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2 CIRCULATION AND INFRASTRUCTURE

2.1 PURPOSE OF THE ELEMENT AND BACKGROUND REPORT

2.1.1 INTRODUCTION

2.1.1.1 CIRCULATION

The Circulation section of this Background Report provides the transportation context for the General Plan by describing existing circulation and traffic conditions, plans, and policies that have a bearing on overall mobility in San Bernardino County (the County). This report will serve as a reference material and technical appendix for the Circulation Element of the General Plan Update. This document is a revision of the currently adopted Circulation Element with the intent of making it consistent with the new updated general plan. The data and findings of this technical report will also support the environmental conditions section of the General Plan Environmental Impact Report (EIR).

Purpose of the Element

The fundamental goal of the Circulation Element is to lay the groundwork for and promote the development of a coordinated, multi-modal Countywide transportation system to meet the needs of all people living, working or visiting the County and all economic segments of the community. The County must achieve transportation goals while integrating and maintaining internal consistency with parts of the transportation systems that are under the control of other local, regional and state agencies. The Circulation Element correlates all transportation issues into a set of coherent policies: the goals, objectives, policies, and programs of the element relate directly to other elements and issues addressed in the General Plan.

The purpose of the Circulation Element is to set forth strategies to support the production of a circulation system consistent with the overall vision specified for the County. A well functioning transportation system in the County is of vital statewide importance and a high priority. The Legislature requires local governments to address this priority while considering economic, environmental, and fiscal factors and community goals set forth in the General Plan.

The Circulation Background Report is to act as a reference material and technical appendix for the Circulation Element of the General Plan. This background report will be used in formulating the Circulation policies and programs and will be reformatted herein to be consistent with the overall General Plan program.

2.1.1.2 INFRASTRUCTURE

The Infrastructure section of this Background Report provides information related to existing infrastructure in San Bernardino County. Understanding the infrastructure capacity of the County is

essential to an analysis of growth and development potential. This discussion will serve as a reference material and technical appendix on infrastructure for the Circulation and Infrastructure Element of the General Plan. This report will also be included as the environmental conditions section in the General Plan EIR.

The Infrastructure portion of this Background Report addresses the following topics:

- Water
- Wastewater
- Solid Waste
- Law Enforcement
- Fire Protection
- Natural Gas
- Electricity
- Health Care
- Telecommunications
- Libraries
- Education

2.1.2 APPROACH/METHODOLOGY

2.1.2.1 CIRCULATION

The transportation and circulation needs of the County are determined by reviewing and summarizing the County's existing General Plan (1989) and analyzing the operation of the existing multi-modal transportation system including freeways, arterials, bus and rail transit systems, as well as non-motorized transportation systems including bicycles and pedestrians. The condition of the circulation system is seldom static, but is constantly changing with dynamic social and economic factors not only within the County but in the larger southern California region as well as adjoining states. As County and regional demographics and household socioeconomic conditions change, different transportation opportunities arise and/or must be created to meet the overall travel demand on the circulation system. The background report establishes a baseline condition, by exploring the characteristics of the existing circulation system and levels of travel demand in order to define the extent of adequacy of the current system and its current deficiencies, and identify expected potential future problems. This information helps to provide direction in updating the County's Circulation Element goals, policies, and programs.

The process involved collection of transportation data from federal, state, regional, and local sources, including various County departments. The collected data will be analyzed and findings of the analyses summarized in the background report. Previous research conducted on pertinent topics will be reviewed and evaluated for application.

The Circulation Background Report consists of five sections:

- Purpose of the Element;

- Identification of Public Concerns;
- Existing Conditions;
- Critical Issues to be Addressed; and
- Reference and Resource Documents.

Identification of public concerns is the accumulation and synthesis of the public out reach efforts as they relate to transportation issues and conditions. The Existing Conditions section provides an inventory of the circulation system, its practical capacities, and the operational conditions, as defined by set levels of service standards.

2.1.2.2 INFRASTRUCTURE

Various service providers within the County were contacted to obtain information for this Background Report. Information sources included both public and private service providers. Data collected from the service providers is summarized and presented in the following sections of the report:

Water

The Water section provides service demand data collected from every water district within the County. Tables are provided to quantify the different water supplies that are designated to meet projected demands, and to identify reserve/alternative water supplies that provide for uncertain demand projections and risks in implementing supply programs. Data was collected from the San Bernardino County Department of Public Works, the Metropolitan Water District, and other local water districts.

Wastewater

The Wastewater section provides information related to land application of biosolids, capacity; infrastructure, water quality, on-site treatment (septic systems), and water recycling. Information regarding these issues was gathered from state, regional, and local levels, and is summarized in a series of tables and figures that display current and projected future flows, and treatment capacity data from the different wastewater municipalities. This section also provides information on existing and proposed water reuse projects for each wastewater agency.

Solid Waste

The Solid Waste section describes the existing quantities of waste generated, solid waste inflow and outflow, and existing and planned disposal facilities in the County. Data was collected from the California Integrated Waste Management Board and the County of San Bernardino Department of Public Works Solid Waste Management Division.

Law Enforcement

The Police section describes existing law enforcement conditions (crime statistics, number and location of police stations) in San Bernardino County. Primary data sources for this section were the

San Bernardino County Sheriff's Department, Fedstats (official statistical information source for more than 100 Federal agencies), and the California Department of Justice.

Fire Protection

The Fire section focuses primarily on the infrastructure in place for fire protection within the County. All other Fire issues -- including a description of the current fire hazard conditions in the county, an account of the assets at risk due to fire hazards, and details of existing fire protection services -- are discussed in the Safety Background Report. The San Bernardino County Fire Department and the San Bernardino County Special Districts Department were contacted to gather data for this section.

Natural Gas

The Natural Gas section describes the existing natural gas system and the projected demand for natural gas in the County. Data for this section was collected from the California Public Utilities Commission, the California Energy Commission, Southern California Gas Company, Kern River Gas Transmission Company, and other service providers.

Electricity

The Electricity section describes the existing electricity system, electricity consumption, and the type of electricity customers in San Bernardino County. Data was collected from the California Public Utilities Commission, California Energy Commission, Southern California Edison, Bear Valley Electric Service, Colton Public Utilities, and the City of Needles.

Health Care

The Health Care section describes existing health care facilities in the County. Existing capacity and future demand for health care facilities in the County are also identified. The primary data sources for this section were the County Department of Public Health and the County Land Use Services Department.

Telecommunications

The Telecommunications section describes existing telecommunication facilities and providers in the County. Telecommunications services include land-based telephone service, cellular services, and broadband communications (i.e., cable, Digital Subscriber Line). Information was primarily obtained from the California Public Utilities Commission (CPUC), Federal Communications Commission (FCC), the California Energy Commission (CEC), and San Bernardino County Planning Department.

Libraries

The Libraries section describes the existing County library system. Data for this section was collected from the San Bernardino County Library Division.

Education

The Schools section identifies public school districts in the County and their levels of enrollment. It also provides a general overview of students, staff, and the type of schools in the County. Data for this section was collected from the San Bernardino County Superintendent of Schools, the California Department of Education, and the California Postsecondary Education Commission.

2.2 IDENTIFICATION OF PUBLIC CONCERNS

2.2.1 CIRCULATION[1]

The main issue raised by both residents and county officials during the public workshops was the need for the cities of San Bernardino County to work together to develop a common vision towards planning for future growth. This vision would need to encompass specific items such as the development of adequate transportation infrastructure to accommodate the projected growth expected over the next 20 years, recognition of San Bernardino County's transition towards becoming a distribution hub and the retention of the unique qualities that initially brought and continue to bring residents to the area.

The growth-related issues centered around three specific items: the need for adequate services, advanced planning for future growth and enhancement of current operating efficiencies. The first two items were of greater concern for communities in the Mountain and Desert regions while communities in the Valley region were more concerned with improving the existing infrastructure network. Specific examples given were a perceived lack of emergency response services, the absence of viable transportation alternatives, roadway improvement projects that were not completed or inadequately designed for future needs and existing roadways that are experiencing congested conditions.

Residents of all three regions expressed concern about San Bernardino County's evolution as a regional center for transportation and distribution services. Examples related to freight traffic such as designated truck routes and parking areas, noise impacts from train and cargo plane activities and the impact these operations have on regional air quality and congestion were recorded at numerous workshops.

Issues regarding San Bernardino County's unique environmental setting were raised. Residents of the Mountain and Desert communities were primarily concerned about the possible degradation of air quality, intrusion of infrastructure into wilderness areas and loss of rural atmosphere (i.e. street lights, curbs, gutter, etc.). Valley residents identified the conflict between preservation and utilization of open space as a primary issue for resolution.

[1] Many of the issues discussed above were also identified as issues for other background reports. Related discussions can be found in "Identification of Public Concerns" section of other background reports

2.2.2 INFRASTRUCTURE

Residents in all the three regions of the County expressed concerns during the community meetings regarding strained existing infrastructure due to rapid growth in the County, and the limited infrastructure capacity to support projected growth. Many unincorporated areas throughout the County are not served by a reliable source of water, sewers, and public roads.

The Mountain communities voiced concerns especially about emergency access to their communities. (In most instances, Mountain communities have unpaved and narrow [12 feet wide] roads.) The lack of public services is also apparent in the remote Desert communities. In Desert areas, provision of services is made difficult by the distances between the communities and the inaccessibility of some of these communities. Desert residents cited access to healthcare facilities as another infrastructure constraint.

Other public services needing attention in the County include schools and community parks. The unincorporated County areas also lack in entertainment and commercial facilities for the residents.

2.3 EXISTING CONDITIONS

2.3.1 CIRCULATION

San Bernardino County is located on the eastern edge of the Los Angeles Metropolitan Region. In this location, the county acts as the gateway between Southern California and the continental United States. It is also the largest county within the continental United States by area, containing three very distinct regions - Valley, Mountain and Desert. The vast majority of travel trips in the County are made by the automobile, using the existing network of freeways and arterial highways. Transit (bus and commuter rail) service is also an increasingly important mode of transportation in the more urbanized parts of the County. A small fraction of the trips are made utilizing other modes of transportation such as air, intercity rail, bicycling and walking.

Currently, the Port of Los Angeles and the Port of Long Beach are two of the busiest ports in the world and, as a result, a large portion of goods traveling into and out of the United States pass through the County either by truck or rail. San Bernardino County has two major railroad corridors that provide access to cargo and products between the Ports of Los Angeles and Long Beach and the rest of the country. Cargo operations are aided by two large-scale railroad classification yards and a state-of-the-art intermodal transfer facility located within the County.

Other rail infrastructure includes portions of three commuter rail lines, traveling between Los Angeles and Orange Counties, and two transcontinental routes operated by Amtrak. The County has also been identified as one of the prime locations for the development of magnetic levitation high-speed rail, Maglev, in the near future.

The aviation industry also has a strong presence in San Bernardino County with a total of 44 public and private airports and 25 heliports. Included in these are Ontario International Airport, one of the

fastest growing commercial airports in the United States, Southern California Logistics Airport, a new intermodal gateway for air freight just beginning to develop, and Cable Airport, the largest privately-owned airport in the United States.

2.3.1.1 ROADWAY SYSTEM

There is currently over 10,000 miles of roadways located within San Bernardino County. These facilities fall under the jurisdiction of one of the three governmental agencies responsible for construction and maintenance of roadway infrastructure. The State of California Department of Transportation (Caltrans) is responsible for maintaining approximately 1,240 miles of roadway throughout the county. This total includes six federal (Interstate) freeways, two federal (US) highways and eighteen state highways. The San Bernardino County Department of Transportation is responsible for maintaining approximately 2,830 miles of both paved and unpaved roadways primarily located in unincorporated areas of the county. These facilities range in classification from major arterial highways to local streets. The remaining 5,930 miles of roadways within San Bernardino County fall under the jurisdiction of the numerous incorporated municipalities located across the County. These facilities range in classification from major arterials to local streets. **Figure 2-1A** through **Figure 2-1C** show the extensive roadway network that currently exists in the Valley, Mountain and Desert regions, respectively. **Figure 2-2A** through **Figure 2-2C** show the roadway network that is currently under County jurisdiction in the three regions.

The presence of three levels of jurisdiction, as well as the large number of local municipalities, creates the need for consistent roadway designations and design standards to facilitate connectivity and continuity across the county. The previous General Plan Circulation Element revealed that inconsistencies were present between the County's roadway standards and the cities located within its boundaries. Specific differences occurred in roadway designations, right-of-way (ROW) distances and curb-to-curb separation distances. The roadway standards provided in the previous General Plan Circulation Element are presented below in **Table 2-1**.

Figure 2-1A. Major Roads and Freeways – Valley Region

Figure 2-1B. Major Roads and Freeways – Mountain Region

Figure 2-1C. Major Roads and Freeways – Desert Region

Figure 2-2A. Major Roads under County Jurisdiction – Valley Region

Figure 2-2B. Major Roads under County Jurisdiction – Mountain Region

Figure 2-2C. Major Roads under County Jurisdiction – Desert Region

Table 2-1. Jurisdictional Roadway Designations and Standards

Jurisdiction	Roadway Designations and Standards ROW / Curb-to-curb Separation		
	Major Divided Highway	Major Highway	Secondary Highway
East Valley Region			
County	120' / 94' (includes 18' median) Major Arterial: 120' / 104'	104' / 80'	88' / 64'
Colton	NA	96' / 72'	88' / 64'
Grand Terrace	120' / 94'	100' / 72'	88' / 64'
Highland	104' / 88'	104' / 80'	88' / 64'
Loma Linda	Scenic Hwy: 120' / 76'	100' / 72'	88' / 64'
Redlands	Special Major: Variable / variable	120' -80' / 72'	88' – 80' / 64'
Rialto	120' / 94'	110' – 100' / 96' – 72'	88' / 64'
San Bernardino	100' / 82'	100' / 80' – 72'	88' – 80' / 66' – 60'
Yucaipa	114' / 92'	100' / 80'	88' / 64'
West Valley Region			
Chino	Urban Primary Arterial: 132' – 100' / 86' – 72'	Rural Primary Arterial: 100' / 52'	Urban Sec. Arterial: 88' / 64' Rural Sec. Arterial: 88' / 52'
Chino Hills	110' / 86'	104' / 80'	88' / 64'
Fontana	120' / 76'	100' / 72'	88' / 64'
Montclair	125' – 90' / variable	≥100' / variable	100' – 88' / variable
Ontario	120' / 80'	100' / 76'	88' / 64'
Rancho Cucamonga	120' / 94'	100' / 76'	88' – 74' / 64'
Upland	NA	214' – 100' / 160' – 72'	132' – 66' / 74' –40'
Mountain Region			
County	Mountain Expressway: 104'	Mountain Major: 80' / 64'	Mountain Sec.: 60' / 44'
Big Bear Lake	NA	80' / 64'	60' / 44'
Desert Region			
Adelanto	NA	100' / 80'	60' / 36'
Apple Valley	142' / 112'	104' / 80'	80' / 64'
Barstow	NA	125' – 60' / 84' – 40'	100' – 50' / 84' –40'
Hesperia	120' / 104'	100' / 84'	80' / 64'
Needles	NA	100' / 72'	88' – 80' / 64'
Victorville	Parkway: 100' / 80'	100' / 80'	84' / 64'
Twentynine Palms	128' / 108'	104' / 80'	80' / 64'
Yucca Valley	120' / 94' (includes 18' median) Major Arterial 120' / 104'	104' / 80'	88' / 64'

Through the 1989 General Plan and 2002 Revised General Plan, the inconsistencies noted above were rectified by the development of uniform roadway standards for all jurisdictions in the county. These standards are provided in **Table 2-2** and will be reviewed to determine their applicability to the existing transportation needs within their specific locations in the County's three regions, Valley, Desert and Mountain.

Table 2-2. San Bernardino County Highway Design Standards

Highway Designation	Number of Lanes	Right-of-Way Width	Curb-to-Curb Separation
Freeway	Variable (per Caltrans)	Variable (per Caltrans)	Variable (per Caltrans)
Major Arterial Highway	6	120' minimum	104'
Major Divided Highway	4	120'	94'
Major Highway/Mountain Expressway	4	104' minimum	80'
Secondary Highway	4	88'	64'
Controlled/Limited Access Collector	2	66'	44'
Mountain Major Highway	4	80'	64'
Mountain Secondary Highway	2	60'	44'
State Highway (special standards/conditions)	Variable (per Caltrans)	Variable (per Caltrans)	Variable (per Caltrans)
Collector Street	2	66'	44'
Industrial Local Street	2	60'	44'
Local Street	2	60'	40'
Mountain Collector	2	50'	--
Mountain Local	2	40'	--

Note –
For additional details of the above-listed highways, refer to the San Bernardino County Standards and Specifications Manual.
Collector and Local streets are not shown in the General Plan Transportation/Circulation Maps.

Roadway Descriptions

The following roadways are considered to be major transportation corridors and routes within San Bernardino County. A brief description of each facility and, if available, its current lane configuration, average daily traffic volume (ADT) and operating level of service (LOS) for the specified time period are provided.

Freeways

Descriptions of the interstate freeway facilities located in San Bernardino County are provided below.

San Bernardino Freeway (I-10) – The San Bernardino Freeway travels east-west across the southern edge of Valley Region in San Bernardino County. This facility provides access to Los Angeles to the west and Phoenix, Arizona to the east.

Ontario Freeway (I-15) – The Ontario Freeway extends north from the San Diego metropolitan area through the western portion of San Bernardino County and continues in a north-easterly direction to Las Vegas, Nevada.

State Route 30 (SR-30) – State Route 30 provides an alternative connection between I-10 and I-215 for residents of eastern San Bernardino and Highland. This facility currently extends easterly from Sierra Avenue to State Route 330 then turns southward and continues to its junction with the I-10 Freeway. SR-30 will become the eastern section of SR-210 and be expanded to three lanes in each direction once construction is completed.

Needles Freeway (I-40) – The Needles Freeway splits from I-15 just east of Barstow and continues east until the Arizona State Line. This facility is a major trucking route providing access to Los Angeles to the west and Flagstaff, Arizona to the east.

The Pomona Freeway (SR-60) – The Pomona Freeway splits from and rejoins I-10 as it travels through the Inland Empire. SR-60 provides the Inland Empire with access to the Los Angeles metropolitan area to the west and Riverside County to the east. In 1997, a 10 mile segment of HOV facilities were opened along the portion of roadway located in the cities of Chino and Ontario as well as a portion located on unincorporated county land southeast of Ontario.

Chino Valley Freeway (SR-71) – The Chino Valley Freeway travels southeast from the I-10/SR-210 Interchange in San Dimas to Riverside Freeway (SR-91) in Corona. This facility serves as a major commuter route between the Inland Empire and Orange County.

State Route 210 (SR-210) – State Route 210 begins as an interchange with the Golden State Freeway (I-5) in Los Angeles County and continuing east across the Valley region to its terminus at Sierra Avenue. Construction is currently in progress to extend this facility to I-215. In the future, SR-210 will be extended eastward to SR-30 and that facility will become the eastern segment of SR-210

Interstate 215 (I-215) – Interstate 215 is a facility that provides an alternative route to I-15 through San Bernardino County by splitting from I-15 near Devore and reconnecting south in Riverside County.

