunities.

Similar to the description in the 2035 analysis, growth would continue in more eastern locations of the region, such as east of I-15 in the northern area, east of SR 67 through the middle portion of the region, and east of SR 94 in the southern area. However, by 2050, spaced rural residential development would have expanded beyond areas along existing transportation corridors and established rural communities and into areas with very minimal development at present. As shown in Figure 4.11-5, some of these areas include northeast of Escondido to SR 76, areas east of Camp Pendleton, and areas north and south of the SR 78 corridor. Large pockets of land currently used for agricultural purposes would be developed with spaced rural residential uses.

As shown in Figure 4.11-5, by 2050, a substantial pocket of industrial development would be located along the planned SR 905 corridor in conjunction with the new Otay Mesa East POE at the international border with Mexico. This is a newly developing area that is planned for mainly industrial use and is highly dependent upon the planned construction of SR 11, SR 905, and the Otay Mesa East POE.

All the active landfills in the region, identified in Table 4.14-10, have a limited capacity and are estimated to be closed by 2031. Regional growth would increase the total amount of solid waste generated and additional landfill capacity would need to be identified.

The IWMA requires regular monitoring of solid waste disposal needs, assessment of available landfill capacity, a projection of landfill capacity needed in the future, and the identification of potential new landfill sites. Although this establishes a process to identify future needs and prevent the region from being served by landfills with insufficient permitted capacity, it would not guarantee that a landfill with

sufficient capacity is permitted and operational by the time existing landfills reach capacity. This solid waste disposal impact is significant.

Transportation Network Improvements

By 2050, most of the highway, transit, and active transportation (bicycle and pedestrian) improvements, along with other infrastructure projects, would be in place and operational in accordance with the proposed 2050 RTP/SCS. Some key highway improvements that would be in place by 2050 would include widening portions of SR 52, SR 56, SR 76, SR 94, SR 125, and I-5; additional HOV lanes and Managed Lanes along segments of I-805, I-5, I-15, SR 94, SR 125, and SR 54; and freeway and HOV connector improvements. Important transit improvements in place by 2050 would include the extension of Trolley lines and increased Trolley service frequency. The Trolley Green Line would be extended to Downtown-Bayside; ~~a new Phase 2 of the line connecting San Diego State University to Downtown San Diego~~ via El Cajon Boulevard/Mid-City would be constructed ~~extended to San Diego State University;~~ and a line from University Town Center to San Ysidro Palomar Trolley Station in the South Bay via Kearny Mesa, Mission Valley, Mid-City, ~~and National City,~~ and Chula Vista would be established.

A nominal amount of solid waste would be produced at transit stations, bus stops, and other public facilities constructed as part of the transportation network improvements included in the 2050 RTP/SCS. Construction waste produced while building roads, transit, and other improvements would be processed in C&D waste and inert debris facilities and would not be disposed of in sanitary landfills. This solid waste disposal impact is less than significant.

Conclusion

If no new landfills are permitted and in operation by 2050, the region would be served by landfills with insufficient permitted capacity to meet the solid waste disposal needs of regional growth forecasted by the 2050 RTP/SCS. Therefore, this is a significant impact; mitigation measures are described in Section 4.14.5.

US-4 SOLID WASTE REGULATORY COMPLIANCE

There are a number of federal, state, and local statutes and regulations related to solid waste that are described in detail in Section 4.14.2. Generally, statutes and regulations establish requirements for the siting, design, operation, or closure of landfills that are issued and enforced by a number of agencies by issuing and renewing permits and conducting inspections. The IWMA of 1989 also ensures an effective and coordinated approach to the management of all solid waste generated within the state. The IWMA establishes a goal to reduce dependence on landfills as the primary means of solid waste disposal and introduces a hierarchy of preferred waste management practices that prioritize (1) Source Reduction (Waste Prevention), to reduce the amount of waste generated at its source; (2) Recycling (or Reuse) and Composting; (3) Transformation; and (4) Disposal by Landfilling.

The IWMA required disposal of waste by each local jurisdictions to be cut by 25 percent by 1995 and by 50 percent by 2000. Table 4.14-9 shows the 2006 diversion rate for each jurisdiction.

The IWMA also requires the preparation of a CIWMP, including a Countywide Siting Element that must demonstrate a remaining landfill disposal capacity of at least 15 years to serve all the jurisdictions in the county. The Countywide Siting Element includes a combination of strategies to demonstrate adequate capacity, including existing, proposed, and tentative landfills or expansions; increased diversion efforts; and the export of solid waste for disposal. In San Diego County, the Countywide Siting Element is prepared by county staff and must be adopted by the County Board of Supervisors, and by a majority of the cities within the county. The Countywide Siting Element must be reviewed and updated every 5 years.

The IWMA also requires local jurisdictions to prepare and adopt three elements that contribute to the CIWMP. The elements include a Source Reduction and Recycling Element (SRRE), a Household Hazardous Waste Element (HHWE), and a Non-Disposal Facilities Element (NFDE). Local jurisdictions also have programs and policies to reduce waste generation and that regulate the disposal, collection, and processing of solid waste.

Compliance with regulations relating to the disposal of household hazardous waste is discussed in Section 4.9, Hazards and Hazardous Materials.