State Route 259 (SR-259) – State Route 259 is a connector route that begins just south of 16th Street in the city of San Bernardino and continues northward until it merges with State Route 30.

State Highways

Descriptions for state highway facilities located in San Bernardino County are provided below.

Angeles Crest Highway (SR-2) – The Angeles Crest Highway is a rural highway that travels from State Route 210 in La Canada Flintridge northeast to Pearblossom Highway (SR-138). This roadway is primarily used as access into the Angeles Crest National Forest.

Waterman Avenue / Rim of the World Highway / Happy Trails Highway / Palmdale Road (SR-18) – The portion of this roadway from SR-30 to Big Bear Lake is a major access route into the Lake Arrowhead and Big Bear Lake resorts. This facility continues north and then east along the southern shore of Big Bear Lake. Beyond Baldwin Lake, it turns northwest and travels to the SR-247 junction in Lucerne Valley where it turns west continuing to Central Road in Apple Valley. This facility continues west from Central Road in Apple Valley as Happy Trails Highway until it becomes D Street in Victorville and eventually reaches I-15. SR-18 merges with I-15 and continues south to Palmdale Road where it turns westward until it merges with SR-138 just west of the San Bernardino County Line. From I-15 to it junction with SR-138, this roadway provides a direct connection between Victorville and Palmdale. This segment also operates as a bypass for trucks making deliveries in the western portion of the Los Angeles Metropolitan Region.

Mill Creek Road / North Shore Drive (SR-38) – This facility is a major access route to the Big Bear Lake area. From I-10, SR-38 travels north, as Orange Avenue, and east, as Lugonia Avenue, out of the City of Redlands into unincorporated county land, passing through the community of Mentone where it is named Mentone Boulevard. East of Mentone, SR-38 becomes Mill Creek Road and continues traveling northeast into the San Bernardino National Forest until the junction with SR-18 just east of Big Bear Lake. From this junction, SR-38 continues west past Big Bear Lake as North Shore Drive before terminating at SR-18 just west of Big Bear Lake.

Mojave-Barstow Highway (SR-58) – The Mojave-Barstow Highway originates in Barstow at I-15 and travels west through Kern County to Mojave in Los Angeles County. This facility provides a connection between Barstow and Mojave. It also provides some relief to I-15 during periods of severe congestion.

Twentynine Palms Highway / Aqueduct Road (SR-62) – Twentynine Palms Highway (SR-62) travels along the extreme southern edge of San Bernardino County. SR-62 extends north from I-10 out of Riverside County and continues east through Yucca Valley all the way to the Arizona State Line. This rural highway provides access to Yucca Valley, Twentynine Palms and Joshua Tree National Park.

Foothill Boulevard (US-66/SR-66)/ 5th Street / Greenspot Road / Florida Street – This corridor is a major thoroughfare across the entire northern portion of the Los Angeles Metropolitan Area. In San Bernardino County, it begins as Foothill Boulevard at the Los Angeles County line and is classified as a state highway (US-66/SR-66). It extends eastward through the cities of Upland, Rancho Cucamonga, unincorporated San Bernardino County, Fontana and Rialto. After entering the City of San Bernardino, it becomes 5th Avenue, a primary arterial, and continues east into the City of Highland. East of Boulder Avenue, this roadway becomes Greenspot Road, a secondary arterial, and continues through the eastern portion of the City of Highland. At the edge of East Highlands, the classification is again changed to a minor arterial or residential street. Greenspot Road continues south and east until becoming Florida Street. The terminus of this corridor is

Florida Street which is located in the extreme eastern portion of the City of Highlands and links to Mill Creek Road (SR-38) through Garnett Street.

Euclid Avenue (SR-83) – Euclid Avenue (SR-83) is a north-south arterial that travels through the Valley Region of San Bernardino County. This roadway provides direct connections between 19th Street (SR-30), Foothill Boulevard (SR-66), the San Bernardino Freeway (I-10), the Pomona Freeway (SR-60) and the Chino Valley Freeway (SR-71).

State Route 127 (SR-127) – This rural highway extends north from I-15 in Baker and continues through Inyo County to the Nevada State Line. It is primarily used to provide access to Death Valley National Monument from the east and to other rural properties located in southeastern Inyo County.

Pearblossom Highway (SR-138) – Pearblossom Highway is a rural highway that travels southeast from Palmdale in Los Angeles County to an interchange with I-15 at Cajon Junction. This segment provides a connection between the Antelope Valley and Apple Valley for commuters and commercial traffic. SR-138 continues east and then south from I-15 through the San Bernardino National Forest until it terminates at Rim of the World Highway (SR-18). This segment provides access to the Lake Arrowhead and Big Bear Lake resorts from the northwest.

Carbon Canyon Road / Chino Hills Parkway (SR-142) – This corridor is designated as a state highway (SR-142) and extends southwest through the cities of Chino and Chino Hills. This facility provides a direct connection between San Bernardino County and Orange County.

State Route 173 (SR-173) – This rural highway extends north from Rim of the World Highway (SR-18) and continues counterclockwise around Lake Arrowhead before terminating at SR-138 just northwest of Silverwood Lake. The portion of roadway between Willow Creek Jeep Trail and Pacific Crest National Scenic Trail is unpaved.

State Route 189 (SR-189) – This rural highway splits from Rim of the World Highway (SR-18) and continues east until it terminates at a junction with SR-173. This facility provides access to residential properties in the Twin Peaks and Blue Jay communities.

Barstow Road / Old Woman Springs Road (SR-247) – Barstow Road (SR-247) is a north-south rural highway that originates at I-15 and provides access between Barstow and Lucerne Valley. Old Woman Springs Road (SR-247) travels southeast from Lucerne Valley to Yucca Valley and terminates at SR-62.

City Creek Road (SR-330) – City Creek Road (SR-330) originates as an interchange with SR-30. It is located at the southward turn in the SR-30 alignment and is currently a divided freeway until just north of Highland Avenue. From Highland Avenue, this facility continues north and east as a rural highway until it terminates at a junction with SR-18 in the Running Springs community. This roadway operates as an alternative access route for the Lake Arrowhead and Big Bear Lake areas.

Federal US Highways

Descriptions for federal highway facilities located in San Bernardino County are provided below.

United States Highway 95 (US 95) – US 95 is a rural highway that travels along the extreme eastern border of San Bernardino County. This facility provides a connection between Las Vegas, Nevada, I-15, I-40 and I-10.

Three Flags Highway (US 395) – This roadway is a rural highway that extends from Cajon Pass in Hesperia north through Victorville and continues along the eastern edge of the Sierra Nevada Mountains. This facility is a connection between I-15, SR-18 and SR-58.

Roadway Facilities

Descriptions for major roadway facilities located in San Bernardino County are provided below.

Valley – East / West Facilities

16th Street / Base Line Road – This primary arterial extends across the entire Valley Region of San Bernardino County. It operates as an east-west connector for the cities of Upland, Rancho Cucamonga, Rialto, San Bernardino and Highland.

19th Street (SR-30) – Nineteenth Street originates in Upland just west of Mountain Avenue and extends to just east of Haven Avenue in Rancho Cucamonga where it terminates at San Benito Avenue. The entire segment between Mountain Avenue and Haven Avenue is classified as a state highway (SR-30) from Mountain Avenue to Haven Avenue.

2nd Street – This secondary arterial is located in the City of San Bernardino and extends from Mount Vernon Avenue to Waterman Avenue. This street provides access to the San Bernardino Metrolink station and Park & Ride lot as well as San Bernardino International Airport from I-215.

3rd Street – Third Street is a secondary arterial that provides access to the San Bernardino Metrolink station, Park & Ride lot and San Bernardino International Airport. This street begins just east of Mount Vernon Avenue and extends eastward to Palm Avenue, traveling just to the north of San Bernardino International Airport.

4th Street – This roadway is located in the city of Ontario. It operates as a primary arterial and is a major east-west link across the city. This facility extends both to the east and west outside the City of Ontario as San Bernardino Avenue.

5th Avenue / Sand Canyon Road – This facility begins in the City of Redlands just east of I-10 and continues eastward into unincorporated San Bernardino County. At this point the roadway turns southeast and becomes Sand Canyon Road, continuing to the City of Yucaipa. This roadway provides direct access to Crafton Hills College and acts an alternative route to I-10 as it passes from the City of Redlands into the City of Yucaipa. It is currently classified as a secondary arterial.

40th Street – Fortieth Street originates from Kendall Drive in the City of San Bernardino and extends eastward until eventually turning south and becoming Del Rosa Avenue. This roadway provides an east-west thoroughfare across the northern portion of the City of San Bernardino.

Agua Mansa Road – This secondary arterial travels through the southern portion of the City of Colton and provides a connection into Riverside County.

Arrow Highway / 8th Street – Arrow Highway is a primary arterial that travels through the city of Montclair and becomes 8th Street once it enters the city of Upland. This facility parallels the Burlington Northern Santa Fe (BNSF) rail line upon which the Metrolink San Bernardino Line operates. Arrow Highway / 8th Street provides access to both the Montclair Transportation Center and the Upland Metrolink station. This facility is also a major corridor for commuters traveling west into Los Angeles County.

Arrow Route - This roadway is a major connector that provides access to several communities within the Valley Region of San Bernardino County. It begins at the Los Angeles County line in Upland and extends through Rancho Cucamonga, unincorporated San Bernardino County, Fontana and ends in Rialto.

Barton Road / Washington Street / Brookside Avenue / Citrus Avenue – This corridor begins at La Cadena Drive in the city of Grand Terrace and continues eastward along the border between the cities of Colton and San Bernardino, where its name is changed to Washington Street. After entering the city of Loma Linda its name returns to Barton Road and it continues into the city of Redlands. In the city of Redlands, its name is changed again to Brookside Avenue and finally to Citrus Avenue.

Bloomington Avenue – This primary arterial provides a connection between I-10 and the Rialto Metrolink station. It is also a connection between the two major north-south thoroughfares of Cedar Avenue and Riverside Avenue in the city of Rialto.

Colorado Street – This secondary arterial is a link between Oak Glen Road and Wildwood Canyon Road and acts as a reliever for traffic utilizing I-10 through the city of Yucaipa.

Colton Avenue / Inland Center Drive – This primary arterial is located between the cities of San Bernardino and Colton.

Edison Avenue – This roadway begins just east of SR-71 in the city of Chino and extends eastward through the city of Ontario. It is classified as a primary arterial.

Grand Avenue – This primary arterial extends from the boundary between the cities of Chino and Chino Hills westward through Chino Hills into Los Angeles County.

Highland Avenue – Highland Avenue passes through the cities of Rancho Cucamonga, Fontana, Rialto, San Bernardino and Highland. This roadway originates as a secondary arterial at Amethyst Street in the City of Rancho Cucamonga and continues east to Milliken Avenue. From Milliken Avenue, it continues as a minor arterial until it reaches Rochester Avenue. Between Rochester

Avenue and Etiwanda Avenue, Highland Avenue is once again a secondary arterial. At Etiwanda Avenue, this roadway returns to a minor arterial until the SR-210 and I-15 interchange. For the segment east of this interchange to Sierra Avenue, Highland Avenue becomes a secondary arterial. At Sierra Avenue, this roadway becomes a state highway (SR-30) and continues until just east of California Street where SR-30 turns north, just before I-215. At this point, Highland Avenue becomes a primary arterial and continues to Boulder Avenue in the City of Highland. The roadway then reverts back to a secondary arterial until it reaches Church Street. East of Church Street, Highland Avenue becomes a minor arterial before terminating at Pleasant View Lane.

Holt Boulevard – Holt Boulevard is a primary arterial that originates in the City of Pomona and provides a connection between SR-71 and I-10 as well as access to Ontario International Airport.

Jurupa Street / Jurupa Avenue – Jurupa Street originates at Archibald Avenue and continues east to Etiwanda Avenue as a secondary arterial. From Etiwanda Avenue to Mulberry Avenue, this roadway becomes Jurupa Avenue, a minor arterial. At Mulberry Avenue, it returns to a secondary arterial and continues to Sierra Avenue.

Live Oak Canyon Road – This facility is a secondary arterial located at the extreme southern edge of San Bernardino County. It provides a connection between San Timoteo Canyon Road and I-10 in the City of Redlands.

Lugonia Avenue / Mentone Boulevard / Mill Creek Road – Lugonia Avenue begins at Mountain View Avenue as a secondary arterial and extends eastward across the City of Redlands. At Orange Street, it becomes a state highway (SR-38) before entering unincorporated San Bernardino County. At this point, it becomes Mentone Boulevard and eventually Mill Creek Road. This roadway is one of the primary access routes to Big Bear Lake and the surrounding communities.

Merrill Avenue / Mill Street – Merrill Avenue originates as a secondary arterial at Cherry Avenue in unincorporated San Bernardino County west of the City of Fontana. At Fontana Avenue, the classification is changed to primary arterial and continues eastward to Riverside Avenue. The classification returns to secondary arterial and will continue as such until reaching Mount Vernon Avenue. From Mount Vernon Avenue to its terminus at Tippecanoe Avenue, this roadway is again classified as a primary arterial.

Mission Boulevard – This roadway is a primary arterial that parallels the Union Pacific rail line for its entire distance across San Bernardino County. It is a major thoroughfare across the county and provides access to Ontario International Airport.

Oak Glen Road – This roadway is a secondary arterial that begins at I-10 and travels northeast through the City of Yucaipa and eventually turns south into Riverside County.

Redlands Boulevard – Beginning just east of the I-215 and I-10 interchange, Redlands Boulevard is a primary arterial that parallels I-10 as it crosses the City of Redlands. This facility provides drivers with an alternative to I-10 if congestion or delay is encountered.

Riverside Drive – Riverside Drive is a primary arterial that originates at SR-71 just outside the southern boundary of the City of Pomona. It extends eastward paralleling SR-60 through the cities of Ontario and Chino until terminating just inside Riverside County at Etiwanda Avenue. This facility provides an alternative route to avoid congestion or delay on SR-60.

San Bernardino Avenue / 4th Street – This roadway extends across a large portion of San Bernardino County and travels through the cities of Montclair, Ontario (as 4th Street), Rancho Cucamonga, unincorporated San Bernardino County, Fontana and Rialto before ending in the City of Colton. San Bernardino Avenue begins again in the City of San Bernardino at Tippecanoe Avenue and continues east through the City of Redlands and into unincorporated San Bernardino County.

Slover Avenue – Slover Avenue parallels the I-10 Freeway on the south, extending from Etiwanda Avenue east to Pepper Avenue. A majority of this facility is located in unincorporated San Bernardino County with small segments passing through the Cities of Fontana and Rialto.

Wildwood Canyon Road – Wildwood Canyon Road is a secondary arterial that extends through the southern portion of the City of Yucaipa. It is a connection between I-10 and Oak Glen Road.

Valley Boulevard – This facility is a primary arterial that runs parallel to the I-10 Freeway to the north. Beginning just east of Etiwanda Avenue, this roadway continues east through unincorporated San Bernardino County and the Cities of Fontana and Rialto before terminating at Mount Vernon Avenue in the City of Colton.

Yucaipa Boulevard – This roadway originates at I-10 and extends through the central portion of the City of Yucaipa.

Valley – North / South

14th Street – This roadway is a minor arterial / residential street located between Yucaipa Boulevard and Oak Glen Road in the City of Yucaipa.

Alabama Street – Alabama Street is a primary arterial that extends from Third Street in the City of Highland to Barton Road in the City of Redlands. This roadway is a relief route to SR-30 through the City of Highland.

Alder Avenue – Alder Avenue is a north-south connector that provides access along the eastern boundary of the City of Fontana. This facility is a secondary arterial that extends from Baseline Road to San Bernardino Avenue. Continuing south into unincorporated San Bernardino County, this roadway becomes a residential street.

Archibald Avenue – This primary arterial extends from Hillside Road in the City of Rancho Cucamonga, through the City of Ontario and into Riverside County. This facility is a major north-south corridor across San Bernardino County that provides access to both SR-210, I-10 and SR-60 as well as Ontario International Airport.

Bryant Street – Located in the City of Yucaipa, Bryant Street is a primary arterial from Mill Creek Road to Wildwood Canyon Road. This facility is the easternmost major thoroughfare in the city of Yucaipa.

Cajon Boulevard – Cajon Boulevard begins in unincorporated San Bernardino County just southeast of the I-15 and I-215 interchange. This major arterial extends southeast through the City of San Bernardino before becoming Mount Vernon Avenue. This roadway parallels I-215 and also located along Historic Route 66.

California Street / San Timoteo Canyon Road – California Street originates just south of the Santa Ana River in the City of Redlands as a minor arterial. This roadway becomes a secondary arterial from San Bernardino Avenue to Barton Road. From Barton Road, this roadway, now titled San Timoteo Canyon Road, becomes a primary arterial and extends southeast into Riverside County.
Cedar Avenue – Cedar Avenue is a primary arterial from Baseline Road to Bloomington Avenue, just south of the City of Rialto in unincorporated San Bernardino County. South of Bloomington Avenue, this roadway continues into Riverside County as a primary arterial.

Central Avenue – This corridor travels through the cities of Upland, unincorporated San Bernardino County, Montclair and Chino along the western edge of San Bernardino County. Beginning at Foothill Boulevard just south of Cable Airport, this facility provides a north-south connection between I-10, SR-60 and SR-71.

Cherry Avenue – This facility is located almost entirely within the City of Fontana with a portion traveling through unincorporated San Bernardino County. This roadway extends from north of I-15 south to Slover Avenue as a primary arterial. From Slover Avenue to Mulberry Avenue, it is reduced to a secondary arterial. This facility provides a connection between SR-210 and I-10 and access to The California Speedway.

Citrus Avenue – Citrus Avenue is located in the City of Fontana and extends from just south of I-15 at Duncan Canyon Road to Slover Avenue as primary arterial. From Slover Avenue, this roadway becomes a secondary arterial and continues to Jurupa Avenue.

Del Rosa Drive / Del Rosa Avenue – Del Rosa Avenue begins at 39th Street in the City of San Bernardino and extends south to San Bernardino International Airport. This secondary arterial provides direct access to the airport from SR-30.

E Street – This facility is a primary arterial that begins at Kendall Drive in the City of San Bernardino and extends south to I-10. Traveling parallel to I-215, E Street operates as an alternative to I-215 during periods of congestion and delay. It also provides access to SR-30 and I-10.

Etiwanda Avenue – Etiwanda Avenue is a primary arterial located in the cities of Rancho Cucamonga, Ontario, Fontana and unincorporated San Bernardino County. This roadway provides direct access to I-10 and SR-60 in Riverside County.

Garnet Street – Garnet Street is a minor arterial located on the eastern edge of the Foothill Boulevard east-west corridor. This facility connects Florida Street to Mill Creek Road (SR-38).

Grove Avenue – This roadway is a secondary arterial that extends from Foothill Boulevard in the City of Upland south to the Chino Airport in the City of Ontario. South of the airport, it continues to Pine Avenue in unincorporated San Bernardino County.

Haven Avenue – Haven Avenue is a primary arterial located in the City of Rancho Cucamonga and extending through the City of Ontario. This roadway provides direct access to SR-210, I-10 and SR-60.

Hunts Lane – Located at the terminus of E Street just east of the I-10 and I-215 interchange in the City of San Bernardino, Hunts Lane is a primary arterial between E Street and Redlands Boulevard. South of Redlands Boulevard to Barton Road, Hunts Lane is classified as a secondary arterial.

Kendall Drive – This secondary arterial is located in the northern portion of the City of San Bernardino and extends from Cajon Boulevard southeast to I-215 at North Palm Avenue. From Palm Avenue, it continues southeast as a primary arterial to its terminus at E Street. This facility is an alternate route for traffic traveling along I-215.

La Cadena Drive – La Cadena Drive splits from Mount Vernon Avenue in the City of Colton and continues south to I-10. From I-10, this roadway continues southwest until merging with I-215 at the Riverside County Line.

Milliken Avenue –This roadway extends from Banyan Street, north of SR-210, to Riverside Drive, south of SR-60, and provides direct access to SR-210, I-10 and SR-60. Milliken Avenue is a secondary arterial

Monte Vista Avenue – Monte Vista Avenue begins at SR-210 in Los Angeles County and travels south through the cities of Montclair and Chino. Between SR-210 and I-10, this roadway is classified as a primary arterial

Mountain Avenue – The northern terminus of this roadway is with Mt. Baldy Road at the Los Angeles County line. From here, Mountain Avenue crosses a portion of unincorporated San Bernardino County and the cities of Upland and Ontario before ending at Edison Avenue in the City of Chino. This facility is classified as a primary arterial except for the segment between 19th Street and 16th Street which is classified as a state highway (SR-30).

Mountain View Avenue – This roadway is located on the boundary between the cities of San Bernardino and Redlands and within the City of Loma Linda. Beginning at San Bernardino Avenue, Mountain View Avenue extends south to Beaumont Avenue. It is classified as a secondary arterial for its entire length.

Mount Vernon Avenue – Mount Vernon Avenue begins as a secondary arterial at Highland Avenue and travels south through the cities of San Bernardino, Colton and Grand Terrace before entering Riverside County. From Highland Avenue to I-215 just north of the City of Grand Terrace, this facility is classified as a primary arterial.

Mulberry Avenue – This roadway extends from Slover Avenue to the Riverside County Line in the City of Fontana. It is a secondary arterial.

Orange Street / Boulder Avenue – Boulder Avenue is a divided primary arterial located in the City of Highland, just east of SR-30, and extends southward from Highland Avenue to Lugonia Avenue in the City of Redlands. From Lugonia Avenue to I-10, this roadway is classified as a state highway (SR-38) and a primary arterial from I-10 to Citrus Avenue.

Palm Avenue – This roadway is a primary arterial that extends from Highland Avenue in the City of San Bernardino to 5th Street in the City of Highland. It completes the relief corridor occupied by Alabama Avenue to the south.

Pepper Avenue – Pepper Avenue begins Baseline Street as a minor arterial in the City of San Bernardino and continues south to Foothill Boulevard where it becomes a secondary arterial. This classification holds for its entire remaining length to Slover Avenue in the City of Colton.

Rancho Avenue – Beginning at Foothill Boulevard / 5th Street in the City of San Bernardino, Rancho Avenue is a secondary arterial that travels southward through the City of Colton and terminates at La Cadena Drive.

Reche Canyon Road – This secondary arterial extends southeast from Barton Road in the City of Colton into Riverside County.

Riverside Avenue – Riverside Avenue is a primary arterial that extends across the Valley Region of San Bernardino County and continues into Riverside County. This major north-south corridor originates at Sierra Avenue, just south of I-15, in the City of Fontana. It extends to the southeast along the northeastern boundary of the City of Rialto before turning to the south east of Rialto Municipal Airport. As it passes through the Valley Region, it provides access to SR-30 and I-10 as well as the Rialto Metrolink station.

Sierra Avenue – Sierra Avenue is a major north-south corridor through the Valley Region of San Bernardino County. This roadway begins just north of I-15 in the extreme northern portion of the City of Fontana. It is a primary arterial and has interchanges with I-15, SR-210 and I-10 before it terminates just southeast of Armstrong Road in Riverside County.

Tippecanoe Avenue / Anderson Street – This roadway begins in the City of San Bernardino at Baseline Street as a secondary arterial. Continuing southward, Tippecanoe Avenue becomes a primary arterial at Third Street and extends to I-10. South of I-10, the roadway becomes Anderson Street and continues as a primary arterial to Barton Road.

Victoria Avenue – This secondary arterial is located in the cities of San Bernardino and Highland. It extends from Lynwood Drive to Third Street.

Wabash Avenue – Wabash Avenue extends from San Bernardino Avenue to Fifth Street in the City of Redlands as a secondary arterial and continues south to I-10 as a minor arterial.

Waterman Avenue – This roadway begins at the intersection of Sierra Avenue and Rim of the World Way (SR-18), just south of the San Bernardino National Forest. Traveling south, this roadway is designated as a state highway (SR-18) until reaching SR-30. Beyond SR-30, Waterman Avenue continues as a primary arterial. This roadway parallels I-215 and serves as an alternative route with direct access to I-10 before terminating at Barton Road.

Victor Valley

Arrowhead Lake Road – This primary arterial begins at the eastern terminus of Main Street in the City of Hesperia and continues south until its junction with SR-173. This roadway is a major corridor through the southeastern portion of the City of Hesperia.

Baldy Mesa Road – Baldy Mesa Road is a secondary arterial located between Phelan Road and Duncan Road / Bear Valley Road in the community of Phelan.

Bear Valley Road – Bear Valley Road is a major east-west corridor through the cities of Victorville, Hesperia and Apple Valley. This roadway begins at the eastern terminus of Duncan Road just west of the City of Victorville in unincorporated San Bernardino County. Traveling west, Bear Valley Road is a secondary arterial until it intersects with US 395. It continues as a primary arterial through its intersections with I-15 and Hesperia Road before terminating at SR-18 east of the City of Apple Valley.

Duncan Road - This secondary arterial extends from Baldy Mesa Road east to the western terminus of Bear Valley Road.

El Mirage Road – This roadway originates in Los Angeles County and continues eastward as a primary arterial through unincorporated San Bernardino County until it reaches the City of Adelanto. At Koala Road, this facility is reduced from a primary arterial to a minor arterial until it intersects with US 395.

Hesperia Road – Originating in the southern portion of the City of Hesperia, Hesperia Road is a north-south primary arterial that travels through the cities of Hesperia and Victorville. From Lime Street to Main Street in the City of Hesperia, this roadway is a secondary arterial. North of Main Street, it becomes a primary arterial and continues northward until terminating at D Street in the City of Victorville.

Main Street – Main Street is an east-west roadway that passes through the City of Hesperia. It begins just east of US 395 and intersects with I-15 and Hesperia Road before terminating at Arrowhead Lake Road.

National Trails Highway – National Trails Highway originates as an interchange with I-15 in the City of Victorville and continues north and east until terminating at Lenwood Road in the community of Lenwood, just southwest of the City of Barstow.

Palmdale Road – Palmdale Road (SR-18) splits from SR-138 in Los Angeles County and terminates at I-15 in the City of Victorville.

Phelan Road – This is an east-west facility that begins at SR-138 in the community of Phelan and continues east through unincorporated San Bernardino County until reaching US 395 where it becomes Main Street. This primary arterial intersects with Sheep Creek Road and Baldy Mesa Road

Sheep Creek Road – This primary arterial located in the western edge of unincorporated San Bernardino County. It extends between El Mirage Road to the north and SR-138 in the south.

Barstow

Barstow Road – This roadway is designated as a state highway (SR-247). Barstow Road begins at Main Street in the City of Barstow and provides access to I-15 and Barstow College before entering unincorporated San Bernardino County.

Main Street – Main Street is an east-west roadway that originates at I-40 and travels west through intersections with I-15, Barstow Road and SR-58 before becoming National Trails Highway (US 66).

Old Highway 58 – This primary arterial is located on the extreme northern edge of the City of Barstow. It begins at I-15 and continues west across the High Desert into Los Angeles County.

Needles

Needles Highway – This primary arterial is located in the northern portion of the City of Needles and provides access to I-40.

Overall Mobility Trends

According to mobility statistics from the Southern California Association of Governments (SCAG) 2004 Regional Transportation Plan (RTP), there are nearly 5.2 million daily person trips produced in San Bernardino County countywide, which is approximately 10 percent of the total daily trips generated in the five county southern California region. Of this total, nearly 780,000 are daily home-based work trips, nearly 550,000 school trips, close to one million shopping and recreation trips, just over one million other home-based trips and another 530,000 work-related other trips. The County residents own roughly one million vehicles. On the average, San Bernardino County residents make 10.35 trips per day per household, 5.4 trips per vehicle and 3.26 trips per day per capita. As far as the home-based work trips, the County residents make 1.54 daily work trips per household and 0.78 daily work trips per vehicle.

There are roughly 260,000 daily commute and 486,000 daily total trips made from San Bernardino County to Los Angeles County. Orange County is the second largest destination with 58,000 commute and over 105,000 total trips from the County. It is important to note, however, that as large as the out-commute figures are, a majority of the County's workers (52 percent) still work within San Bernardino County, and nearly 83 percent of all daily trips generated in the County, stay within the County.

Over 84 percent of the County's work trips are made by the automobile, of which 76 percent are single occupancy trips. Transit accounts for only 1.45 percent of work trips and 3 percent are non-motorized (bicycle and walk) trips. In comparison, 3.77 percent of all regional work trips are made

by transit. For daily trips of all kinds, the County residents use the automobile nearly 89 percent and transit only 0.66 percent of the time. This compares to the overall regional transit usage of 1.89 percent for all daily trips.

Operational Characteristics

Average daily traffic and level of service are two of the most critical factors utilized in determining how well a roadway facility operates. To provide a clearer picture regarding how these factors influence operational capacity, brief descriptions of each characteristic are provided below.

Average daily traffic volumes (ADT) for the roadways described above were obtained using two methodologies. The first approach is used when historical count data is present (preferred approach). A statistical analysis of the count data for the roadway segment is performed to obtain the average growth per year for the facility in question. The growth factor is then applied to the most recent count data available to obtain Base Year 2000 ADT. The second approach is used when count data for the roadway segment is unavailable. In this particular case, the 2000 Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) Model was used to determine the Year 2000 ADT. An analysis of adjacent roadways near the desired link is used to determine the percent difference between the model data and count data. The percent difference is then applied to the model data for the roadway in question to determine the Year 2000 ADT.

Level of service (LOS) is defined as a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Level of service indicators for the highway and roadway system are based on specific characteristics of traffic flow on designated sections of roadway during a typical day. For mainline freeway and roadway segments, these include overall traffic volume, speed and density. Several physical and operational characteristics of the roadway, such as lane configuration, free-flow speed (typical speed between intersections) and number of intersections per mile, are used to determine the vehicular capacity of the roadway segment. When these two sets of data are compared, a volume to capacity (V/C) ratio is calculated. These factors are then converted to an alpha descriptor identifying operating conditions and expressed as a level of service, or LOS, A through F. LOS A identifies the best operating conditions along a section of roadway and is characterized by free-flow traffic, low volumes and little or no restrictions on maneuverability. LOS F characterizes forced traffic flow with high traffic densities, slow travel speeds and often stop-and-go conditions. For intersections, LOS can be determined by using either the methodology described above or by using the average stopped delay (the amount of time a vehicle must wait at a signal) calculated at an individual intersection.

In a region as large and diverse as San Bernardino County, a consistent interpretation of LOS standards is very helpful in identifying and improving transportation facilities that are operating at an unacceptable LOS. Within San Bernardino County, there are 27 separate agencies responsible for maintaining specific portions of the transportation network and each utilizes its own set of LOS standards. The threshold at which a roadway segment or intersection is considered to operate at an

unacceptable LOS for each of the responsible agencies in San Bernardino County are presented in **Table 2-3**.

Table 2-3. Level of Service Operating Threshold for Acceptable Intersections Municipalities and Agencies Located in San Bernardino County

Jurisdiction	Level of Service Standards
Caltrans	LOS C
SANBAG CMP	LOS E
County	LOS C
East Valley Region	
Colton	LOS E
Grand Terrace	LOS C
Highland	LOS E
Loma Linda	LOS C
Redlands	LOS C
Rialto	LOS D
San Bernardino	LOS C
Yucaipa	LOS C
West Valley Region	
Chino	LOS D
Chino Hills	LOS D
Fontana	LOS C
Montclair	LOS D
Ontario	LOS D
Rancho Cucamonga	LOS D*
Upland	LOS D
Mountain Region	
Big Bear Lake	LOS D**
Desert Region	
Adelanto	NA
Apple Valley	LOS C
Barstow	LOS C
Hesperia	LOS D***
Needles	NA
Victorville	LOS D***
Twentynine Palms	LOS E
Yucca Valley	LOS C

* Approximately 20 intersections are allowed to operate at LOS E.
** LOS E becomes standard during peak hours on peak weekends.
*** The City also has a LOS standard of LOS C for roadway segments.

Information detailing the lane configurations, ADT volumes and LOS values for the roadway facilities described above are shown in **Table 2-4** through **Table 2-7**. This data is based on information obtained from the 2004 SCAG RTP model, Caltrans' 2003 traffic count data and the San Bernardino County Associated Governments (SANBAG) Congestion Management Program (CMP), 2003 Update. Figure 2-3A, through Figure 2-3C show ADT volumes for roadway facilities in

the Valley Mountain and Desert regions of unincorporated County and Figure 2-4A through Figure 2-4C show LOS values for the roadway facilities within these regions, respectively.

Table 2-4. Lane Configuration, Average Daily Traffic Volumes and Peak Hour Level of Service for Freeways Located in San Bernardino County

Roadway	Segment	Lane Configuration (No. of lanes each direction)	ADT Volume (000's)	LOS AM Peak Hour (EB-NB / WB-SB)	LOS PM Peak Hour (EB-NB / WB-SB)
Interstate 10	Los Angeles County Line to Euclid Ave	4 general traffic; 1 HOV	224 – 239	B-C / C-D	D / C
	Euclid Ave to I-15	4 general traffic; 1 HOV	214 - 232	B-C / C -E	C-D / C-D
	I-15 to Sierra Ave	4 general traffic; 1 HOV	186 - 189	C / D-E	D-E / D
	Sierra Ave to I-215	4 general traffic	173 - 179	C-E / C-D	C-D / C-E
	I-215 to SR-38	4 general traffic	141 – 187	A-E / C-F	D-F / A-D
	SR-38 to Riverside County Line	3 general traffic	73 - 122	A / A-E	A-D / A-B
Interstate 15	SR-60 to I-10	4 general traffic	172 - 175	E / C	E / D
	I-10 to SR-210	4 general traffic	90 – 150	A / A-E	B-E / A
	SR-210 to I-215	4 general traffic	80 – 90	A / A-D	B-E / A
	I-215 to US 395	4 general traffic	94 – 114	A / A-F	B-F / A-C
	US 395 to SR-18	3 general traffic	67 – 84	A / A	B-C / A
	SR-18 to Nevada State Line	2 general traffic	28 – 65	A / A-E	A-F / A-E
State Route 30	Sierra Ave to I-215	1-2 general traffic	14 - 26	A / A	A / A
	I-215 to SR-330	2-4 general traffic	34 – 87	A / A-B	A-B / A
	SR-330 to I-10	2 general traffic	44 – 57	A-C / A	A / A-C
Interstate 40	Barstow to Arizona State Line	2 general traffic	11 - 15	A / A	A / A
State Route 60	I-10 to I-10	4 general traffic, 1 HOV	180 - 201	A / D-E	D-E / B-D
State Route 71	SR-60 to SR-142	3 general traffic; 1 HOV	47 – 59	A / A	A / A
	SR-142 to Euclid Ave	2 general traffic; 1 HOV	36 – 40	A / A	A / A
	Euclid Ave to Riverside County Line	2 general traffic	33	A / A	A / A
State Route 210	Los Angeles County Line to I-15	3 general traffic; 1 HOV	110 – 141	A / B-E	D-E / A
	I-15 to Sierra Ave	3 general traffic; 1 HOV	34 - 52	A / A	A / A
Interstate 215	Riverside County Line to I-10	3 general traffic	147 – 162	E-F / F	F / D-E
	I-10 to SR-259	3-4 general traffic	123 - 160	A-C / E-F	E-F / C-F
	SR-259 to SR-30	3 general traffic	48 - 60	A / A	A / A
	SR-30 to I-15	2-3 general traffic	40 – 71	A / A-B	A-B / A
State Route 259	I-215 to SR-30	2 general traffic	52 - 67	A / C-D	C-D / A

Table 2-5. Lane Configuration, Average Daily Traffic Volumes and Peak Hour Level of Service for State Highways Located in San Bernardino County

Roadway	Segment	Number of lanes (Two-way Traffic)	ADT Volume (000's)	Peak Hour LOS (Both directions)
State Route 2	Los Angeles County Line to SR-138	2 general traffic	17 - 28	C-F
State Route 18	SR-30 to SR-138	4 general traffic	17 – 28	C-F
	SR-138 to Lakeview Dr.	2 general traffic	7 – 11	E
	Lakeview Dr. to SR-38 East	4 general traffic	16 – 17	C-E
	SR-38 East to Bear Valley Cutoff	2 general traffic	3 – 9	C-E
	Bear Valley Cutoff to US-395	4 general traffic	9 – 42	D
	US 395 to Los Angeles County Line	2 general traffic	6 - 9	D
State Route 38	I-10 to Bryant Ave.	2 general traffic	12 - 16	F
	Bryant Ave. to Big Bear Blvd./Greenspot Blvd.	2 general traffic	2 – 5	D-E
	Big Bear Blvd./Greenspot Blvd. to SR-18 West	4 general traffic	13	D-E
	SR-18 East to Big Bear Dam	2 general traffic	3	E
State Route 58	Los Angeles County Line to I-15	4 general traffic	9 - 13	D
State Route 62	Riverside County Line to Utah Trail	4 general traffic	12 – 21	na
	Utah Trail to Arizona State Line	2 general traffic	1 - 3	na
State Route 66	Los Angeles County Line to Vineyard Ave.	4 - 6 general traffic	32 – 42	C-E / D-F
	Vineyard Ave. to Citrus Ave.	4 – 6 general traffic	28 – 47	C-F / D-F
	Citrus Ave. to I-215	4 general traffic	15 – 29	B-D / C-E
	I-215 to Boulder Ave.	2 - 4 general traffic	8 – 20	A-D / B-D
	Boulder Ave. to SR-38	2 general traffic	11 - 12	D / D
State Route 83	SR-30 to I-10	4 – 6 general traffic	14 – 34	B-D / B-D
	I-10 to SR-60	4 – 6 general traffic	28 – 34	B-D / C-D
	SR-60 – SR-71	2 – 6 general traffic	13 - 32	B-C / B-C
State Route 127	I-15 to Inyo County Line	2 general traffic	<1 - 2	B
State Route 138	Los Angeles County Line to I-15	2 general traffic	12 – 14	E
	I-15 to Waters Dr.	2 general traffic	1 – 2	C-D
	Waters Dr. to SR-18	2 general traffic	6 - 8	E
State Route 142	Orange County Line to Chino Hills Pkwy.	2 general traffic	15 – 16	F / F
	Carbon Canyon Rd. to SR-71	4 general traffic	23 – 27	D / D-E
	SR-71 to Central Ave.	4 general traffic	17 - 18	A / A
State Route 173	SR – 18 to Hook Creek Rd.	2 general traffic	5 – 7	E
	Hook Creek Rd. to Grass Valley Rd.	2 general traffic	< 1	B
	Grass Valley Rd. to Arrowhead Lake Rd.	2 general traffic (unpaved)	< .5	B