2020

Regional Growth/Land Use Change

By 2020, population within the region is expected to increase by 310,568 people; housing by 113,062 units; and employment by 118,535 jobs. When comparing existing land use as shown in Figure 4.11-1 and 2020 land use as shown in Figure 4.11-3, there are no substantial differences in the land use patterns, types, or areas of development. Some locations that would experience the most extensive land use change and development by 2020 would include areas such as eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 corridor; City of San Diego coastal and bay communities south of I-8 including Ocean Beach and the Peninsula planning areas; portions of northern Santee; areas north and south of the SR 56 corridor in the San Diego planning areas of Carmel Valley, Del Mar Mesa, Pacific Highlands Ranch, and Torrey Highlands; the San Marcos area near both the SR 78 and I-15 corridors; and within unincorporated County communities such as Fallbrook, Pala-Pauma Valley, and Valley Center along the I-15 and SR 76 corridors.

Although these changes would lead to a corresponding increase in the amount of solid waste generated and requiring disposal additional landfills would likely be needed to ensure sufficient permitted capacity, as discussed above. As required by the IWMA, the need for new landfills and possible sites would be identified through the preparation of the CIWMP, and regular updates to the Countywide Siting Element every 5 years. New landfills would be required to comply with all federal, state, and local statutes and regulations related to solid waste prior to beginning construction and operation. Local jurisdictions will also continue to prepare and update SRREs, HHWEs, and NFDEs and continue all programs and policies necessary to meet the required diversion rate. This solid waste regulatory impact is less than significant.

Transportation Network Improvements

The transportation network improvements that would be implemented between 2010 and 2020 generally include widening and/or installation of HOV lanes, ~~and~~ Managed Lanes, ~~and~~ Transit Lanes along portions of I-5, I-15, I-805, SR 78, and SR 94; completion of SR 905 and SR 11; and HOV connector projects along I-805 ~~and~~ SR 78 at I-15. Some key transit network improvements in place by 2020 would include increases in existing COASTER service, including extension of COASTER service to the San Diego Convention Center and Petco Park. BRT downtown express services from inland and south bay locations would be expanded as well as new BRT routes from the south bay area and along I-15. Rapid bus service would add new routes and streetcar routes would be established. Airport express routes would also be developed. Local bus service would be improved to 15 minutes in key corridors. Double-tracking of the LOSSAN rail corridor would occur to accommodate increased frequency in COASTER and other rail services that utilize this rail line. In addition, the new Mid-Coast Trolley line from Old Town to University Town Center would be constructed and the Green Trolley line would be extended to downtown San Diego. Waste generated from demolition, grading, and construction for these transportation network improvements would be disposed of at C&D waste and inert debris facilities, as required by local jurisdictions with C&D ordinances, and the IWMA. This solid waste regulatory impact is less than significant.

Conclusion

In 2020, regional growth and transportation network improvements would comply with federal, state, and local laws and regulations related to solid waste. Therefore this impact is less than significant.

2035

Regional Growth/Land Use Change

By 2035, the population of the region is expected to increase by 801,699 people; housing by 268,094 units; and employment by 312,292 jobs over existing 2010 conditions. As shown in Figure 4.11-4, regional land use and development changes are evident by 2035. Some locations that would experience the most extensive land use change and development by 2035 would include continued growth in eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 and SR 125 corridors; northeast of the SR 94 corridor in the unincorporated County planning areas of Jamul/Dulzura, Tecate, and Potrero; eastern Poway along the SR 67 corridor; the County planning area of Ramona along the SR 67 and SR 78 corridors; County planning areas of Lakeside and Alpine and the Crest, Granite Hills, Dehesa, Harbison Canyon subregion; and multiple north County planning areas along the I-15 and SR 76 corridors such as Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, and Hidden Valley.

The increased density can be seen when comparing the existing housing density to the 2035 housing density, as shown in Figures 4.13-2 and 4.13-8, respectively. Areas of increased residential density by 2035 would be apparent in some coastal cities such as Oceanside and Encinitas, and City of San Diego coastal communities. Also, increased density would occur in more inland areas along the I-8 corridor through Mission Valley, College Area, and into the City of La Mesa, as well as eastern Chula Vista along the SR 125 corridor.

In the northern portion of the region, land use changes to accommodate growth in 2035 in the form of spaced rural residential development would occur along the I-15 corridor north of Escondido toward the northern county line and in more eastern areas along I-8, SR 67, SR 78, and SR 94.

The SR 78 corridor, from Escondido to I-5, would also experience growth and resulting land use density increases of both residential and commercial/office by 2035. As shown in Figure 4.11-4, single-family residential development would increase substantially along this corridor as well as additional commercial and industrial growth. The majority of this growth would be centered around the cities of Vista, San Marcos, and Escondido. The pattern of more dense growth along this segment of the SR 78 corridor is also apparent when comparing the existing housing density to 2035 housing density (see Figures 4.13.2 and 4.13-8 in Section 4.13, Population and Housing)

By 2035, some regional growth would be accommodated in the more eastern, rural areas of the region. Development in these areas would be centered mostly along highway corridors, such as SR 78, SR 67, I-8 east of El Cajon, and SR 94, and generally within San Diego County community planning areas. The unincorporated portions of San Diego County are currently undergoing population growth and expansion of residential land use as indicated by a population increase of 14 percent from 2000 to 2010 as shown in Table 4.11-2. When comparing the existing land uses and 2035 land uses in Figures 4.11-1 and 4.11-4, the 2035 land use pattern would generally involve additional residential development in areas that were previously undeveloped open space or at some time in agricultural use (as discussed in Section 4.2).