Roadway	Segment	Number of lanes (Two-way Traffic)	ADT Volume (000's)	Peak Hour LOS (Both directions)
	Arrowhead Lake Rd. to SR-138	2 general traffic	1 – 2	C
State Route 189	SR-18 to SR-173	2 general traffic	5 - 7	D
State Route 247	I-15 to Barstow City Limits	4 general traffic	16 – 17	B
	Barstow City Limits to Camp Rock Rd.	2 general traffic	2 - 3	B
	Camp Rock Rd. to SR - 62	2 general traffic	6	D
State Route 330	SR-30 to SR-18	2-4 general traffic	11	E

Table 2-6. Lane Configuration, Average Daily Traffic Volumes and Peak Hour Level of Service for Federal Highways Located in San Bernardino County

Roadway	Segment	Number of lanes (Two-way Traffic)	ADT Volume (000's)	Peak Hour LOS (Both directions)
United States 95	Nevada State Line to Riverside County Line	2 general traffic	1 - 5	B-C
United States 395	Kern County Line to El Mirage Rd.	2 general traffic	4 – 8	C
	El Mirage Rd. to I-15	2 general traffic	13 – 14	E

Table 2-7. Lane Configuration, Average Daily Traffic Volume and Peak Hour Level of Service for Major Roadways Located in San Bernardino County

Roadway	Segment	Number of lanes (Two-way Traffic)	ADT Volume (000's)	Peak Hour LOS (AM / PM)
Valley East-West Facilities				
16th Street / Baseline Road	Los Angeles County Line to Cherry Ave.	4 – 6 general traffic	12 – 27	A-D / B-D
	Cherry Ave. to Cedar Ave.	2 general traffic	14 – 15	D / D-E
	Cedar Ave. to Boulder Ave.	4 general traffic	16 - 21	A-C / C
19th Street	Mountain Ave. to Carnelian Ave.	2 general traffic	9 – 18	D-F / E-F
	Carnelian Ave. to Haven Ave.	4 general traffic	18 - 23	D-F / F
2nd Street	Mount Vernon Avenue to Waterman Avenue	4 general traffic	5 - 12	A-B / A
3rd Street	Mount Vernon Avenue to Palm Avenue	4 general traffic	8 - 14	B-C / B-D
4th Street	I-10 to Milliken Ave.	4 general traffic	14 – 24	B-C / B-C
	Milliken Ave. to Etiwanda Ave.	6 general traffic	18 – 28	A-C / B-C
5th Avenue / Sand Canyon Road	I-10 to Yucipa Boulevard	2 – 4 general traffic	6 – 7	A / A

Roadway	Segment	Number of lanes (Two-way Traffic)	ADT Volume (000's)	Peak Hour LOS (AM / PM)
40th Street	Kendall Drive to Del Rosa Avenue	4 general traffic	9 – 10	D / B
Agua Mansa Road	Rancho Avenue to Market Street	2 – 4 general traffic	4 – 7	A / A-D
Arrow Highway / 8th Street	Los Angeles County Line to Vineyard Avenue	2 – 4 general traffic	17 – 25	C-F / C-F
Arrow Route	Los Angeles County Line to Alder Avenue	2 – 4 general traffic	14 – 21	B-D / C-D
Burton Road / Washington Street / Brookside Avenue / Citrus Avenue	La Cadena Dr. to Washington St.	2 – 4 general traffic	9 – 20	B-C / C-F
	I-215 to Orange Ave.	4 – 6 general traffic	17 – 32	C-E / C-F
	Orange Ave. to Wabash Ave.	4 general traffic	6 – 10	A-B / A-B
Bloomington Avenue	Cedar Avenue to Riverside Avenue	4 general traffic	14 – 15	A / B
Colorado Street	Oak Glen Road to Wildwood Canyon Road	4 general traffic	1 – 2	A / A
Colton Avenue / Inland Center Drive	10th Street to E Street	2 – 4 general traffic	11 – 12	B / C
Edison Avenue	Pipeline Avenue to Cleveland Avenue	4 – 6 general traffic	13 – 15	A-C / B-C
Grand Avenue	Los Angeles County Line to Pipeline Avenue	4 – 6 general traffic	19 – 26	B-D / C-E
Highland Avenue	Haven Ave. to Cherry Ave.	2 general traffic	9 – 13	B-D / D-F
	Cherry Ave. to Sierra Ave.	2 general traffic	13 – 14	D / F
	Sierra Ave. to SR-30 West	2 general traffic	20 – 24	F / F
	SR-30 West to SR-30 East	4 general traffic	11 – 23	B-F / B-F
	SR-30 East to SR-330	4 general traffic	10 – 25	B-D / B-E
Holt Boulevard	Los Angeles County Line to I-10	4 general traffic	21 – 29	B-D / B-D
Jurupa Street / Jurupa Avenue	Archibald Avenue to Sierra Avenue	4 – 6 general traffic	12 – 25	A-C / A-D
Live Oak Canyon Road	San Timoteo Canyon Road to I-10	2 general traffic	10 – 11	A / A
Lugonia Avenue / Mentone Boulevard / Mill Creek Road	Mountain View Avenue to Valley of the Falls Drive	2 general traffic	11 – 15	F / F
Merrill Avenue / Mill Street	Cherry Avenue to Tippecanoe Avenue	2 – 4 general traffic	9 – 20	A-D / A-E
Mission Boulevard	Los Angeles County Line to Riverside County Line	4 general traffic	12 – 24	A-D / B-D
Oak Glen Road	I-10 to Riverside County Line	2 – 4 general traffic	13 – 26	C-D / C
Redland Boulevard	Hunts Lane to I-10	4 general traffic	10 – 18	A-B / B-D
Riverside Avenue	SR-71 to Etiwanda Avenue	4 general traffic	11 – 17	A-B / B-D
San Bernardino Avenue / 4th Street	Los Angeles County Line to Meridian Avenue	2 – 4 general traffic	6 – 14	A-D / B-D
Slover Avenue	Etiwanda Avenue to Pepper	4 general traffic	11 – 17	B-E / B-E

Roadway	Segment	Number of lanes (Two-way Traffic)	ADT Volume (000's)	Peak Hour LOS (AM / PM)
	Avenue			
Wildwood Canyon Road	I-10 to Oak Glen Road	4 general traffic	9 – 10	B / A
Valley Boulevard	Etiwanda Avenue to Mount Vernon Avenue	4 general traffic	9 – 24	C-F / C-F
Yucipa Boulevard	I-10 to Bryant Street	4 general traffic	19 – 26	B / B
Valley North-South Facilities				
14th Street	Yucipa Boulevard to Oak Glen Road	2 general traffic	2 - 3	A / A
Alabama Street	3rd Street to Barton Road	4 general traffic	14 - 27	A-C / B-E
Alder Avenue	I-10 to Valley Blvd.	2 general traffic	1 – 2	A / A
	Valley Blvd. to Foothill Blvd.	4 general traffic	9 – 11	A / A-B
	Foothill Blvd. to Baseline Rd.	2 general traffic	4 – 5	B / A
Archibald Avenue	19th St to Foothill Blvd.	4 general traffic	17 – 21	A-B / A-B
	Foothill Blvd. to I-10	4 general traffic	24 – 31	C-D / C-E
	SR-60 to Riverside County Line	4 – 6 general traffic	10 - 28	B-C / B
Bryant Street	Mill Creek Rd. to Yucaipa Blvd.	2 – 4 general traffic	4 – 5	A / A
	Yucaipa Blvd. to Riverside County Line	2 general traffic	4 – 6	A-C / A-C
Cajon Boulevard	I-15/I-215 interchange to Mount Vernon Avenue	2 general traffic	2 - 3	A / A
California Street / San Timoteo Canyon Road	San Bernardino Ave. to I-10	2 – 4 general traffic	3 – 4	A / A
	I-10. to Redlands Blvd.	4 general traffic	17 – 18	B / C
	Redlands Blvd. to Barton Rd.	2 general traffic	8 – 9	B / C
	Barton Rd. to Riverside County Line	2 general traffic	5 - 6	B / B
Cedar Avenue	Baseline Rd. to San Bernardino Ave.	2 general traffic	20 – 24	F / F
	San Bernardino Ave. to I-10	4 general traffic	33 – 55	C-F / D-F
	I-10 to Riverside County Line	4 general traffic	17 - 30	C-D / C
Central Avenue	Foothill Blvd. to San Bernardino Ave.	4 – 6 general traffic	27 – 58	A-B / B-F
	San Bernardino Ave. to SR-60	4 – 6 general traffic	36 – 40	C-E / C-E
	SR-60 to Riverside Dr.	6 general traffic	40 – 44	C / C-D
	Riverside Dr. to SR-71	4 general traffic	13 – 34	B-D / A-D
Cherry Avenue	Summit Ave. to Baseline Rd.	4 general traffic	5 – 9	A-B / B-D
	Baseline Rd. to I-10	4 – 6 general traffic	12 – 40	B-D / B-D
	I-10 to Jurupa Ave.	4 general traffic	15 - 34	B-D / A-C
Citrus Avenue	I-15 to Baseline Rd.	2 general traffic	2 - 7	A-D / A-C
	Baseline Rd. to I-10	2 – 4 general traffic	18 – 32	B-E / B-E

Roadway	Segment	Number of lanes (Two-way Traffic)	ADT Volume (000's)	Peak Hour LOS (AM / PM)
	I-10 to Jurupa Ave.	2 – 4 general traffic	9 – 20	A-E / A-D
Del Rosa Drive / Del Rosa Avenue	39th Street to Harry Sheppard Boulevard	2 – 4 general traffic	4 - 11	A / A-C
E Street	Kendall Drive to I-10	4 general traffic	9 - 17	A-B / A-B
Etiwanda Avenue	Summit Avenue to Limonite Avenue	4 – 6 general traffic	23 - 42	A-C / B-F
Garnet Street	Florida Street to Mill Creek Road	2 general traffic	11 - 12	D / D
Grove Avenue	Foothill Boulevard to Merrill Avenue	4 general traffic	14 - 16	B-C / B-C
Haven Avenue	19th St. to Baseline Rd.	4 general traffic	20 – 29	C-D / E
	Baseline Rd. to I-10	6 - 8 general traffic	33 – 52	B-D / D
Hunts Lane	E Street to Washington Street	2 - 4 general traffic	12 - 14	C / C-D
Kendall Drive	Cajon Boulevard to E Street	2 – 4 general traffic	11 - 18	A-B / A-B
La Cadena Drive	Mount Vernon Avenue to I-215	4 general traffic	16 - 20	B-C / C-D
Milliken Avenue	Banyan Street to Riverside Drive	4 – 6 general traffic	15 – 20	A-C / A-F
Monte Vista Avenue	SR-210 to Eucalyptus Avenue	4 – 6 general traffic	13 - 25	A-B / A-B
Mountain Avenue	19th St. to Foothill Blvd.	4 general traffic	18 – 23	C-D / D-E
	Foothill Blvd. to I-10	6 general traffic	34 – 49	C-D / D-E
	I-10 to SR-60	4 general traffic	29 – 37	D-E / E
	SR-60 to Edison Ave.	2 – 4 general traffic	16 – 21	A-C / C-D
Mountain View Avenue	San Bernardino Ave. to I-10	2 general traffic	10 - 11	C / D
	I-10 to Barton Rd.	4 general traffic	19 - 21	B / C-D
Mount Vernon Avenue	Highland Avenue to Riverside County Line	4 general traffic	4 - 13	A-C / A-D
Mulberry Avenue	Slover Avenue to Riverside County Line	4 general traffic	13 - 14	D / D
Orange Street / Boulder Avenue	Highland Ave. to 5th St.	2 – 4 general traffic	4 – 7	A-C / A-C
	5th St. to I-10	2 general traffic	11 – 17	D-F / E-F
	I-10 to Citrus Ave.	4 general traffic	10 - 15	A-B / B-C
Palm Avenue	Highland Avenue to 5th Street	4 general traffic	8 - 14	A-C / A-C
Pepper Avenue	Baseline Street to Slover Avenue	2 – 4 general traffic	11 - 26	B-D / B-D
Rancho Avenue	Foothill Blvd. to Mill St.	2 general traffic	4 – 7	B / B-D
	Mill St. to I-10	4 general traffic	9 – 20	B-C / B-D
	I-10 to La Cadena Dr.	2 general traffic	11 - 15	D-F / D-F
Reche Canyon Road	Barton Road to Riverside County Line	2 general traffic	19 - 20	F / F
Riverside Avenue	Sierra Avenue to Riverside County Line	4 general traffic	15 - 43	B-D / B-E
Sierra Avenue	I-15 to SR-30	2 general traffic	5 – 18	B-E / C-D
	SR-30 to Arrow Rt.	4 general traffic	13 – 21	B-C / C

Roadway	Segment	Number of lanes (Two-way Traffic)	ADT Volume (000's)	Peak Hour LOS (AM / PM)
	Arrow Rt. to Slover Ave.	4 general traffic	26 – 53	C-F / C-F
	Slover Ave. to Riverside County Line	6 general traffic	13 - 20	A-B / A-B
Tippecanoe Avenue / Anderson Avenue	Baseline Street to Barton Road	4 general traffic	21 - 27	C / D
Victoria Avenue	Lynwood Drive to 3rd Street	4 general traffic	6 – 9	A-C / A-C
Wabash Avenue	San Bernardino Avenue to 5th Street	2 – 4 genera traffic	2 - 6	A / A
Waterman Avenue	Rim of the World Highway to Barton Road	4 – 6 general traffic	19 - 29	A-D / B-E
Victor Valley				
Arrowhead Lake Road	Main Street to SR-173	2 general traffic	2 - 3	B / C
Baldy Mesa Road	Phelan Road to Duncan Road / Bear Valley Road	2 general traffic	2 - 7	A / A
Bear Valley Road	I-15 to I Ave.	6 general traffic	27 – 38	C-E / C-D
	I Ave. to Apple Valley Rd.	4 – 6 general traffic	35 – 36	D / D
	Apple Valley Rd. to Navajo Rd.	4 general traffic	19 – 34	A-C / C
	Navajo Rd. to SR-18	2 general traffic	5 – 6	A / A
Duncan Road	Baldy Mesa Road to Bear Valley Road	2 general traffic	<1	A / A
El Mirage Road	Los Angeles County Line to US 395	2 general traffic	2 - 4	A / A
Hesperia Road	D Street to Lime Street	2 general traffic	14 - 15	D / D
Main Street	US 395 to Rock Springs Road	4 general traffic	9 - 16	A-D / A-D
National Trails Highway	I-15 to Lenwood Road	2 general traffic	3 - 11	A / A
Palmdale Road	Los Angeles County Line to US-395	2 general traffic	5 – 9	A-B / B-D
	US-395 to I-15	4 general traffic	28 – 38	C-E / D-F
Phelan Road	SR-138 to US 395	2 general traffic	8 – 10	A / A
Sheep Creek Road	El Mirage Road to SR-138	2 general traffic	2 - 11	A / A
Barstow				
Barstow Road	Main Street to Veterans Parkway	4 general traffic	17 - 18	C / C
Main Street	National Trails Highway to I-40	4 general traffic	7 - 16	A-D / A-C
Old Highway 58	Los Angeles County Line to I-15	2 general traffic	8 - 9	B / D
Needles				
Needles Highway	Nevada State Line to Broadway Street	2 general traffic	3 – 4	A / A

Figure 2-3A. Average Daily Traffic Volumes – Valley Region

Figure 2-3B. Average Daily Traffic Volumes – Mountain Region

Figure 2-3C. Average Daily Traffic Volumes – Desert Region

Figure 2-4A. Average Daily Level of Service – Valley Region

Figure 2-4B. Average Daily Level of Service – Mountain Region

Figure 2-4C. Average Daily Level of Service – Desert Region

San Bernardino Associated Governments (SANBAG)

The need for the county to maintain a comprehensive and functional circulation system over such an enormous geographical area required a coordinated effort from all of the local municipalities located within San Bernardino County. This was one of the main objectives in the creation of the San Bernardino Associated Governments (SANBAG). SANBAG is the council of governments and acts as the transportation planning agency for San Bernardino County. There are currently 25 member jurisdictions that, through appointed representatives, are responsible for the cooperative regional planning of local and regional roadway improvements, train and bus transportation, deployment of intelligent transportation systems and long-term planning studies.

As designated by statute, SANBAG serves in the capacity of County Transportation Committee, who is responsible for allocating and programming State and Federal funds for regional transportation projects throughout the County. SANBAG also serves as the County Transportation Authority and is responsible for administering Measure I, the half-cent transportation sales tax originally approved by voters in 1989 and extended for an additional 30 years in November 2004. Other major capacities that SAN BAG has been designated to serve are as the Service Authority for Freeway Emergencies and as the Congestion Management Agency responsible for establishing, maintaining and enforcing San Bernardino County's Congestion Management Program.

SANBAG is governed by a Board of Directors that is comprised of either the mayors or city council members of the 24 incorporated municipalities within San Bernardino County, the five members of the Board of Supervisors for San Bernardino County, the Executive Director of SANBAG and a representative from Caltrans District 8. This body created five policy committees responsible for providing policy oversight of the specific program areas. These include the:

- Administrative Committee – (1) Maintains the comprehensive integrity of the organization. (2) Provides policy direction related to administrative issues, policies, budget, finance, audit and personnel issues for the organization. (3) Serves as policy review committee for any program area that lacks active policy committee oversight.
- Commuter Rail Committee – Provides policy guidance and recommendations to the SANBAG Board of Directors and Southern California Regional Rail Authority delegates with respect to commuter rail service in San Bernardino County.
- Mountain/Desert Committee - Provides policy oversight related to SANBAG responsibilities to the Mountain/Desert subregion. This committee also meets in conjunction with the Mountain/Desert Measure I Committee to coordinate on the Mountain/Desert Expenditure Plan.
- Major Projects Committee - Provides policy guidance and recommendations to the Board of Directors on issues related to the Measure I Major Projects in the Valley Region.
- Plans & Programs Committee - Provides policy oversight for: (1) countywide Comprehensive Transportation Plan and revisions to the Regional Transportation Plan; (2) Congestion Management Program revisions, deficiency plans, state and federal funding, and programming requirements; (3) Programs to implement or coordinate subregional or local

transportation control measures; and (4) Programming related to CMP Capital Improvement Program, Regional Transportation Improvement Program (RTIP), and air quality conformity.

A large portion of the funding allotted to SANBAG to conduct the activities cited above is generated through the Measure I half-cent transportation tax. A smaller portion of the necessary revenue is obtained through federal grant activity. SANBAG's estimated 2004/2005 revenue is approximately $170,600,000. This is nearly a four percent increase over the 2003/2004 budget of $163,400,000. The increase in revenue is anticipated to occur through Measure I. As a part of the Measure I Program, SANBAG is expecting to receive nearly $33 million in Regional Improvement Program funds. SANBAG's 2004/2005 budget is estimated to be approximately $194, 800,000, including prior year encumbrances. A majority of this money is delineated for use in the Valley Major Projects portion of the Measure I Program.