Although this would lead to a corresponding increase in the amount of solid waste generated and requiring disposal, additional landfills would likely be needed to ensure sufficient permitted capacity, as discussed above. As required by the IWMA, the need for new landfills and possible sites would be identified through the preparation of the CIWMP, and regular updates to the Countywide Siting Element

every 5 years. New landfills would be required to comply with all federal, state, and local statutes and regulations related to solid waste prior to beginning construction and operation. Local jurisdictions will also continue to prepare SRREs, HHWEs, and NFDEs and continue all programs and policies necessary to meet the required diversion rate. This solid waste regulatory impact is less than significant.

Transportation Network Improvements

Some key highway improvements in place by 2035 would include ~~continued widening along portions of I-5;~~ additional HOV and Managed Lanes along portions of I-5, I-15, I-805, and SR 52; widening of portions of SR 125 and SR 67; and additional freeway and HOV connector improvements. Some important transit projects operational by 2035 would include continued increases in COASTER service, increases in SPRINTER service, increases in downtown area streetcar service, and substantial increases in rapid bus service throughout the region. The Trolley Blue Line would be extended from UTC to Mira Mesa via Sorrento Mesa and Carroll Canyon; the Orange Line would be extended to Lindbergh Field; Phase 1 of the new Mid-City to Downtown San Diego line would provide service from the Mid-City transit station via El Cajon Boulevard to Downtown; and a new line from Pacific Beach to El Cajon via Kearny Mesa, Mission Valley, and San Diego State University would be established. Double-tracking along the SPRINTER rail line through the cities of Oceanside, Vista, San Marco, and Escondido would take place by 2035 as well as continued double-tracking along the LOSSAN corridor. Waste generated from demolition, grading, and construction of these transportation network improvements would be disposed of at C&D waste and inert debris facilities, as required by local jurisdictions with C&D ordinances, and the IWMA. This solid waste regulatory impact is less than significant.

Conclusion

In 2035, regional growth and transportation network improvements would comply with federal, state, and local laws and regulations related to solid waste. Therefore, this impact is less than significant.

2050

Regional Growth/Land Use Change

By 2050, the population of the region is forecast to increase by 1,160,435 people; housing by 379,664 units; and employment by 501,958 jobs over existing conditions. As shown in Figure 4.11-5, new growth and land use changes in 2050 per the 2050 RTP/SCS are apparent throughout the region. Areas of substantial land use change and development, beyond that described in 2035 would include significant industrial development in the County's Otay planning area and San Diego Otay Mesa community surrounding the East Otay Mesa POE; throughout County planning areas located along the international border including Tecate, Potrero, Campo/Lake Morena, Boulevard, and Jacumba; throughout the Ramona and Julian planning areas in the unincorporated County; throughout other northeastern County planning areas including North Mountain, Desert, and Borrego Springs; and continued development throughout County planning areas located north and east of Escondido extending to the northern border with Riverside County including Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, Hidden Valley, Twin Oaks Valley, and North County Metro.

Increased population density from 2010 through 2050 can be seen when comparing Figures 4.13-1 and 4.13-10, respectively. Increased density is most apparent in City of San Diego communities near the downtown area near I-5 and I-805 and along the I-8 corridor to the east.

Urban centers in the western third of the San Diego region would have most available land developed with single- and multi-family uses, commercial and office uses, and industrial uses. Consistent with the goals of the 2050 RTP/SCS, the dense growth within existing urban centers with high accessibility to transit options allows for the creation of communities that are more sustainable, walkable, transit-

oriented, and compact. Substantial dense growth within the urban centers corresponds with major transportation corridors such as I-5, I-8, I-15, and I-805 and these are also alignments that would have extensive transit opportunities.

Similar to the description in the 2035 analysis, growth would continue in more eastern locations of the region, such as east of I-15 in the northern area, east of SR 67 through the middle portion of the region, and east of SR 94 in the southern area. However, by 2050, spaced rural residential development would have expanded beyond areas along existing transportation corridors and established rural communities and into areas with very minimal development at present. As shown in Figure 4.11-5, some of these areas include northeast of Escondido to SR 76, areas east of Camp Pendleton, and areas north and south of the SR 78 corridor. Large pockets of land currently used for agricultural purposes would be developed with spaced rural residential uses

As shown in Figure 4.11-5, by 2050, a substantial pocket of industrial development would be located along the planned SR 905 corridor in conjunction with the new Otay Mesa East POE at the international border with Mexico. This is a newly developing area that is planned for mainly industrial use and is highly dependent upon the planned construction of SR 11, SR 905, and the Otay Mesa East POE.