Congestion Management Program (CMP)

The Congestion Management Program (CMP) in San Bernardino County was created in June 1990 as a provision of Proposition 111. Under this proposition, urbanized with populations of greater than 50,000 would be required to undertake a congestion management program that was adopted by a designated Congestion Management Agency (CMA). As stated earlier, San Bernardino County Associated Governments (SANBAG) was designated as the CMA by the County Board of Supervisors.

Through the CMP, SANBAG maximizes the opportunities of comprehensive countywide transportation planning to more efficiently focus transportation funding where needs are the greatest and minimizing jurisdictional complications and redundancy. To accomplish this objective, the program was designed to achieve the following goals:

- Goal 1 – Maintain or enhance the performance of the multimodal transportation system and minimize travel delay.
- Goal 2 – Assist in focusing available transportation funding on cost-effective responses to subregional and regional transportation needs.
- Goal 3 – Provide for technical consistency in multimodal transportation system analysis.
- Goal 4 – Help to coordinate development and implementation of subregional transportation strategies across jurisdictional boundaries.
- Goal 5 – Anticipate the impacts of proposed new development on the multimodal transportation system, provide consistent procedures to identify and evaluate the effectiveness of mitigation measures, and provide for adequate funding of mitigations.
- Goal 6 – Promote air quality and improve mobility through implementation of land use and transportation alternatives or incentives that reduce both vehicle trips and miles traveled, and vehicle emissions.

The CMP also incorporated the goals of the regional transportation plan as follows:

- Meet the regional and subregional mobility and access needs of increased employment and population while reducing congestion to 1990 levels of performance or better and enhancing goods movement.
- Ensure that transportation investments are cost effective, protect the environment, promote energy efficiency, and enhance the quality of life.
- Serve the transportation needs of everyone including the transit dependent, elderly, handicapped, and disadvantaged, for safe, reliable, and economical service.
- Develop regional transportation solutions that complement subregional transportation systems and serve the needs of subregions, cities and communities.
- Promote transportation strategies that are innovative and market based, encourage new technologies, and support the Southern California economy.

A major factor in achieving these goals and objectives was to design a program that would provide advanced notice of potential transportation problems so that resources could be implemented in the most efficient and beneficial manner. The CMP provides this guidance by monitoring the volume and level of operation of selected corridors biannually and evaluating current and future multimodal system performance. Currently, 1,519 miles of roadway located in San Bernardino County are included within the CMP network. Across the County, the CMP network consists of 176 miles of roadway within the Victor Valley, 509 miles of roadway within the Valley Region, and 834 miles of roadway located across the rest of the County. Approximately 351 miles, or 23 percent, of the CMP network consists of roadways located within local jurisdictions. For federal freeways, these values increase to 407 miles and 27 percent. Roadways designated as state routes contribute approximately one-half, 761 miles, of all the facilities identified with the CMP network. Those facilities identified as part of the CMP network are shown in Figure 2-5**A** through Figure 2-5**C**.

As stated above, the CMP has a level of service standard that requires all CMP segments operate at LOS E or better, with the exception of those facilities identified in the list below. The following roadway segments have been designated LOS F in the 2001 CMP, updated in December of 2001:

Freeways

- I-10 Westbound, Milliken Avenue to Central Avenue
- I-10 Westbound, Waterman Avenue to EB SR-30
- I-10 Eastbound, Central Avenue to Milliken Avenue
- I-10 Eastbound, NB SR-15 to SB SR-15
- I-10 Eastbound, SB Waterman Avenue to California Street
- SR-60 Westbound, Milliken Avenue to Central Avenue
- SR-60 Eastbound, Central Avenue to Milliken Avenue
- I-215 Northbound, Inland Center Drive to SR-30 / Highland Avenue

Figure 2-5A. CMP Roadways – Valley Region

Figure 2-5B. CMP Roadways – Mountain Region

Figure 2-5C. CMP Roadways – Desert Region

Valley East / West Arterial Segments

- Foothill Boulevard between Mountain Avenue and Archibald Avenue

Valley North / South Arterial Segments

- Citrus Avenue between Slover Avenue and Valley Boulevard
- Cedar Avenue between Slover Avenue and Valley Boulevard
- Mountain View Avenue between Barton Road and Redlands Boulevard
- Mountain Avenue between Mission Boulevard and Holt Avenue

Victor Valley Arterial Segments

- Bear Valley Road between Amargosa Road and Mariposa Road
- Bear Valley Road between Hesperia Road and Peach Avenue
- SR-18 between I-15 (North) and Stoddard Wells Road

The procedures in the 2000 Highway Capacity Manual (HCM) were adopted as the LOS procedures to be utilized in analyzing CMP facilities.

The CMP was also responsible for developing transit standards for service routing, frequency, and coordination with respect to specific highly-congested corridors, activity centers and large employment sites. An emphasis was placed on peak period service while maintaining sufficient off-peak service to accommodate local mobility needs of transit-dependent riders. It was also responsible for identifying existing needs for additional commuter rail stations and express bus terminals as well as planning for feeder bus service and transit-oriented development.

Through the use of traffic impact analysis (TIA) reports and Comprehensive Transportation Plan (CTP) model forecasts, the CMP evaluates proposed land use decisions to ensure adequate transportation network improvements are developed to accommodate future growth in population. If a CMP facility is found to fall below the level of service standard, either under existing or future conditions, a deficiency plan must be prepared, adopted and implemented by local jurisdictions who contribute to such situations. Annual monitoring activities provide a method of accountability for those local jurisdictions required to mitigate a network facility with substandard LOS.

While this interjurisdictional approach provides political and technical consistency for future development within the County, the CMP is only a mechanism to be used to guide efforts in a more efficient manner. It is not to be considered a replacement to the Regional Transportation Plan (RTP).

Facility Deficiencies

In a region the size of San Bernardino County, mobility becomes a very important issue. The effective operation of freeways and streets is necessary to ensure that the movement of people and goods within and through the region continues as uninterrupted as possible. Overall operating conditions on the County's major highway systems are typically characterized by heavy peak commute period congestion lasting for several hours in the southbound and westbound direction in

the morning and the reverse in the evening hours. Most major freeways and parallel arterial corridors exhibit these heavily directional congestion patterns on a daily basis. Recreational travel also exhibits weekly recurring congestion patterns along the east-west freeways and the I-15 to and from attraction points across the Nevada state line.

Those facilities operating at LOS F were included in Table 2-8 in an effort to identify locations where existing traffic conditions currently surpass the County's maximum allowable threshold for congestion of LOS E.

Table 2-8. Existing Transportation Facilities Currently Operating at Level of Service F within San Bernardino County

Freeways	Location	Roadway Segment
I-10		
Westbound AM	Redlands	Mountain View Avenue to SR-30
Eastbound PM	San Bernardino	I-215 to Waterman Avenue
I-15		
Southbound AM	San Bernardino County	I-215 to Oak Hill Road
Northbound PM	San Bernardino County; Barstow	I-215 to Oak Hill Road; SR-58 to SR-247
I-215		
Northbound AM	Colton, Grand Terrace	Barton Road to I-10
Southbound AM	Colton, Grand Terrace, San Bernardino	La Cadena Drive to I-10; Orange Show Road to SR-259
Northbound PM	Colton, Grand Terrace, San Bernardino	La Cadena Drive to I-10; Orange Show Road to 2nd Street; 5th Street to Baseline Road
Southbound PM	San Bernardino	Mill Street to 2nd Street

State Highways	Location	Roadway Segment
SR-38	Redlands, San Bernardino County	I-10 to Bryant Street

Arterial Roadways – Valley Region	Location	Roadway Segment
North-South Facilities		
Cedar Avenue Central Avenue	Rialto, San Bernardino Montclair	Baseline Road to I-10 I-10 to Moreno Street
Etiwanda Avenue	Fontana, Ontario	I-10 to Slover Avenue
Milliken Avenue	Rancho Cucamonga, Ontario	Foothill Boulevard to 4th Street
Orange Avenue (SR-30)	Redlands	I-10 to San Bernardino Avenue
Rancho Avenue Reche Canyon Road	Colton Colton, San Bernardino County	I-10 to Agua Mansa Road Washington Street to Riverside County Line
Sierra Avenue	Fontana	Valley Boulevard to I-10
Waterman Avenue	San Bernardino	40th Street to SR-30
East-West Facilities		
19th Street (SR-30)	Upland, Rancho Cucamonga	Mountain Avenue to Haven Avenue
Barton Road/Washington Street	Colton, Grand Terrace, San Bernardino, Loma Linda	La Cadena Drive to I-215; Reche Canyon Road to University Avenue
Carbon Canyon Road (SR-142)	Chino Hills	Orange County Line to Chino Hills Parkway
Foothill Boulevard (SR-66)	Rancho Cucamonga	Vineyard Avenue to I-15

Freeways	Location	Roadway Segment
Highland Avenue (SR-30)	Fontana, Rialto, San Bernardino, Highland	Etiwanda Avenue to SR-30; Sterling Avenue to SR-30
Arterial Roadways – Desert Region	**Location**	**Roadway Segment**
Palmdale Road (SR-18)	Victorville	Amargosa Road to I-15

Source: SCAG RTP Model, San Bernardino County CMP, 2003 Update.

Current Studies and Projects

Within the last several years, a large number of planning studies and capital improvement projects have been either completed or initiated in an effort to increase the operating efficiency of the transportation network in and around San Bernardino County. These efforts range from major facility widening and new interchange construction to coordinating the existing traffic signal system. The following list provides a brief summary of the major transportation projects by lead agency and their current status:

Planning Studies

Corridor Studies

- I-10 Corridor Land Use Analysis. The general intent of this study was to develop a framework through which a consistent and desirable identity for the I-10 Freeway could be achieved, through the use of landscaping and architectural amenities. The overall impacts on the circulation element goals and policies created by this study are considered to be minimal and consist of increased efficiency and utilization of the roadway network surrounding the I-10 corridor. This study will have a significant impact on the goals and policies developed for the Bloomington Community Plan Area. The San Bernardino County Board of Supervisors was the lead agency with input and review provided by the City Councils of the cooperating cities of Ontario, Fontana, Rialto and Colton. The study was completed in September 2004.

- I-15 Comprehensive Corridor Study. This study is evaluating the transportation needs for the I-15 corridor from State Route 60 in Riverside County to D Street in the City of Victorville. The primary focus of this study is: finalization of future right-of-way needs for Caltrans in the high desert area, south to the I-15/I-215 interchange; evaluating the feasibility, options and costs of implementing truck lanes on I-15; and evaluating all transportation needs along the I-15 corridor to develop a long-range improvement plan and implementation strategy. The results of this study will have a direct and significant impact on the circulation element goals and policies by developing a set of alternatives through which congestion created by both vehicle and truck traffic can be lessen along the entire I-15 corridor, especially the Cajon Pass. The Southern California Associated Governments (SCAG), SANBAG, the Riverside County Transportation Commission (RCTC) and Caltrans are all participating in the study. The study is expected to be completed in June 2005.

- High Desert Corridor. This study evaluates the realignment of State Route 18 from Joshua Road in the Town of Apple Valley to US-395 in the City of Adelanto. This is the first phase of the High Desert Corridor, a proposed four-lane expressway that will link the Victor Valley with the Antelope Valley in Los Angeles County. The project is currently in the Project Approval and Environmental Document (PA&ED) stage of design. The final design of this facility will have an impact on the circulation element goals developed for the Victor Valley and those for the Phelan Community Plan Area. This study, when finished, will environmentally clear a proposed alternative corridor to alleviate traffic congestion currently occurring along the I-10 and I-15freeways. The City of Victorville is the lead agency and is utilizing Federal Demonstration and Measure I funds to conduct the study. The PA&ED phase began in 2003 and is expected to be completed in August 2007.

- Moreno Valley to San Bernardino Valley Corridor Study. This study analyzed eight alternatives proposed to improve transportation between San Bernardino and Riverside Counties. The final adopted alternative was the construction of a new parkway from the Interstate 215/State Route 60 junction along Morton Road and under Box Springs Mountain in tunnel to the California Street/Interstate 10 interchange in the City of Redlands. Currently, an environmental impact report is being prepared as required under the California Environmental Quality Act (CEQA). The final design of this proposed facility will have a small impact on the circulation element goals and policies. SANBAG and RCTC are joint partners in the development and evaluation of this study.

Route Concept Reports

- Route Concept Report – Route 2. This route concept was originally conducted by Caltrans in 1991, but the data associated with the segment of State Route 2 that is located in San Bernardino County was updated in April 2000. This route is not considered to be of high importance for the County of San Bernardino; therefore, it will not have any direct impact upon the circulation element.

- Route Concept Fact Sheet, District 8 – State Route 18. This is a planning document, developed by Caltrans, that outlines the proposed future development of State Route 18. The segment between State Route 210 and State Route 247 is proposed to undergo improvements mainly in safety with some operational improvements, primarily located in the mountain areas. The segment between State Route 247 and State Route 138 is recommended to be developed into a four-lane facility as a part of the High Desert Corridor study. These improvements will have an impact on circulation element goals and policies for the Desert Region, specifically the Victor Valley. The Phelan Community Plan Area will also be greatly affected. This report was approved by the District Director in March 2002.

- Route Concept Fact Sheet, District 8 – State Route 38. This concept report states that there are currently three planned lane addition projects along State Route 38. These consist of the addition of two mixed-flow lanes from I-10 to Bryant Street, Bryant Street to South Fork Road and Green Canyon Road to the southern junction with State Route 18. Due to expected financial constraints, these major capacity enhancements along State Route 38 are

not expected to occur. Some safety and operational improvements may be conducted but these will occur on a case-by-case basis. This does not preclude improvements conducted through either local government or private development funding. The overall impact of this report on the Mountain Region circulation element and the Bear Valley Community Plan Area will be minimal. This report was approved by the Caltrans District 8 Director in March 2000.

- Route Concept Fact Sheet, District 8 – State Route 138. The concept developed for this facility calls for a four-lane expressway with a two-way left turn lane to be constructed for the segment between State Route 18 and the I-15 Freeway. The *North County Combined Highway Corridors Study*, conducted as a joint effort between SCAG, Caltrans and the Los Angeles County Metropolitan Transportation Authority (Metro), determined that State Route 138 from the Los Angeles County line to State Route 14 would need to be a minimum of four lanes to accommodate the projected growth in vehicle and truck traffic. The route concept report was completed in August 1999. The North County study was completed in June 2004. The results of these studies will have significant impacts on the circulation element goals and policies for the Desert Region, specifically the Victor Valley. They will also impact the Phelan Community Plan Area.

- Route Concept Fact Sheet, District 8 – State Route 189. This report states that there are no plans to provide additional capacity along State Route 189 due to its designation as a low priority facility. This designation does not preclude improvements conducted with either local government or private development funding. Some safety and operational improvements may be made, but these will be conducted on a case-by-case basis. Due to its designation as a low priority facility, improvements to State Route 189 will have very little impact on the circulation element and will have a minor impact on the Lake Arrowhead Community Plan Area. This report was approved by the Caltrans District 8 Director in March 1999.

- Route Concept Fact Sheet, District 8 – State Route 330. This report states that there are no plans to provide additional capacity along State Route 330 due to its designation as a low priority facility. This designation does not preclude improvements conducted with either local government or private development funding. Some safety and operational improvements may be made, but these will be conducted on a case-by-case basis. Due to its designation as a low priority facility, improvements to State Route 330 will have very little impact on the circulation element and will have a minor impact on the Crest Forest Community Plan Area. This report was approved by the Caltrans District 8 Director in March 1999.

Project Study Reports

- Several project study reports (PSR) have been conducted over the last several years, primarily in the San Bernardino Valley and Victor Valley regions. These PSR's has generally focused on either improvements to existing freeway interchanges or the construction of a new interchange. The circulation element impacts associated with these improvements are

generally limited to the roadway network surrounding the interchange. The list below provides the location, lead agency and status of each PSR:

- Interstate 10, Cherry Avenue. Caltrans is the lead agency, with SANBAG participation. A PSR has been submitted for this project and a review is currently being conducted.

- Interstate 10, Beech Avenue. Caltrans is the lead agency, with SANBAG participation. This project is in the beginning stages of the project development process.

- Interstate 10, Citrus Avenue. Caltrans is the lead agency, with participation from SANBAG. A PSR for this project has been submitted for review.

- Interstate 10, Cypress Avenue. Caltrans is the lead agency, with participation from SANBAG. A PSR for this project has been submitted for review.

- Interstate 10, Alder Avenue. Caltrans is the lead agency, with participation from SANBAG. This project is in the beginning stages of the project development process.

- Interstate 10, Tippecanoe/Anderson Avenue. SANBAG, County of San Bernardino and City of Loma Linda are all participating in the planning and funding efforts associated with this project. This project is in the early preliminary engineering stage.

- Interstate 15, Duncan Canyon Road. The City of Fontana is the lead agency, with participation from SANBAG. The PSR for this project is in the initial stages of development.

- Interstate 15, Eucalyptus Street. The City of Hesperia is the lead agency. The project study report was begun in 2002 and is scheduled for completion in 2005.

- Interstate 15, La Mesa Road/Nisqualli Road. The City of Victorville is the lead agency with significant participation from SANBAG. The project report and environmental documentation began in 2002 and are expected to be completed in 2005.

Circulation Studies

- Ontario International Airport Ground Access Plan. The objective of this study was to develop a strategy through which ground access improvements could be organized to most efficiently accommodate the projected growth of both passenger and cargo traffic utilizing the Ontario International Airport. This strategy would also include institutional agreements between county and city governments; local, state and regional transportation authorities; and airport and rail operations to aid in identifying funding sources for the proposed

improvements. The results of this study will have a large impact on the circulation element, primarily in the Valley Region. This will occur through the staging process developed to provide congestion relief in the most efficient manner to the area surrounding the Ontario International Airport. SCAG is the lead agency on this study with several local and regional agencies providing assistance. This study originated in 2003 and is expected to be completed in 2005.

Goods Movement Studies

- East Valley Truck Study. The objective of this study is to develop the most reasonable and reliable traffic and truck forecasts for the eastern portion of the San Bernardino Valley region. Of particular concern are the traffic implications of three significant development initiatives in the east valley region: San Bernardino International Airport and Trade Center; the Burlington Northern/Santa Fe Intermodal Facility; and the proposed intermodal "Inland Port" facility. The preliminary analysis from this study found that a significant increase in truck volumes, along the I-10 and I-215 freeways, is expected, predominately in the north-south direction. This has enabled SANBAG to evaluate the accuracy of forecasts used in freeway and interchange design projects, address the Inland Valley Development Authority (IVDA) desire for greater regional access to the region, and the City of San Bernardino's concerns and needs related to increased vehicle and truck traffic. The results of this study will have a significant impact on the circulation element and the Muscoy and Bloomington Community Plan Areas through identification of potential problem areas associated with projected future development. SANBAG, IVDA and the City of San Bernardino all participated in this study. A draft report of the study was accepted by SANBAG in October 2002.

- Sub-Regional Freight Movement Study. This study, originally the West Valley Truck Study, was designed to develop strategies and planning tools to improve truck access to intermodal facilities and other truck activity centers in the western portion of the San Bernardino Valley region. Through this study, trucking company and shipper/receiver surveys were conducted to determine existing patterns of trucking activities in the western San Bernardino Valley region. The characteristics identified through this study will then be utilized to evaluate potential transportation system improvements to help ensure these address the issues raised by actual system users. The results of this study may have a limited impact upon the circulation element and could impact the Bloomington and Muscoy Community Plan Area. SANBAG, SCAG, RCTC and the Western Riverside Council of Governments sponsored this study, which was completed in 2003.