Although these changes would lead to a corresponding increase in the amount of solid waste generated and requiring disposal additional landfills would likely be needed to ensure sufficient permitted capacity. As discussed above. As required by the IWMA, the need for new landfills and possible sites would be identified through the preparation of the CIWMP, and regular updates to the Countywide Siting Element every 5 years. New landfills would be required to comply with all federal, state, and local statutes and regulations related to solid waste prior to beginning construction and operation. This solid waste regulatory impact is less than significant.

Transportation Network Improvements

By 2050, most of the highway, transit, and active transportation (bicycle and pedestrian) improvements, along with other infrastructure projects, would be in place and operational in accordance with the proposed 2050 RTP/SCS. Some key highway improvements that would be in place by 2050 would include widening portions of SR 52, SR 56, SR 76, SR 94, SR 125, and I-5; additional HOV lanes and Managed Lanes along segments of I-805, I-5, I-15, SR 94, SR 125, and SR 54; and freeway and HOV connector improvements. Important transit improvements in place by 2050 would include the extension of Trolley lines and increased Trolley service frequency. The Trolley Green Line would be extended to Downtown-Bayside; ~~a new Phase 2 of the line connecting San Diego State University to Downtown San Diego via El Cajon Boulevard/Mid-City would be constructed~~ extended to San Diego State University; and a line from University Town Center to ~~San Ysidro Palomar Trolley Station in the South Bay~~ via Kearny Mesa, Mission Valley, Mid-City, and National City, and Chula Vista would be established. Waste generated from demolition, grading, and construction for these transportation network improvements would be disposed of at C&D waste and inert debris facilities, as required by local jurisdictions with C&D ordinances, and the IWMA.

Conclusion

In 2050, regional growth and transportation network improvements would comply with federal, state, and local laws and regulations related to solid waste. Therefore, this impact is less than significant

US-5 ENERGY

Population growth and development anticipated to occur as part of the 2050 RTP/SCS would increase the total demand for energy, and new facilities would likely be needed to produce and deliver energy to the

region. New generation facilities or expansion of existing facilities would be needed to produce more electricity. A variety of renewable and nonrenewable resources could be used to increase electricity supply, and impacts of construction and operation of the facilities would have a range of impacts depending on the facility type, size, and location. Potential short-term constructed-related impacts include, but are not limited to, transportation/traffic, noise, air quality, hazards and hazardous materials, and hydrology and water quality.

Additional demand for natural gas may also require the construction of new supply, conveyance, storage, and distribution infrastructure. Potential short-term constructed-related impacts include, but are not limited to, transportation/traffic, noise, air quality, GHG emissions, hazards and hazardous materials, and hydrology and water quality. Construction of natural gas facilities may also have impacts to cultural resources, biological resources, and aesthetics, among other issues, depending on the facility type, size, and location.

Although the demand for petroleum-based transportation fuels will likely decrease, additional facilities, or modified facilities, will be required to supply alternative transportation fuels to the region. Although alternative fuels and vehicle technologies offer more benefits than petroleum-based transportation fuels, additional demand for alternative fuels will require additional infrastructure and may result in construction-related impacts. Alternative transportation fuels include electricity and natural gas, and increased demand for these energy sources for transportation purpose will further increase the need for additional infrastructure.

Plans, policies, and programs included in the 2050 RTP/SCS would primarily concentrate growth in or adjacent to areas that are already developed and that have electricity and natural gas infrastructure in place. Although this would reduce the need for new infrastructure in other areas, increases in demand may require upgrades of transmission lines, substations, and distribution facilities that already serve these areas to ensure that energy infrastructure adequately meets future needs.

As described in Section 4.14.1.5, SDG&E recently completed construction of the Otay-Metro Powerloop and is currently constructing the Sunrise Powerlink to add additional transmission capacity. SDG&E is also currently planning to construct the East County (ECO) Substation Project to meet future demand. These facilities will significantly increase the capacity of the system, but additional transmission lines may also be needed to meet growing demand for electricity resulting from regional population, housing, and employment growth. Additional facilities may also be needed depending on the location and timing of regional growth and the location of new generation facilities. Construction and operation of transmission lines could potentially have impacts to aesthetics, air quality, biological resources, noise, and hazards and hazardous materials.

New roads and highways will require electricity to power streetlights, stop lights, and informational signs. In addition, new Trolley lines or streetcar lines, extending Trolley service, and increasing the frequency of service on existing Trolley lines would further increase the demand for electricity. The 2050 RTP/SCS also supports the introduction of clean fuel and electric vehicles into the regional vanpool fleet, as the necessary infrastructure becomes available to enable this transition, which would also increase energy use. New bus lines and increases in service frequency would require additional buses that rely on natural gas or other clean alternatives for fuel, which would increase demand for natural gas or other fuels and require additional associated facilities.

2020**Regional Growth/Land Use Change**

By 2020, population within the region is expected to increase by 310,568 people; housing by 113,062 units; and employment by 118,535 jobs. When comparing existing land use as shown in Figure 4.11-1 and 2020 land use as shown in Figure 4.11-3, there are no substantial differences in the land use patterns, types, or areas of development. Some locations that would experience the most extensive land use change and development by 2020 would include areas such as eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 corridor; City of San Diego coastal and bay communities south of I-8 including Ocean Beach and the Peninsula planning areas; portions of northern Santee; areas north and south of the SR 56 corridor in the San Diego planning areas of Carmel Valley, Del Mar Mesa, Pacific Highlands Ranch, and Torrey Highlands; the San Marcos area near both the SR 78 and I-15 corridors; and within unincorporated County communities such as Fallbrook, Pala-Pauma Valley, and Valley Center along the I-15 and SR 76 corridors.

New facilities for generation, transmission, storage, and distribution of electricity and natural gas will be needed in 2020 to meet the increase in demand for energy as a result of regional growth and land use change that is forecasted to occur. As described in Section 4.14.1.5, the California Energy Commission projects that by 2020 total annual energy usage in the SDG&E planning area will increase 14.0 percent by the year 2020 (from 21,695 GWH to 24,740 GWH) and that peak demand will increase 14.2 percent (from 4,516 MW to 5,157 MW). Regional natural gas consumption is expected to grow to by 13.6 percent by the year 2020 (from 581 MMTh to 660 MMTh). New facilities for generation, transmission, storage, and distribution of electricity, natural gas, and transportation fuel will be needed to meet the demand of residents and businesses. Construction or expansion of these facilities represents a significant impact.

Transportation Network Improvements

The transportation network improvements that would be implemented between 2010 and 2020 generally include widening and/or installation of HOV lanes, ~~and~~ Managed Lanes, ~~and~~ Transit Lanes along portions of I-5, I-15, I-805, SR 78, and SR 94; completion of SR 905 and SR 11; and HOV connector projects along I-805 ~~and SR 78 at I-15~~. Some key transit network improvements in place by 2020 would include increases in existing COASTER service, including extension of COASTER service to the San Diego Convention Center and Petco Park. BRT downtown express services from inland and south bay locations would be expanded as well as new BRT routes from the south bay area and along I-15. Rapid bus service would add new routes and streetcar routes would be established. Airport express routes would also be developed. Local bus service would be improved to 15 minutes in key corridors. Double-tracking of the LOSSAN rail corridor would occur to accommodate increased frequency in COASTER and other rail services that utilize this rail line.

In addition, the new Mid-Coast Trolley line from Old Town to University Town Center would be constructed and the Trolley Green Line would be extended to downtown San Diego. These transit projects would all operate on electric catenary wires and would require additional electricity to operate. A number of new highways would also be constructed that would include lighting, electrical signage, and other associated amenities requiring electricity. New bus routes and increasing bus frequency would require additional natural gas facilities. New or modified facilities would also be required to supply transportation fuel. Construction or expansion of these facilities represents a significant impact.

Conclusion

In the year 2020, both regional growth and transportation network improvements would result in construction of new natural gas, electricity, or transportation fuel facilities or expansion of existing

facilities, the construction of which could cause significant environmental effects. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

2035

Regional Growth/Land Use Change

By 2035, the population of the region is expected to increase by 801,699 people; housing by 268,094 units; and employment by 312,292 jobs over existing 2010 conditions. As shown in Figure 4.11-4, regional land use and development changes are evident by 2035. Some locations that would experience the most extensive land use change and development by 2035 would include continued growth in eastern Chula Vista along the SR 125 and I-805 corridors; San Diego community planning areas of San Ysidro and Otay Mesa along the SR 905 and SR 125 corridors; northeast of the SR 94 corridor in the unincorporated County planning areas of Jamul/Dulzura, Tecate, and Potrero; eastern Poway along the SR 67 corridor; the County planning area of Ramona along the SR 67 and SR 78 corridors; County planning areas of Lakeside and Alpine and the Crest, Granite Hills, Dehesa, Harbison Canyon subregion; and multiple north County planning areas along the I-15 and SR 76 corridors such as Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, and Hidden Valley.

The increased density can be seen when comparing the existing housing density to the 2035 housing density, as shown in Figures 4.13-2 and 4.13-8, respectively. Areas of increased residential density by 2035 would be apparent in some coastal cities such as Oceanside and Encinitas, and City of San Diego coastal communities. Also, increased density would occur in more inland areas along the I-8 corridor through Mission Valley, College Area, and into the City of La Mesa, as well as eastern Chula Vista along the SR 125 corridor.

In the northern portion of the region, land use changes to accommodate growth in 2035 in the form of spaced rural residential development would occur along the I-15 corridor north of Escondido toward the northern county line and in more eastern areas along I-8, SR 67, SR 78, and SR 94.

The SR 78 corridor, from Escondido to I-5, would also experience growth and resulting land use density increases of both residential and commercial/office by 2035. As shown in Figure 4.11-4, single-family residential development would increase substantially along this corridor as well as additional commercial and industrial growth. The majority of this growth would be centered around the cities of Vista, San Marcos, and Escondido. The pattern of more dense growth along this segment of the SR 78 corridor is also apparent when comparing the existing housing density to 2035 housing density (see Figures 4.13.2 and 4.13-8 in Section 4.13, Population and Housing).

By 2035, some regional growth would be accommodated in the more eastern, rural areas of the region. Development in these areas would be centered mostly along highway corridors, such as SR 78, SR 67, I-8 east of El Cajon, and SR 94, and generally within San Diego County community planning areas. The unincorporated portions of San Diego County are currently undergoing population growth and expansion of residential land use as indicated by a population increase of 14 percent from 2000 to 2010 as shown in Table 4.11-2. When comparing the existing land uses and 2035 land uses in Figures 4.11-1 and 4.11-4, the 2035 land use pattern would generally involve additional residential development in areas that were previously undeveloped open space or at some time in agricultural use (as discussed in Section 4.2).