- Inland Goods Movement Study. This study focused on the major rail lines that extend from the Alameda Corridor and pass through currently urbanized and rapidly developing portions of San Bernardino County. The final product of this study was a process through which appropriate improvements would be identified and evaluated across the county. The findings from this study were used to create the Alameda Corridor East Trade Plan. This plan may impact the circulation element in terms of future rail-related development. Both

the Bloomington and Muscoy Community Plan Areas may also be affected. SANBAG was the lead agency in conducting this study.

- Multi-County Goods Movement Study.

Intergovernmental Relations

- San Bernardino County Nexus Study. The objective of this study was to assemble and categorize the technical information needed as a basis to help develop a policy program to mitigate growth impacts on the regional transportation system in San Bernardino County. Information developed from this study helped create legally justifiable levels of development mitigation for regional transportation improvements. It also provided a technical evaluation of the relationship of those mitigation levels to existing local jurisdiction development mitigation programs. Several implementation approaches were developed to aid SANBAG and/or other local jurisdictions that choose to move forward with the development mitigation program. The results of this study will have a large impact on the circulation element in terms of improvement scheduling and funding across the county. SANBAG was the lead agency with participation from Caltrans and several local municipalities located within San Bernardino County. A draft technical memorandum was submitted to the SANBAG Comprehensive Transportation Plan Technical Advisory Committee for review in February 2004.

Capital Improvement Projects

Capacity Improvements – Freeways and Highways

- Interstate 10 Truck Climbing Lanes. This project is the first phase of improvements along I-10 aimed at reducing congestion in the eastern San Bernardino Valley region. This project began in November 2003 with the construction of a truck-climbing lane along I-10 between Redlands and Yucipa. This objective will be achieved by adding an auxiliary lane between Ford Street and Yucipa Boulevard. Several other enhancements and improvements such as sound walls and pavement replacement are also included in this work effort. This project is expected to be completed in Spring 2005. The overall circulation element impact of this project will be centralized in the eastern Valley Region, primarily in the City of Redlands. SANBAG is the lead agency with participation from Caltrans, the City of Redlands and the City of Yucipa. Construction on this project began in November 2003

- Interstate 10 Widening, City of Redlands. This project is the second phase of improvements along the I-10 Freeway. This phase would add one additional lane both eastbound and westbound along a two and one-half mile segment between Orange Street and Ford Street. A total of eleven bridges would require widening and approximately two and one-half miles of sound walls would also be constructed. The circulation element impact of this project would consist of increase capacity along I-10 in the City of Redlands and some congestion relief to primary roadways in the surrounding area. SANBAG is the lead agency and has completed final design and is awaiting environmental clearance from the

Federal Highway Administration. Caltrans and the City of Redlands are also participating in the project design. This project is scheduled to begin construction in August 2005 and continue for approximately two years.

- Interstate 10 Carpool Lanes. This project was responsible for the construction of approximately 10 miles of high-occupancy vehicle lanes (HOV), or carpool lanes, in the western portion of the San Bernardino Valley region. These lanes extend from the Los Angeles County line to the I-15 Freeway, passing through the cities of Ontario and Montclair. In addition to the construction of HOV lanes, this project was responsible for three other major improvements: rehabilitation of pavement and construction of a barrier wall; reconstruction of the Central Avenue interchange; and reconstruction of the Mountain Avenue interchange. These improvements will have an impact upon the circulation element due to the added capacity and efficiency they provide. Caltrans was responsible for the design and construction of the project with participation from the City of Montclair and the City of Ontario. This project was completed in January 2000.

- Interstate 15 Widening. The I-15 Freeway corridor currently experiences significant levels of traffic congestion between the cities of Victorville and Barstow. This congestion is partially the result of travelers heading to Las Vegas or Laughlin on weekends and holidays. The improvements scheduled as a part of this project includes the addition of a mixed-flow lane in both directions from State Route 58 in Barstow to the Mojave Drive interchange in Victorville, a distance of 29 miles, and the reconstruction of the D Street/E Street interchange in the City of Victorville. Construction is currently occurring on the northbound side of the I-15 Freeway between Victorville and Barstow, with the southbound widening having all been completed. The circulation element impacts of this project will be focused on the Desert Region, primarily in the immediate area of both the City of Victorville and the City of Barstow. Some additional congestion relief will be seen along the I-15 corridor into the State of Nevada. SANBAG, Caltrans and the Nevada Department of Transportation are working together to complete the improvements scheduled under this project. The final completion date of all improvements is slated to occur in 2008.

- State Route 60 Widening and Carpool Lanes. Identified as one of six high priority freeway construction projects utilizing Measure I funds, this project added one carpool lane and one mixed-flow lane along State Route 60 from the Los Angeles County line to the I-15 Freeway, a distance of approximately 10 miles. This project extended through the City of Chino, the City of Ontario and unincorporated San Bernardino County. This improvement will significantly impact the circulation element as a result of the significant increase in capacity along the State Route 60 corridor. SANBAG and Caltrans worked jointly on this project and it was completed in 1997.

- State Route 71, Chino Valley Freeway. Utilizing funds generated from Measure I, The Chino Freeway was transformed from a two-lane highway with significant safety deficiencies into an eight-lane freeway, with six mixed-flow lanes and two carpool lanes, providing a substantial increase in both safety and capacity. This improved facility operates as a major connector between San Bernardino, Riverside and Los Angeles counties. The circulation

element impacts of this project were extremely significant, especially in the western portion of the San Bernardino Valley region. This project was the first on which SANBAG and Caltrans joined together in a partnership for freeway construction. Construction began in 1994 and was completed in 1997.

- State Route 210 – Foothill Freeway. This project involves the extension of the State Route 210/State Route 30 corridor from its previous terminus at State Route 66/Foothill Boulevard in Los Angeles County. The first 20 miles of the project, from the Los Angeles County line to the I-15 Freeway in the City of Rancho Cucamonga, have been completed and are open for public use. Construction is now underway on the final eight miles which will extend through the City Rialto and the City of San Bernardino. Since this project created a new high-speed east-west connection through the San Bernardino Valley region, it will have a significant impact on the circulation element. SANBAG and Caltrans worked together, sharing design, funding and construction responsibilities for the project. The estimated completion date for the project is 2007.

- Interstate 215, City of San Bernardino. This project includes several improvements that are designed to reduce traffic congestion along the I-215 Freeway in the City of San Bernardino. This six-mile project will also improve operational issues associated with current design. Improvements such as a carpool lane in both directions from the I-10 Freeway to State Route 210; the widening and replacement of several bridges; and the reconstruction of several interchanges are all scheduled to be completed as part of this project. An additional mixed-flow lane will be added in each direction and auxiliary lanes will be added in specific locations to provide much needed capacity. This project is currently undergoing detailed design and is in the initial right-of-way acquisition stage. The circulation element impacts from this project will be significant, primarily in the eastern Valley region in the City of San Bernardino. SANBAG and Caltrans are working together in partnership. Construction is scheduled to begin in 2006 and extend until 2012.

- Interstate 215, San Bernardino, Colton, Grand Terrace, Riverside. This project is a complimentary work effort to extend the improvements designed in the Interstate 215 project located in the City of San Bernardino through the southern portion of the County and into Riverside County. Improvements to this six and one-half mile section are expected to include an additional mixed-flow lane and carpool in each direction. The circulation element impacts of this project will be significant in the eastern San Bernardino Valley region. Preliminary engineering and environmental documentation needed for the widening of the 215 Freeway began in 2003 and are expected to continue until sometime between 2008 and 2010. SANBAG and RCTC are working in a joint partnership to provide the necessary design, funding and construction infrastructure to complete this project.

Interchange Improvements

- Interstate 10, Sierra Avenue. Through this project the Sierra Avenue interchange with the I-10 Freeway was significantly improved to provide greater safety and traffic congestion relief. As a part of this project, the freeway overpass, as well as all ramps, was completely

reconstructed. The street was widened by one lane in each direction and auxiliary lanes on the I-10 Freeway were constructed from Sierra Avenue to Citrus Avenue. This project will have a localized impact on the circulation element, specifically in the central San Bernardino Valley region. SANBAG, Caltrans and the City of Fontana were all active participants in the design and construction of this project. Construction was begun in 2001 and completed in 2003.

- Interstate 10, Live Oak Canyon Road. A detailed design for this project was in process when state funding, as part of the Traffic Congestion Relief Program (TCRP), for the project was suspended due to budgetary shortfalls in December 2002. Since that time, only the 14th Street bridge portion of the project has been completed. Until further funds become available, an interim improvement will include the installation of three-way traffic signals at Live Oak Canyon Road to replace the existing stop signs. The proposed project was to construct a four-lane bridge over the I-10 Freeway as well as widened the roadway from two to three lanes south of the freeway and from two to four lanes north of the freeway. The circulation element impact from this project is and would continue to be very minimal and specific to the area surrounding the interchange. SANBAG is responsible for completion of the project.

- Interstate 15, Main Street. This project will result in a significantly modified interchange at Main Street in the City of Hesperia. Improvements include the expansion of the existing two-lane structure to accommodate six lanes, reconstruction of the existing ramps and construction of two additional ramps, added traffic signals and the realignment of Mariposa Road. This will result in improved circulation across and access to the I-15 Freeway and provide significant congestion relief to Main Street. Impacts to the circulation element will be focused in the Victor Valley portion of the Desert Region. Caltrans is the lead agency, with funding and participation occurring from SANBAG and the City of Hesperia. Construction on this project began in 2003 and is scheduled to be completed in 2005.

Capacity Improvements - Local Arterial

- Many of the major streets located throughout the San Bernardino Valley region are either currently undergoing or are scheduled for substantial improvements. The list of these facilities includes, but is not limited to the following roadways:
    - Widening
        - Baseline Road, City of Highland
        - E Street, City of San Bernardino
        - Haven Avenue, City of Rancho Cucamonga
    - Construction
        - Monte Vista Avenue, City of Montclair, City of Upland, County of San Bernardino
        - Milliken Avenue, City of Rancho Cucamonga (includes signalization)
        - Los Serranos Drive, City of Chino Hills
        - Butterfield Drive, City of Chino Hills

- Right-of-Way Acquisition and Construction
  - Ramona Avenue, City of Chino, City of Chino Hills
  - Euclid Avenue, City of Chino
  - Riverside Drive, City of Chino
  - Fairfield Ranch Road, City of Chino
  - Highland Avenue, City of Fontana
  - Easton Avenue, City of Rialto
- Grade Separations
  - Ramona Avenue, City of Montclair
  - Monte Vista Avenue, City of Montclair
  - Milliken Avenue, City of Ontario
  - State Street/University Parkway, City and County of San Bernardino
  - Hunts Lane, City of San Bernardino, City of Colton

Taken individually, these projects will have a minimal impact on the circulation element. Taken collectively, the overall impact will be a substantial improvement in mobility and traffic congestion across the San Bernardino Valley region.

Traffic Signal Improvements

- San Bernardino Valley Coordinated Traffic Signal System Plan. This project is responsible for coordinating and interconnecting the traffic signals located in the San Bernardino Valley in an effort to reduce travel times, mobile source emissions and rear-end collisions throughout the region. As a part of this effort, an inventory of existing and proposed traffic signals was developed. This inventory was evaluated using specifically weighted factors to identify the highest priority corridors. Of the approximately 1,200 existing and proposed traffic signals, nearly 1,000 were recommended for coordination, 800 of which are located on Congestion Management Program roadways. The implementation of this plan was divided into four separate phases or tiers. Tier 1 was funded in 2000 and coordination of 290 traffic signals located on east-west arterials along the Interstate 10 and State Route 60 corridors began in 2002. Actual construction activity for Tier 1 began in 2003. Tier 2 was funded in 2001 and coordination of 279 traffic signals began in 2003 with construction activity occurring in 2004. Tiers 3 and 4 are currently not scheduled for funding or evaluation.

Scenic Routes

San Bernardino County contains vast undeveloped tracts of land that offer significant scenic vistas. These locations are in danger of deteriorating under growing pressure from urban development and increased recreational activities occurring across the County. Actions have been taken by federal, state, county and local jurisdictions to ensure that these resources are protected to preserve their aesthetic value.

A scenic vista is defined as a location that:

- Provides a view of undisturbed natural areas;
- Includes a unique or unusual feature which comprises an important or dominant portions of the viewshed; or
- Offers a distant view which provides relief from less attractive views of nearby features (i.e., mountain backdrops behind urban area).

Many of the vistas that have been deemed as "scenic" are located along roadway facilities, especially throughout the Mountain and Desert regions. To ensure the quality and character of these locations are not compromised through obtrusive development, improvements of any kind are subject to additional land use and aesthetic controls outlined under the County's Scenic Highway Overlay. These controls include, but are not limited to, the following:

- Review of proposed development along scenic highways to ensure preservation of scenic values for the traveling public and those seeking a recreational driving experience.
- Expanding the established right-of-way of a designated Scenic Corridor to extend 200 feet to either side, measured from the outside edge of the right-of-way.
- Development along these corridors will also be required demonstrate through visual analysis that proposed improvements are compatible with the scenic qualities present.
- More restrictive sign ordinance standards regarding visual quality and size.
- Require new development to provide ample recreation and scenic opportunities along Scenic Corridors.
- Restrict development along prominent ridgelines and hilltops.
- Review site plans, specifically architectural design, landscaping and grading, to prevent obstruction of scenic views and to blend with surrounding landscape.
- Prohibit off-site advertising signs (i.e., billboards) within and adjacent to all scenic corridors.

The County has deemed the following roadways as having scenic character of visual importance and has designated them as scenic highways, and will apply all corresponding development policies within their immediate proximity:

WEST VALLEY REGION

Chino Sphere Planning Area

- State Route 71 - All unincorporated frontage.

West Valley Planning Area

- State Route 83 - All unincorporated frontage south of Riverside Drive.

- Mt. Baldy Road from Los Angeles County line northeast to Mt. Baldy.

Upland Planning Area

- State Route 83 (Euclid Avenue/Mountain Avenue) from 24th Street northwest to San Antonio Dam.

Rancho Cucamonga Planning Area

- Wilson Avenue (proposed).
- Day Creek Boulevard (proposed).

EAST VALLEY REGION

Oak Glen Planning Area

- Oak Glen Road.

Bloomington Planning Area

- Cedar Avenue from Bloomington Avenue south to Riverside County line.

Redlands Planning Area

- Nevada Street within the Redlands sphere of influence.
- Alabama Street within the Redlands sphere of influence.
- Tennessee Freeway (State Route 30) within the Redlands sphere of influence.

East Redlands - Crafton Hills Planning Area

- Interstate 10 from the City of Redlands southeast to the City of Yucaipa.
- San Bernardino Avenue within the Redlands sphere of influence.
- Mentone Blvd. within the Redlands sphere of influence.
- Colton Avenue within the Redlands sphere of influence.
- Citrus Avenue within the Redlands sphere of influence.
- Highland Avenue within the Redlands sphere of influence.
- Fifth Avenue within the Redlands sphere of influence.
- Crafton Avenue within the Redlands sphere of influence.

Loma Linda Planning Area

- San Timoteo Canyon Road within the Loma Linda sphere of influence.
- Beaumont Avenue within the Loma Linda sphere of influence.
- Barton Road within the Loma Linda sphere of influence.
- Orange Avenue within the Loma Linda sphere of influence.

- Nevada Street within the Loma Linda sphere of influence.

San Bernardino Planning Area

- Interstate 215 from San Bernardino northwest to Interstate 15.

MOUNTAIN REGION

Mountain Sub-regional Planning Area

- State Route 2 from State Route 138 southwest to Los Angeles County line.
- Lone Pine Canyon Road.

Hilltop Planning Area

- State Route 330 from the San Bernardino National Forest Boundary northeast to State Route 18.
- Green Valley Lake Road/101 Mile Drive.

Crest Forest Planning Area

- Crest Forest Drive from State Route 18 west to Sawpit Canyon Road.
- Playground Drive.
- Devil's Canyon Road.
- Sawpit Canyon Road/Sawpit Creek Road.
- Lake Gregory Drive.
- San Moritz Drive.
- Dart Canyon Road.
- North Road from Lake Gregory Drive northeast to State Route 189.
- Lake Drive from Knapps Cutoff northeast to Dart Canyon Road.

Lake Arrowhead Planning Area

- Grass Valley Road.
- Kuffel Canyon Road.

DESERT REGION

Joshua Tree Planning Area

- Park Blvd./Quail Springs Road from State Route 62 southeast to Joshua Tree National Park.

Twentynine Palms Planning Area

- Amboy Road from Bullion Mt. Road northeast to Amboy.

Baker Sub-regional Planning Area

- State Route 127 from Interstate 15 at Baker northwest to Inyo County line.
- *Kelbaker Road from Interstate 15 southeast to Interstate 40.
- *Kelso-Cima Road from Kelso northeast to Cima.
- *Cima Road from Interstate 15 southeast to Cima.
- *Essex Road from Essex northwest to Mitchell Caverns.
- *Cedar Canyon Road from Kelso Cima Road southeast to Lanfair Road.
- *Black Canyon Road.

Lower Colorado River Sub-regional Planning Area

- *Parker Dam Road from Parker Dam southwest to the Colorado River Indian Reservation.
- * Designated by the BLM as a part of their Back Country Byway Program, a component of the National Scenic Byway System.

MULTIPLE SUB-REGIONS AND PLANNING AREAS

- Lytle Creek Road.
- Interstate 15 from the Fontana city limit northeast to the Nevada state line, excepting those areas within the Barstow Planning Area and the community of Baker where there is commercial/industrial
  development, those portions within the Yermo area from Ghost Town Road to the East Yermo Road Overcrossing on the south side only and from First Street to the East Yermo Road Overcrossing on the north side, and all incorporated areas.
- State Route 38 within the Redlands and Yucaipa spheres of influence; from the Yucaipa sphere of influence northeast to Big Bear Dam.
- State Route 138 from Crestline cutoff at State Route 18 northwest to Los Angeles County.
- State Route 173 from State Route 18 northwest to Hesperia; from Hesperia west within the Hesperia sphere of influence.
- Coxey Truck Trail from Bowen Ranch Road southeast to Rim of the World Drive.
- Rim of the World Drive from Green Valley Lake Road to State Route 38.
- State Route 18 from San Bernardino northeast to the City of Big Bear Lake; from Big Bear Lake northwest to Apple Valley; within the Victorville sphere of influence; from Victorville and Adelanto to the Los Angeles County line.
- Baldwin Lake Road from State Route 18 southeast to Pioneertown Road; continuing east on Pioneertown Road to Burns Canyon Road; continuing southeast on Burns Canyon Road to Rimrock Road; continuing southeast on Rimrock Road to Pipes Canyon Road.
- National Trails Highway from Oro Grande northeast to Lenwood.
- Interstate 40 from Ludlow northeast to Needles.

- Lanfair/Ivanpah Road.
- Pioneertown Road from Pipes Canyon Road to the Town of Yucca Valley.
- State Route 247 (Old Woman Springs Road/Barstow Road) from the Town of Yucca Valley north to Barstow.
- State Route 62 (Twentynine Palms Highway) from Riverside County line northeast to Town of Yucca Valley; from Town of Yucca Valley east to Twentynine Palms; from Twentynine Palms southeast to Riverside County line; from Riverside County line northeast to State line.

The California Scenic Highway Program was created by the Legislature in 1963 as an attempt to preserve and protect scenic highway corridors from changes and development that would diminish the aesthetic value of lands adjacent to highways. A highway's designation as "scenic" depends upon the amount of natural landscape can be seen by individuals traveling along its route and the extent to which development intrudes upon this view. The boundaries of a scenic corridor generally encompass the land adjacent to and visible from the highway, using a motorist's line of sight. A reasonable boundary is selected when the view extends to the distant horizon.

To become an officially designated roadway, a highway facility that is considered eligible for scenic designation requires the local jurisdiction to adopt a scenic corridor protection program and must apply to the California Department of Transportation (Caltrans) for approval. The following actions are the minimum requirements for a scenic corridor protection program:

- Regulation of land use and density of development;
- Detailed land and site planning;
- Control of outdoor advertising (including a ban on billboards);
- Careful attention to and control of earthmoving and landscaping; and
- Careful attention to design and appearance of structures and equipment.

To receive official designation as a scenic highway, the scenic corridor identified in the corridor protection program is inspected and evaluated to ensure it meets the current scenic highway criteria and to what extent, if any, development has intruded on the scenic views. A Resolution of Intent Package is then submitted to the Departmental Transportation Advisory Committee (DTAC) through the appropriate Caltrans district office. Each proposal is evaluated and a final corridor protection program is developed and adopted by the local jurisdiction. If a corridor fails to meet the necessary standards during the review process, it is no longer eligible for official designation.

The advantages of official designation are a positive image for the communities involved, preservation and protection of environmental assets and potential increase in tourism. No special funding is provided for facilities that receive official designation, but some improvement and maintenance projects may qualify for funding under the Transportation Enhancement Activities (TEA) Program.

No restrictions are placed on officially designated scenic highways in terms of improvements or further development, but all proposed projects are reviewed by Caltrans and the appropriate agencies to ensure the protection of the scenic corridors to the maximum extent feasible. If the

corridor protection program is not maintained or further development is allowed to undermine the scenic quality of the corridor, official designation as a scenic highway can be revoked. A local government can also request that a designated corridor be removed from the program.

Currently, only State Route 38 is officially designated as a scenic route within San Bernardino County. Many other interstate and state highway facilities, as shown in **Figure 2-6A** through **Figure 2-6C**, are considered eligible for official designation. **Table 2-9** provides the established boundaries of each of the eligible scenic corridors.

Figure 2-6A: Scenic Routes – Valley Region

Figure 2-6B. Scenic Routes – Mountain Region

Figure 2-6C. Scenic Routes – Desert Region

Table 2-9. San Bernardino County State Highways Eligible for Official Designation as Scenic Routes

Route	District	Location (From/To)	Post Miles
SR-2	7 / 8	Los Angeles County Line to SR-138 via Wrightwood	0.0 – 6.36
I-10	8	SR-38 near of Redlands to Riverside County Line	30.9 – 29.7
SR-18	8	SR-138 near Mt. Anderson to SR-247 near Lucerne Valley	R17.7 – 73.8
SR-30	8	SR-330 near Highland to I-10 near Redlands	T29.5 – 33.3
SR-38	8	I-10 near Redlands to SR-18 near Fawnskin	0.0 – 49.5
I-40	8	Barstow to Needles	0.0 – 154.6
SR-58	6 / 8	SR-14 near Mojave to I-15 near Barstow	112.0 – R4.5
SR-62	8	I-10 near Whitewater to Arizona State Line	0.0-142.7
SR-127	8 / 9	I-15 near Baker to Nevada State Line	L0.0 – 49.4
SR-138	8	SR-2 near Wrightwood to SR-18 near Mt. Anderson	6.6 – R37.9
SR-142	8	Orange County Line to Peyton Drive	0.0 – 4.4
SR-173	8	SR-138 near Silverwood Lake to Sr-18 south of Lake Arrowhead	0.0 – 23.0
SR-247	8	SR-62 near Yucca Valley to I-15 near Barstow	0.0 – 78.1
SR-330	8	SR-30 near Highland to Sr-18 near Running Springs	29.5 – 44.1

Source: Caltrans Scenic Highways Program

Evacuation Routes

In the 1989 General Plan and the subsequent 2003 General Plan Update, evacuation routes were identified, as required by State law. These routes were designated as evacuation routes due to their location within and ability to provide adequate capacity for residents living in each of the three regions of the County – Valley, Mountain and Desert. These routes consist mostly of interstate freeways and state highways but are not meant to be a comprehensive evacuation plan. Specific evacuation routes will be designated during an emergency by San Bernardino County Sheriff's Department, as and when the need arises, in accordance with the County Emergency Management Plan.

The location and intensity of a major emergency may make certain routes impassable. When this occurs, detours and rerouting of traffic will be designated by the appropriate agency following procedures set forth in the Emergency Management Plan. The following routes and highways are designated as potential evacuation routes:

- Valley Region – I-10, I-15, I-215, SR-30, SR-60, SR-66, SR-71 and other major and secondary highways.
- Mountain Region - SR-2, SR-18, SR-38, SR-138, SR-173, SR-330 and Mt Baldy Road.
- Desert Region - I-15, I-40, US-95, US-395, SR-18, SR-58, SR-62, SR-127, SR-138, SR-178 and SR-247.

In addition, Caltrans has also designated the facilities shown in **Table 2-10** as "Possible Evacuation Routes" in the Valley Region. These routes were chosen based on their perceived safety in the event of a major earthquake:

Table 2-10. Valley Region Possible Evacuation Routes

Possible Evacuation Route **West Valley Area**	**Location**
San Bernardino Avenue / 4th Street	Vineyard Avenue to Cherry Avenue
Valley Boulevard	Cherry Avenue to Mount Vernon Avenue
Etiwanda Avenue	San Bernardino Avenue to northern terminus
Sierra Avenue	Foothill Boulevard to Riverside Avenue
East Valley Area	
Cajon Boulevard	Devore to Highland Avenue
Mount Vernon Avenue	Highland Avenue to La Cadena Drive
La Cadena Drive	Mount Vernon Avenue to Riverside County Line
Barton Road	La Cadena Drive to Waterman Avenue
Waterman Avenue	Barton Road to Mill Street
Mill Street	Waterman Avenue to E Street
E Street	Mill Street to Kendall Drive
Kendall Drive	E Street to Palm Avenue
Hospitality Lane	Waterman Avenue to Tippecanoe Avenue
Coulston Street	Tippecanoe Avenue to Mountain View Avenue
Lugonia Avenue	Mountain View Avenue to Orange Street
Redlands Boulevard	Waterman Avenue to Orange Street

Source: Revised San Bernardino County General Plan, 2002.

The Mountain Area Safety Taskforce (MAST) organizations of San Bernardino County have developed a five-point action plan and created emergency route maps to help residents of mountain communities in San Bernardino County prepare for emergencies and familiarize themselves with alternative access options to and from their homes and places of business. The MAST organization is comprised of government agencies, private companies and volunteer organizations concerned with public safety in mountain areas. The five-point action plan has been initiated by the County MAST organizations as follows:

- Assure public safety. Critical elements to this action include developing evacuation plans, clearing potential hazard trees from routes into and out of the mountains, and providing emergency planning and hazard mitigation information to the public.
- Obtain funds. Work with local, state and federal legislators to obtain funds to combat the problem.
- Reduce fuel and create fuel breaks. This means planning and organizing the removal of dead standing trees, the reduction of fuel on the ground, and the creation of defensible space around developed areas and homes.
- Develop commercial use or disposal options for waste wood products.

- Identify and develop plans for ensuring long-term forest sustainability.

The emergency route maps listed below have been issued to residents living in the San Bernardino – San Jacinto Mountains to familiarize them with alternative access routes to and from their homes and places of business. These maps are intended to support pre-emergency identification of options for ingress and egress that exist in the mountain area. The specific emergency routes employed in the case of an actual emergency will be designated by evacuation authorities based on emergency-related conditions and will be communicated to residents at the time of the emergency via the fire information telephone lines or by officials directing traffic on the ground.

Figure 2-7A through **Figure 2-7C** show the potential evacuation routes for emergency egress for the Valley, Mountain, and Desert Regions, respectively.

2.3.1.2 PUBLIC TRANSPORTATION

There are seven public transit agencies that operate within San Bernardino County. These provide approximately 17.5 million passengers per year with access to a vast majority of the Valley and Mountain Regions of the County and to the more developed areas of the Desert Region. Of the seven transit operators described above, six are located almost entirely within the county and are provided funds and received oversight from San Bernardino Associated Governments (SANBAG), the County's transportation planning agency. SANBAG does not provide funding or have oversight over Foothill Transit Agency.

San Bernardino County also maintains a service directory for organizations and agencies that provide specialized transportation for seniors and persons with disabilities. This directory, created and maintained by the Public and Specialized Transportation Advisory and Coordination Council (PASTACC), currently lists approximately 200 public transit operators and social service transportation providers that have been registered by the County to provide access to seniors, disabled persons and persons of limited means.

Greyhound offers regional and nationwide bus service to San Bernardino County residents through seven stations located in these communities – Baker, Barstow, Fontana, Needles, a limited station in Redlands, San Bernardino and Victorville. From these stations, Greyhound offers connections to locations such as Los Angeles, Las Vegas, Phoenix, Tucson and points beyond. In 2002, the San Bernardino was the tenth busiest terminal for Greyhound patrons in the United States.

Figure 2-7A. Evacuation Routes – Valley Region

Figure 2-7B. Evacuation Routes – Mountain Region

Figure 2-7C. Evacuation Routes – Desert Region

Descriptions of these operators, the areas they serve and their annual ridership are provided below:

Valley Region

Omnitrans

Description: Omnitrans is a joint powers authority that is the designated public transit provider for the San Bernardino Valley. It oversees a 480 square mile service area and provides one express and 34 local and bus routes. Routes 28, 75, 140 and 202 are limited to operating Monday through Friday. Routes 3, 4, 29 and 67 offer Saturday service. All other routes are available seven days a week.

Omnitrans also offers a demand-response transportation system that provides curb-to-curb service seven days a week. This service, OmniLink, is available in the communities of Chino Hills, Grand Terrace/Colton and Yucaipa and operates seven days a week.

Communities Served: Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Loma Linda, Montclair, Mentone, Muscoy, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Upland and Yucaipa.

Annual Ridership: Over 16 million passengers per year.

Foothill Transit Agency

Description: Foothill Transit Authority is a joint powers authority that provides bus service to the San Gabriel and Pomona Valleys. This agency operates a total of 32 fixed-route local, express and rail-feeder routes. Of this total, six local and two express routes provide service to residents of San Bernardino County through direct access at the Montclair Transportation Center. Local service is provided seven days a week and express service is available on weekdays only.

Communities Served: Chino, Montclair, Ontario and Upland.

Annual Ridership: Nearly 17 million passengers per year.

Figure 2-8A shows the service area and major transit routes of the agencies that operate in the Valley Region.

Mountain Region

The Mountain Area Regional Transit Authority (MARTA)

Description: The Mountain Area Regional Transit Authority provides two local and three off-mountain/regional fixed-service routes. Local service is available between Arrowhead and Crestline on weekdays. Service within Big Bear Valley is available Monday through Friday and on Saturdays.

Figure 2-8A. Bus Routes – Valley Region

Off-mountain/regional service is available to either San Bernardino or Victor Valley. On weekdays, there are four daily trips between Arrowhead/Crestline and San Bernardino and two daily trips between Big Bear Valley and San Bernardino. On Saturdays, two trips are available from both Arrowhead/Crestline and Big Bear Valley. Service to Victor Valley is offered through two trips on Tuesdays, Thursdays and Saturdays that depart Big Bear Lake.

Dial-a-Ride (DAR) service is also available in both the Big Bear Valley and Rim/Crestline areas. For Big Bear Valley, DAR service is available seven days a week. In Rim/Crestline, DAR service is provided Monday through Friday. Saturday service is provided in Crestline and in Lake Arrowhead. No Sunday service is provided on the Rim/Crestline DAR service.

Communities Served: Crestline, Lake Arrowhead, Running Springs, Big Bear Lake and Twin Peaks.

Annual Ridership: 163,000 passengers per year.

Figure 2-8B shows the service are and major transit / commuter routes of the agencies that operate in the Mountain Region.

Desert Region

Barstow Area Transit (BAT)

Description: MV Transportation, Inc. administers the Barstow Area Transit system for the City of Barstow and currently operates three fixed routes with 12 daily runs occurring hourly. Service is available weekdays and Saturdays only.

Three Dial-a-Ride services are also available. City Dial-a-Ride offers door-to-door service in the City of Barstow six days a week. County Dial-a-Ride operates seven days a week with eight runs in each direction across the City of Barstow and five runs to Newberry Springs Monday through Friday. On Saturdays, seven trips are made in Barstow and four trips to Newberry Springs. Sunday service consists of three trips for both Barstow and Newberry Springs. All Ride Service provides door-to-door transit during time periods when no other service is available and during holidays.

Communities Served: Hinkley, Lenwood, Yermo, Harvard, Daggett and Newberry Springs.

Annual Ridership: 144,000 passengers per year.

Figure 2-8B. Bus Routes – Mountain Region

The Morongo Basin Transit Authority (MBTA)

Description: The Morongo Basin Transit Authority operates eight fixed routes that provide service on weekdays. Routes 1A, 1B, 12 and 14 also provide service on Saturdays with Route 12 offering service on Sunday.

MBTA also provides a curb-to-curb service, *Ready Ride*, primarily to seniors and persons with disabilities. This service is available Monday through Friday between Yucca Valley and Twentynine Palms. Limited service to Landers, Morongo Valley and Wonder Valley are available. No Saturday or Sunday service is provided.

Communities Served: Twentynine Palms, Yucca Valley, Joshua Tree, Landers and USMC Air Ground Combat Training Center.

Annual Ridership: 143,000 passengers per year.

City of Needles Area Transit (NAT)

Description: Needles Area Transit is administered by the City of Needles and consists of one fixed-deviated route that operates weekdays and on Saturdays. No Sunday service is provided.

Communities Served: Needles.

Annual Ridership: 34,000 passengers per year.

The Victor Valley Transit Authority (VVTA)

Description: The Victor Valley Transit Authority provides 13 local and two commuter fixed-service/deviated routes. Local service is available Monday through Friday and on Saturdays. No local service is provided on Sundays. Commuter service between Victor Valley and both Rancho Cucamonga/Ontario and San Bernardino is available weekdays only.

Direct Access services are provided for disabled individuals who are Direct Access certified riders. This service is provided Monday through Saturday by reservation only.

Communities Served: Adelanto, Apple Valley, Hesperia, Victorville, Phelan, Wrightwood, Pinon Hills, Lucerne Valley and Helendale.

Annual Ridership: Over 1 million passengers per year.

Figure 2-8C shows the service are and major transit / commuter routes of the agencies that operate in the Desert Region.

Figure 2-8C. Bus Routes – Desert Region

2.3.1.3 RAILROADS

Commuter Service

Commuter rail service in San Bernardino County is currently provided by Metrolink. Metrolink is the regional commuter rail system operated by the Southern California Regional Rail Authority (SCRRA), a joint powers authority created by the transportation commissions of the counties of Los Angeles, Orange, Riverside and San Bernardino, as mandated by the California Legislature through Senate Bill 1402, Chapter Four of Division 12 of the Public Utilities Code. Metrolink operates seven lines throughout the Los Angeles Metropolitan Area, three of which provide direct service to San Bernardino County; the San Bernardino Line, the Riverside Line and the Inland Empire Orange County (IEOC) Line.

San Bernardino Line

The San Bernardino Line is the most heavily used commuter line within the Metrolink system. This line provides commuters a direct connection between San Bernardino, the San Gabriel Valley and downtown Los Angeles. Primary destinations along this line are Ontario International Airport, California State University at Los Angeles, Claremont Colleges and Fairplex at Pomona. Currently, there are six stations located in San Bernardino County along this line.

San Bernardino Station

Parking:	185 spaces
Amenities:	N/A
Transit Connections:	Omnitrans Routes 1, 4 MARTA to Big Bear Valley or Arrowhead/Crestline Victor Valley Commuter

Rialto Station

Parking:	165 spaces
Amenities:	Public phones
Transit Connections:	Omnitrans Routes 15, 22

Fontana Station

Parking:	340 spaces
Amenities:	N/A
Transit Connections:	Omnitrans Routes 10, 14, 15, 19, 20, 61, 66, 67, 71

Rancho Cucamonga Station

Parking:	330 spaces
Amenities:	Public phones
Transit Connections:	Victor Valley Commuter

Upland Station

Parking:	170 spaces
Amenities:	Public phone, bike racks, lockers
Transit Connections:	Omnitrans Routes 62, 63, 66, 68

Montclair Station

Parking:	1,600 spaces
Amenities:	Child care center, Public phones
Transit Connections:	Foothill Transit Routes 187, 292, 479, 480/481, 690, 699 Omnitrans Routes 65, 66, 68, 70, 90

This line provides 30 trains per day and serves over 10,000 commuters every weekday, 2,800 on Saturdays and 1,800 on Sundays. Due to the high demand, this line is the only line that provides service on Sundays.

Riverside Line

The Riverside Line provides commuters with a direct connection between Riverside and downtown Los Angeles. A major destination along this line is the University of California at Riverside. Only the East Ontario Station is located in San Bernardino County, but some residents may access the Downtown Pomona station due to its close proximity.

East Ontario Station

Parking:	500 spaces
Amenities:	Public phones
Transit Connections:	Yellow Cab Co., Ontario Cab Co., Bell Cab Co.

Downtown Pomona Station

Parking:	295 spaces
Amenities:	N/A
Transit Connections:	N/A

This line offers 12 trains per day and serves over 4,000 commuters every weekday. Weekend service is currently not available on the Riverside Line.

Inland Empire Orange County Line

The Inland Empire Orange County (IEOC) Line extends between San Bernardino and Irvine in Orange County. This line provides commuters with a direct connection to many large employment centers located near John Wayne Airport. San Bernardino Station is the only stop associated with this line that is physically located in San Bernardino County, but residents may also access the system through the West Corona Station.

West Corona Station

Parking:	540 spaces
Amenities:	N/A
Transit Connections:	Corona Cruiser Red Line, Blue Line

Metrolink is planning to add a station in Yorba Linda, just outside San Bernardino County, which may also provide residents with another access point to this line. This line offers 12 trains every weekday and serves over 3,000 commuters. Weekend service is currently not available on the Inland Empire Orange County Line.

Rail facilities located within San Bernardino County are shown in **Figure 2-9A** through **Figure 2-9C**.

Amtrak

Amtrak has three trains that travel through San Bernardino County to their final destination. The Southwest Chief is a daily train that travels between Los Angeles and Chicago and stops in four cities in San Bernardino County - San Bernardino, Victorville, Barstow and Needles. The Sunset Limited and Texas Eagle are trains that arrive and depart every Sunday, Wednesday and Friday and make stops in the cities of Pomona, Ontario and Palm Springs before continuing to their final destinations of Orlando and Chicago respectively.