Regional growth and land use change forecasted to occur by 2035 will lead to a corresponding increase in demand for electricity, natural gas, and transportation fuel. New facilities for generation, transmission, storage, and distribution of electricity, natural gas, and transportation fuel will be needed to meet the demand of residents and businesses. Construction or expansion of these facilities represents a significant impact.

Transportation Network Improvements

Some key highway improvements in place by 2035 would include ~~continued widening along portions of I-5;~~ additional HOV and Managed Lanes along portions of I-5, I-15, I-805, and SR 52; widening of portions of SR 125 and SR 67; and additional freeway and HOV connector improvements. Some important transit projects operational by 2035 would include continued increases in COASTER service, increases in SPINTER service, increases in downtown area streetcar service, and substantial increases in rapid bus service throughout the region. Double-tracking along the SPINTER rail line through the cities of Oceanside, Vista, San Marco, and Escondido would take place by 2035 as well as continued double-tracking along the LOSSAN corridor.

The Trolley Blue Line would be extended from UTC to Mira Mesa via Sorrento Mesa and Carroll Canyon; the Orange Line would be extended to Lindbergh Field; Phase 1 of the new Mid-City to Downtown San Diego line would provide service from the Mid-City transit station via El Cajon Boulevard to Downtown; and a new line from Pacific Beach to El Cajon via Kearny Mesa, Mission Valley, and San Diego State University would be established. These transit projects would all operate on electric catenary wires and would increase demand for electricity. A number of new highways would also be constructed that would include lighting, electrical signage, and other associated amenities requiring electricity. In addition, new bus routes and increasing bus frequency would require additional natural gas facilities. Construction or expansion of these facilities represents a significant impact.

Conclusion

In the year 2035, both regional growth and transportation network improvements would result in construction of new natural gas, electricity, or transportation fuel facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

2050

Regional Growth/Land Use Change

By 2050, the population of the region is forecast to increase by 1,160,435 people; housing by 379,664 units; and employment by 501,958 jobs over existing conditions. As shown in Figure 4.11-5, new growth and land use changes in 2050 per the 2050 RTP/SCS are apparent throughout the region. Areas of substantial land use change and development, beyond that described in 2035 would include significant industrial development in the County's Otay planning area and San Diego Otay Mesa community surrounding the East Otay Mesa POE; throughout County planning areas located along the international border including Tecate, Potrero, Campo/Lake Morena, Boulevard, and Jacumba; throughout the Ramona and Julian planning areas in the unincorporated County; throughout other northeastern County planning areas including North Mountain, Desert, and Borrego Springs; and continued development throughout County planning areas located north and east of Escondido extending to the northern border with Riverside County including Rainbow, Fallbrook, Bonsall, Pala-Pauma Valley, Valley Center, Hidden Valley, Twin Oaks Valley, and North County Metro

Increased population density from 2010 through 2050 can be seen when comparing Figures 4.13-1 and 4.13-10, respectively. Increased density is most apparent in City of San Diego communities near the downtown area near I-5 and I-805 and along the I-8 corridor to the east.

Urban centers in the western third of the San Diego region would have most available land developed with single- and multi-family uses, commercial and office uses, and industrial uses. Consistent with the goals of the 2050 RTP/SCS, the dense growth within existing urban centers with high accessibility to transit options allows for the creation of communities that are more sustainable, walkable, transit-

oriented, and compact. Substantial dense growth within the urban centers corresponds with major transportation corridors such as I-5, I-8, I-15, and I-805 and these are also alignments that would have extensive transit opportunities.

Similar to the description in the 2035 analysis, growth would continue in more eastern locations of the region, such as east of I-15 in the northern area, east of SR 67 through the middle portion of the region, and east of SR 94 in the southern area. However, by 2050, spaced rural residential development would have expanded beyond areas along existing transportation corridors and established rural communities and into areas with very minimal development at present. As shown in Figure 4.11-5, some of these areas include northeast of Escondido to SR 76, areas east of Camp Pendleton, and areas north and south of the SR 78 corridor. Large pockets of land currently used for agricultural purposes would be developed with spaced rural residential uses

As shown in Figure 4.11-5, by 2050, a substantial pocket of industrial development would be located along the planned SR 905 corridor in conjunction with the new Otay Mesa East POE at the international border with Mexico. This is a newly developing area that is planned for mainly industrial use and is highly dependent upon the planned construction of SR 11, SR 905, and the Otay Mesa East POE.

Regional growth and land use change forecasted to occur by 2050 will lead to a corresponding increase in demand for electricity and natural gas. New facilities for generation, transmission, and distribution of electricity will be needed to meet the demand of residents and businesses. Construction or expansion of these facilities represents a significant impact.

Transportation Network Improvements

By 2050, most of the highway, transit, and active transportation (bicycle and pedestrian) improvements, along with other infrastructure projects, would be in place and operational in accordance with the proposed 2050 RTP/SCS. Some key highway improvements that would be in place by 2050 would include widening portions of SR 52, SR 56, SR 76, SR 94, SR 125, and I-5; additional HOV lanes and Managed Lanes along segments of I-805, I-5, I-15, SR 94, SR 125, and SR 54; and freeway and HOV connector improvements. Important transit improvements in place by 2050 would include the extension of Trolley lines and increased Trolley service frequency. The Trolley Green Line would be extended to Downtown-Bayside; ~~a new Phase 2 of the line connecting San Diego State University to Downtown San Diego~~ via El Cajon Boulevard/Mid-City would be constructed/extended to San Diego State University; and a line from University Town Center to ~~San Ysidro Palomar Trolley Station in the South Bay~~ via Kearny Mesa, Mission Valley, Mid-City, and National City, and Chula Vista would be established.

Trolley enhancements and extensions that would also result in an increasing demand for electricity and a corresponding need for infrastructure. A number of new highways would also be constructed that would include lighting, electrical signage, and other associated amenities requiring electricity. In addition, new bus routes and increasing bus frequency would require additional natural gas. Construction or expansion of these facilities represents a significant impact.

Conclusion

In the year 2050, both regional growth and transportation network improvements would result in construction of new natural gas, electricity, or transportation fuel facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. Therefore, this impact is significant; mitigation measures are described in Section 4.14.5.

4.14.5 MITIGATION MEASURES

The following mitigation measures aim to reduce potential impacts related to public services, utilities, and energy that may occur with implementation of the 2050 RTP/SCS. These mitigation measures are general and programmatic in nature, and would be refined in project-specific CEQA documents.

PS-1 PUBLIC SERVICES

2020, 2035, 2050

Implementation of the 2050 RTP/SCS would result in significant impacts from the construction of governmental facilities necessary to maintain service standards or ratios, or other performance objectives for public services in 2020, 2035, and 2050. Implementation of Mitigation Measure PS-A reduces impacts from the construction of governmental facilities.

PS-A During the CEQA review process for individual facilities, San Diego region cities; the County of San Diego; and all school districts, colleges, and universities with responsibility for construction of new public service facilities or the expansion of existing facilities, including those of police and fire protection services, libraries, and schools, can and should apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction or expansion of new public or expanded public service facilities.

US-1 WASTEWATER TREATMENT FACILITIES

2020, 2035, 2050

Implementation of the 2050 RTP/SCS would result in significant impacts from the construction of wastewater treatment facilities in 2020, 2035, and 2050. Implementation of Mitigation Measures US-A and US-B would reduce impacts from the construction of wastewater treatment facilities.

US-A During the CEQA review process for individual facilities, San Diego region cities, the County of San Diego, and special districts with responsibility for the construction of new wastewater treatment and collection facilities or the expansion of existing facilities to adequately meet projected capacity needs can and should apply necessary mitigation measures to reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality and others that apply to specific construction or expansion of wastewater treatment and collection facilities projects.

US-B During the CEQA review process for individual development projects, San Diego region cities, the County of San Diego and special districts with responsibility for project approval can and should apply necessary mitigation measures to conserve water and reduce the generation of

wastewater. Such measures should be imposed through conditions required to be followed by those directly involved in the design, construction, and operation of projects.

US-2 STORM WATER DRAINAGE FACILITIES

2020, 2035, 2050

Implementation of the 2050 RTP/SCS would result in significant impacts from the construction of storm water drainage facilities in 2020, 2035, and 2050. Implementation of Mitigation Measure US-C would reduce impacts from the construction of storm water drainage facilities.

US-C During the CEQA review process for individual facilities, SANDAG shall and San Diego region cities, the County of San Diego, and other implementing agencies with responsibility for the construction of new storm water drainage facilities or the expansion of existing facilities to adequately meet projected capacity needs can and should apply necessary mitigation measures, including actions set forth in regional watershed management plans, –to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction or expansion of storm water drainage facilities projects.

US-3 SOLID WASTE DISPOSAL

2020, 2035, 2050

Implementation of the 2050 RTP/SCS would result in significant impacts because landfills would have insufficient permitted capacity in 2020, 2035, and 2050 to meet the solid waste disposal needs of forecasted growth. Implementation of Mitigation Measure US-D would reduce impacts associated with solid waste disposal.

US-D SANDAG shall and San Diego region cities, and the County of San Diego can and should support the San Diego region’s implementation of (1) the IWMA through identification of the need for new landfills and possible sites through the preparation of the CIWMP, and regular updates to the Countywide Siting Element every 5 years; and (2) solid waste recycling, composting, and other waste reduction programs.

To further reduce significant impacts that would result from regional growth/land use change and transportation improvements, additional mitigation measures to avoid or reduce impacts related to solid waste disposal were considered. As described with each of the potential measures outlined below, due to substantial negative factors these measures were found to be infeasible as viable mitigation to reduce potential impacts.

- Require all proposed projects to obtain written verification of sufficient landfill capacity to meet projected solid waste disposal needs of the project for the next 20 years.

This mitigation measure would be infeasible because existing landfill facilities are not projected to have sufficient capacity to meet the solid waste disposal needs in the years 2020, 2035, or 2050. New development would be unable to obtain verification of adequate landfill capacity and regional growth

would be prohibited. Therefore, this mitigation measure would cause conflicts with existing land use plans and impede the region's ability to manage growth in a sustainable manner, which is a project objective of the 2050 RTP/SCS. Restricting development of residential units or increasing density of residential development may cause the 2050 RTP/SCS to be out of compliance with implementing the RHNA allocation, a requirement mandated by state law, or impede implementation of a jurisdiction's Housing Element.

- Require any proposed project that is expected to result in an increase in solid waste disposal demand to construct a solid waste disposal facility, concurrent with development, to meet the projected solid waste needs of the project.

This mitigation measure would be infeasible because it places the burden of developing solid waste disposal facilities on the project proponent and would require permits from local and state agencies. Furthermore, this mitigation measure would result in environmental impacts from the construction of multiple solid waste facilities throughout the region. Implementation of this mitigation measure would conflict with the project objective of the 2050 RTP/SCS to promote sustainable development patterns and reduce the need for additional regional infrastructure.

US-5 ENERGY

2020, 2035, 2050

Implementation of the 2050 RTP/SCS would result in significant impacts associated with the construction of natural gas and electricity facilities in 2020, 2035, and 2050. Implementation of Mitigation Measures US-E and US-F would be required to reduce impacts from the construction of natural gas and electricity facilities.

US-E During the CEQA review process, San Diego region energy providers and energy regulatory agencies with responsibility for the construction or approval of new natural gas, electricity, and transportation fuel facilities or the expansion of existing facilities to adequately meet projected capacity needs can and should apply necessary mitigation measures to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced through the imposition of conditions required to be followed by those directly involved in the construction or expansion activities. Such conditions should include those necessary to avoid or reduce impacts associated with air quality, noise, traffic, biological resources, cultural resources, greenhouse gas emissions, hydrology and water quality, and others that apply to specific construction or expansion of natural gas and electric facilities projects.

US-F During the CEQA review process for individual development projects, San Diego region cities, the County of San Diego and special districts with responsibility for project approval can and should apply necessary mitigation measures to reduce energy consumption and promote the use of renewable energy. Such measures should be imposed through conditions required to be followed by those directly involved in the design, construction, and operation of projects.

4.14.6 SIGNIFICANCE AFTER MITIGATION

PS-1 PUBLIC SERVICES

2020, 2035, 2050

Implementation of the 2050 RTP/SCS would result in significant impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services, including fire protection, police protection, schools, and libraries in 2020, 2035, and 2050. Implementation of Mitigation Measure PS-A would reduce impacts associated with the construction of governmental facilities to a level less than significant through CEQA review of specific facilities, which would mitigate project-specific construction-related impacts to **less than significant** levels.

US-1 WASTEWATER TREATMENT FACILITIES

2020, 2035, 2050

Implementation of the 2050 RTP/SCS would result in significant impacts from the construction of new wastewater treatment facilities or the expansion of existing facilities that would be required to adequately meet projected capacity needs in the years 2020, 2035, and 2050. Implementation of Mitigation Measures US-A and US-B would reduce impacts associated with the construction of wastewater treatment facilities to a level less than significant level through CEQA review of specific facilities, which would mitigate project-specific construction-related impacts to **less than significant** levels.

US-2 STORM WATER DRAINAGE FACILITIES

2020, 2035, 2050

Implementation of the 2050 RTP/SCS would result in significant impacts from the construction of new storm water drainage facilities or the expansion of existing facilities that would be required to adequately meet projected capacity needs in the years 2020, 2035, and 2050. Implementation of Mitigation Measure US-C would reduce impacts associated with the construction of storm water drainage facilities to a level less than significant through CEQA review of specific facilities, which would mitigate project-specific construction-related impacts to **less than significant** levels.

US-3 SOLID WASTE DISPOSAL

2020, 2035, 2050

Implementation of the 2050 RTP/SCS would result in significant impacts related to being served by landfills with insufficient permitted capacity to accommodate the project's solid waste disposal needs. Implementation of Mitigation Measure US-D would reduce direct and indirect impacts associated with identified conversion of solid waste disposal; however, it cannot be determined whether the proposed mitigation would reduce all potential impacts to a level less than significant.

The capacity of existing landfills is limited, and the 2050 RTP/SCS would increase the total amount of solid waste generated. Increasing the total amount of solid waste that requires disposal in landfills would cause landfills to reach maximum permitted capacity quicker. The capacity of existing landfills is limited, and in the years 2020, 2035, and 2050, sufficient permitted capacity to serve the region is not anticipated.

Therefore, direct and indirect impacts related to being served by landfills with insufficient permitted capacity to accommodate the project's solid waste disposal needs would remain **significant and unavoidable**.

US-5 ENERGY

2020, 2035, 2050

Implementation of the 2050 RTP/SCS would result in significant impacts from the construction of new natural gas, electricity, or transportation fuel facilities or the expansion of existing facilities that would be required to adequately meet projected capacity needs in the years 2020, 2035, and 2050. Implementation of Mitigation Measures US-E and US-F would reduce impacts associated with the construction of natural gas and electricity facilities to a level less than significant through CEQA review of specific facilities, which would mitigate project-specific construction-related impacts to **less than significant** levels.