High-Speed Rail / Maglev

The Southern California Association of Governments (SCAG) has been studying the feasibility of constructing four Maglev, a magnetic levitation high-speed transportation system, corridors within the region. The intent of this project would be to create an integrated regional airport system by connecting all significant airport facilities as well as major activity centers and multi-modal transportation centers together using a high-speed transportation system. The initial four corridors are as listed below:

- Los Angeles International Airport (LAX) to March Inland Port in Riverside
- LAX to Palmdale International Airport
- Los Angeles Union Passenger Terminal (LAUPT) to Orange County (Anaheim)
- LAX to Orange County (Irvine Transportation Center).

After this initial network is constructed and shown to be a feasible alternative to the automobile, further expansion could include travel between such destinations as Los Angeles and San Diego, San Bernardino and Palmdale and possibly Los Angeles and Las Vegas.

SCAG's Regional Council approved the deployment of a 56-mile "Initial Operating Segment" (IOS), in December 2002 that would extend from West Los Angeles via LAUPT to Ontario International Airport. Additionally, advanced planning was approved for the LAX to Palmdale and Los Angeles to Orange County corridors.

Figure 2-9A. Heavy Rail (Freight) Facilities and Main Line and Metrolink – Valley Region

Figure 2-9B. Heavy Rail (Freight) Facilities and Main Line and Metrolink – Mountain Region

Figure 2-9C. Heavy Rail (Freight) Facilities and Main Line and Metrolink – Desert Region

2.3.1.4 AVIATION

Currently, there are 44 public and private airports operating throughout the county. The county manages, operates and maintains six of these facilities. San Bernardino County also has a total of 25 heliports; 4 are publicly operated, 11 for private medical use and 10 for private general use.

Ontario and San Bernardino International Airports are currently equipped to accommodate international flights. Ontario International is one of the fastest growing commercial airports in Southern California and is one of the top 100 busiest airports in the United States for both commercial and cargo services. San Bernardino International has been converted to a commercial airport from its previous use as Norton Air Force Base and is beginning to establish itself as an alternative destination for both passenger and cargo carriers.

The former George Air Force Base, located in Victorville, is one of the five federally-owned airports in the County and is also being converted to civilian use and has been renamed as the Southern California Logistics Airport. This facility is currently operating as a staging area for military personnel stationed at National Training Center in Fort Irwin. The final proposed use of this facility is to act as an intermodal gateway to Southern California through which a large portion of the freight being carried along the I-15 corridor can be distributed. The remaining four facilities are being maintained and operated by the respective government agencies by which they are owned.

Four municipal airports are located within San Bernardino County and are widely utilized for recreational and educational purposes with the number of annual operations at these facilities ranging from 12,500 to 125,000.

The remaining 27 airports are privately owned and can be found throughout the County. Cable Airport is considered to be the largest privately-owned airport in the United States and conducts 88,000 operations per year. The Hesperia and Hi Desert Airports are also greatly utilized.

The 44 airports and 25 heliports have been divided by the three planning areas: the Valley, the Mountains and the Desert. The location of these facilities are presented on **Figure 2-10A** through **Figure 2-10C**. **Table** provides details of the airports and **Table** provides details of the heliports in the County.

Figure 2-10A. Airport Facilities – Valley Region

Figure 2-10B. Airport Facilities – Mountain Region

Figure 2-10C. Airport Facilities – Desert Region

Table 2-11. San Bernardino County Airports

Airport	ID	Location	Size (acres)	Owner	Annual Operations	Based Aircraft*	No. of Runways	Services**	Storage Type & No. (% Used)***
Valley Region Airports (6)									
Cable	CCB	2 miles northwest of Upland	95	Cable Land Co – A Partnership	88,000	A – 356 H – 2 G - 2	1	34-06-41.550N	117-41-15.320W
Chino	CNO	3 miles southeast of Chino	1,097	San Bernardino County Dept of Airports	159,000	A – 900 H - 7	3	F, MA, MP, BOL	TH – 502 (100) MH – 115 (100) LH – 28 (80) TD – 220 (40)
Ontario International	ONT	2 miles east of Ontario	1,700	City of Los Angeles, Los Angeles World Airports	157,000	A – 21 H - 7	2	F. MA, MP, BOL, BOH	TD – 19 (20)
Redlands Municipal	L12	2 miles northeast of Redlands	194	City of Redlands	41,600	A – 201 H – 3 G - 2	1	F, MA, MP	TH – 140 (100) MH – 6 (100) LH – 3 (100) TD – 150 (30)
Rialto Municipal / Art Scholl Memorial	L67	3 miles northwest of Rialto	600	City of Rialto	125,000	A – 225 H – 25 UL - 1	2	F, MA, MP, BOL	TH – 120 (100) MH – 15 (100) LH – 10 (100) TD – 235 (5)
San Bernardino International	SBD	2 miles southeast of San Bernardino	1,329	San Bernardino International Airport Authority	62,000	A – 52 H - 1	1	F, MA, MP, BOH	LH – 7 (40) TD – 70 (50)
Mountain Region Airports (1)									
Big Bear City	L35	Immediately west of Big Bear City	117	Big Bear Airport District	31,450	A – 129 G – 1 UL - 1	1	F, MA, MP	TH – 24 (100) MH – 72 (100) LH – 3 (100) TD – 131 (54)
Desert Region Airports (37)									
Abraham Ranch	7CA1	16 miles southeast of Lucerne Valley	na	Harold W. Abraham	na	A - 4	1	34-24-52.999N	116-37-21.085W

Airport	ID	Location	Size (acres)	Owner	Annual Operations	Based Aircraft*	No. of Runways	Services**	Storage Type & No. (% Used)***
Adelanto	52CL	4 miles southwest of Adelanto	350	Adelanto Airport	na	A – 15 H – 3 G – 2 UL - 1	2	34-32-14.975N	117-27-38.175W
Apple Valley	APV	3 miles north of Apple Valley	456	San Bernardino County Dept of Airports	37,500	A – 157 H – 2 UL - 2	2	F, MA, MP	TH – 32 (100) MH – 16 (100) LH – 4 (100) TD – 30 (40)
B & E Ranch	2CA8	10 miles northwest of Yucca Valley	160	EZ or Bev Young	na	na	2	34-25-13.998N	116-36-38.082W
Baker	0O2	2 miles northwest of Baker	240	San Bernardino County Dept. of Airports	300	None	1	None	TD – 3 (0)
Barstow – Daggett	DAG	4 miles east of Barstow	1,087	San Bernardino County Dept. of Airports	36,500	A – 58 MA – 35 H – 1 UL - 3	2	None	TH – 7 (100) LH – 3 (0) TD – 25 (90)
Bauer	61CA	Near Twentynine Palms	na	Brooks L. Bauer	na	A - 1	1	34-10-29.000N	116-04-01.000W
Bicycle Lake AAF	BYS	3 miles northeast of Barstow	na	U.S. Army ATCA-ASO	na	na	2	None	na
Cadiz Airstrip	CA90	1 miles south of Cadiz	na	Cadiz, Inc.	na	na	1	34-30-50.000N	115-31-10.000W
Camino Airstrip	CL29	7 miles southeast of Goffs	na	The Metro Water District of S. CA	na	na	1	34-50-06.002N	114-57-25.901W
Cones Field	2CA2	2 miles north of Twentynine Palms	30	Robert Gorbould	na	na	3	34-09-46.006N	116-02-53.007W
Conner	41CL	13 miles northwest of Goffs	40	John E. Conner	na	na	1	35-05-49.972N	115-13-12.937W
Crosswinds	2CA3	4 miles northeast of Twentynine Palms	78	Joe Silvas	na	A - 3	2	34-09-36.004N	115-59-51.002W
Depue	6CA8	2 miles southwest of Lenwood	na	Bob G. Depue	na	A - 10	1	34-*51-23.000N	117-08-15.000W

Airport	ID	Location	Size (acres)	Owner	Annual Operations	Based Aircraft*	No. of Runways	Services**	Storage Type & No. (% Used)***
Dick Dale Skyranch	43CL	5 miles northeast of Twentynine Palms	80	Richard Monsour & Dick Dale	200	A - 2	2	34-12-22.001N	115-59-52.000W
Dick Taylor Airstrip	43CA	8 miles southwest of Kelso	na	Art Parker	na	na	1	34-52-54.959N	115-43-59.991W
Gene Wash Reservoir	5CL7	3 miles northwest of Parker Dam	na	The Metro Water District of S. CA	na	A - 2	1	34-18-29.052N	114-11-11.814W
Goldstone / GTS	00CA	28 miles north of Barstow	na	U.S. Government / NASA	na	na	1	None	na
Hansen	11CL	12 miles southwest of Adelanto	370	Ernest E. Hansen	600	A – 2 UL - 1	1	34-37-47.964N	117-39-12.207W
Hart Mine	9CL4	7 miles southeast of Ivanpah	na	F. Yeater Burnham	na	na	2	35-16-59.964N	115-11-32.943W
Harvard	CN23	8 miles east of Yermo	na	Duane D. Davis	632	A - 1	1	34-57-41.943N	116-40-31.110W
Hesperia	L26	3 miles south of Hesperia	26	Hesperia Airport, LLC	5,000	A – 43 UL - 1	1	34-22-38.004N	117-18-57.162W
Hi Desert	L80	3 miles northeast of Joshua Tree	115	Richardson Family Trust	8,200	A – 9 UL - 3	2	34-09-15.016N	116-15-08.034W
Holiday Ranch	27CA	7 miles northeast of Apple Valley	70	Buddy E. Holiday	na	A – 5 UL - 3	2	34-33-39.983N	117-04-50.142W
Kelly	51CA	17 miles east of Lucerne Valley	120	Glen Kelly	na	A - 3	1	34-25-24.998N	116-37-01.083W
Krey Field	0CL1	9 miles southwest of Adelanto	140	John F. Krey	na	A – 2 G - 12	2	34-34-09.970N	117-33-20.000W
Ludlow	5CA4	50 miles east of Barstow	na	H.H. & J. Knoll Ent., Inc.	na	A - 2	1	34-45-11.959N	116-09-15.043W
Needles	EED	5 miles south of Needles	796	San Bernardino County Dept. of Airports	10,500	A – 21 UL - 3	2	F, ma, mp	TH – 10 (100) LH – 2 (100) TD – 10 (2)
Osborne Private	8CA0	4 miles northeast of Victorville	na	H.S. Osborne	na	A - 6	1	34-35-01.977N	117-16-00.161W
Palisades Ranch	19CL	3 miles southwest of Helendale	240	Older Trust	na	na	1	34-42-43.955N	117-21-03.173W

Airport	ID	Location	Size (acres)	Owner	Annual Operations	Based Aircraft*	No. of Runways	Services**	Storage Type & No. (% Used)***
Southern California Logistics	VCV	5 miles northwest of Victorville	2,300	U.S. Air Force	33,938	A – 36 H - 2	2	F, MA, MP	LH – 15 (100)
Sun Hill Ranch	CA70	10 miles west of Helendale	215	I.C. Weigel	300	A - 1	2	34-45-28.946N	117-29-48.189W
Trona	L72	4 miles north of Trona	150	U.S. Dept. of Interior, BLM	7,000	A – 13 UL - 4	1	None	na
Twentynine Palms	TNP	6 miles east of Twentynine Palms	480	San Bernardino County Dept. of Airports	18,000	A – 13 G - 4	2	F, ma, mp	TH – 2 (100) LH – 1 (100)
Twentynine Palms EAF	NXP	9 miles northwest of Twentynine Palms	na	U.S. Navy	na	na	1	None	na
Valley Vista	6CA5	16 miles northwest of Yucca Valley	na	Leonard Combs	na	A - 12	2	34-20-14.008N	116-34-47.076W
Yucca Valley	L22	3 miles east of Yucca Valley	35	Yucca Valley Airport District	12,500	A – 45 H – 1 UL - 3	1	F, MA, mp	TH – 6 (100) LH – 8 (100) TD – 35 (100)

Note: * Based Aircraft: A – Airplanes (single or multi-engine)
MA – Military aircraft
H – Helicopters
G – Gliders
UL – Ultra-light

**Services: F – Fuel
MA – Major Airframe
MP – Major Power Plant
ma – Minor Airframe
mp – Minor power plant
BOL – Bottle oxygen low
BOH – Bottle oxygen high

***Storage: TH – T-Hangar
MH – Medium Hangars
LH – Large Hangars
TD – Tie-downs

Table 2-12. San Bernardino County Heliports

Heliport	ID	Location	Owner	Latitude	Longitude
Valley Region Heliports (9)					
Arrowhead Regional Medical Center	4CL9	1 mile west of Colton	Arrowhead Regional Medical	34-04-33.000N	117-20-57.000W
County	CL95	2 miles southeast of San Bernardino	San Bernardino County Sheriff Office	34-06-12.042N	117-16-19.151W
Fontana Police	CA29	Immediately north of Fontana	City of Fontana	34-06-06.039N	117-26-00.172W
Kaiser Hospital	94CA	2 miles south of Fontana	Kaiser Foundation Hospitals	34-04-21.542N	117-25-55.970W
Loma Linda University Medical Center	94CL	Immediately north of Loma Linda	Loma Linda University Medical Center	34-03-00.050N	117-15-52.149W
R.I. San Bernardino G/L Helistop	74CA	4 miles northeast of San Bernardino	Rockwell International Corporation	34-04-28.046N	117-16-09.150W
San Bernardino Community Hospital	1CL7	Immediately southeast of San Bernardino	Community Hospital	34-07-50.038N	117-19-18.158W
San Bernardino County Medical Center	CA80	2 miles west of San Bernardino	County Medical Center	34-07-40.039N	117-16-03.152W
SCE Eastern Division	8CA4	3 miles southwest of San Bernardino	Southern California Edison Co.	34-06-20.040N	117-21-06.161W
Mountain Region Heliports (3)					
Bear Valley Hospital	CN45	Immediately north of Big Bear Lake	Bear Valley Hospital	34-14-48.000N	116-59-18.000W
M H 15 Heaps Peak USFS	13CA	3 miles southeast of Lake Arrowhead	Heaps Peak Helibase	34-14-07.000N	117-09-17.000W
Mountains Community Hospital	47CA	2 miles northeast of Lake Arrowhead	Mountains Community Hospital	34-15-55.000N	117-10-04.000W
Desert Region Heliports (13)					
Barstow Community Hospital	CL17	1 mile east of Barstow	Barstow Health System, Inc.	34-53-36.937N	117-01-06.144W
Barstow Service Center	9CA1	1 mile southeast of Barstow	Southern California Edison Co.	34-52-30.941N	116-59-48.140W
Hi-Desert Memorial Hospital	9CA4	2 miles west of Joshua Tree	Hi-Desert Memorial Hospital District	34-07-54.020N	116-16-35.036W
IPP Adelanto	CA12	2 miles southwest of Adelanto	Intermountain Power Agency	34-32-52.975N	117-26-11.176W
Lugo Substation	01CA	4 miles southwest of Hesperia	Southern California Edison Co.	34-22-07.004N	117-22-12.169W
Morongo Basin CHP	CL28	2 miles east of Joshua Tree	State of California	34-08-05.019N	116-16-30.036W
Ord Mountain	5CA2	17 miles southeast of Barstow	Southern California Edison Co.	34-52-30.941N	116-59-48.140W
SCE High Desert District	CA61	Immediately north of Victorville	Southern California Edison Co.	34-28-36.992N	117-17-19.162W

Heliport	ID	Location	Owner	Latitude	Longitude
SCE Solar I	06CA	3 miles south of Yermo	Southern California Edison Co.	34-52-14.948N	116-50-03.125W
St. Mary Desert Valley Hospital	79CA	1 mile northwest of Apple Valley	St. Mary Desert Valley Hospital	34-32-34.984N	117-16-04.160W
Victor Valley Community Hospital	69CA	Immediately north of Victorville	Victor Valley Community Hospital	34-31-40.000N	117-17-34.000W
William E. Poole	10CA	6 miles northwest of Apple Valley	Chet Rasberry Inc.	34-36-07.796N	117-10-21.154W
Yucca Valley Service Center	8CA6	1 mile east of Yucca Valley	Southern California Edison Co.	34-07-34.025N	116-24-48.045W

2.3.1.5 GOODS MOVEMENT

Due to its location at the eastern edge of the Los Angeles Metropolitan Area, the transportation and distribution of goods is a very important industry in San Bernardino County. Millions of tons of freight are distributed to destinations across the United States utilizing County roadways, rail lines and airports. Below are descriptions of each mode of transportation as it relates to goods movement.

Trucking

According to U.S. Census Bureau Nonemployer Statistics, 2001 Warehousing & Transportation, there were 4,022 trucking entities operating in San Bernardino County. Of this total, 1,566 engaged in local delivery routes and the remaining 2,184 conducted long-distance deliveries. A local trip generally occurs in the same metropolitan area and only requires a single day to complete. Long-distance trips are those trips that occur between metropolitan areas and require greater periods of time to complete. An additional 272 firms concentrate on goods that require specialized delivery due to inherent characteristics of the product (i.e., size, weight, etc.) regardless of trip length. These entities generated a total of $337,747,000 in total receipts for 2001.

Truck routes are divided into five different classifications according to offtracking characteristic of longer vehicles. Offtracking is the tendency of a vehicles rear wheels to follow a shorter path than the front wheels when turning. Roadways with narrower right-of-way are more subject to problems related to offtracking and are therefore subject of restricted use. The five classifications for truck routes and their limit criteria are provided below:

- **National Network (NN)** – This classification is primarily comprised of the National System of Interstate and Defense Highways plus non-Interstate Federal-aid Primary System. This classification was created from the Surface Transportation Assistance Act (STAA) in 1982. Vehicles allowed in these facilities include (1) doubles with 28.5-foot trailers, (2) singles with 48-foot semi-trailers and unlimited kingpin-to-axle (KPRA) distance, (3) unlimited length for both vehicle combinations, and (4) widths up to 102 inches. Examples of these roadways in San Bernardino County are I-10, I-5, I-15, I-40, SR-58 and SR-60.

- **Terminal Access (TA)** – Roadways in this classification are portions of State routes, or local roads that can accommodate STAA trucks. California Assembly Bills AB 866 and SB 2232 created the limiting dimensions for a "California Legal" truck. A vehicle can be no larger than 14 feet in height, 102 inches (8.5 feet) in width and 40 feet in length if a single vehicle, and 65 feet in length if a combination vehicle. An exception of 75 feet in length is given for truck tractor – semi-trailer – trailer combinations (doubles) if each trailer is no more than 28.5 feet in length. TA routes allow STAA trucks to travel between NN routes, access a truck's operating facility or reach a freight origination, destination or handling facility. Roadways in San Bernardino County that fall under this classification include portions of SR-18, SR-30, SR-62, US-95 and SR-127.
- **California Legal (CL)** – This classification includes roadways that can accommodate "California Legal" vehicles. STAA trucks are not allowed due to limiting geometrics such as sharp curves and/or lack of turn-around space. Examples of this roadway classification in San Bernardino are SR-38 east of Bryant Street, SR-178 in Trona and SR-330 north of the City of San Bernardino.
- **California Legal - Advisory (A)** – This classification advises drivers that the designated roadway cannot safely accommodate CL trucks with a KPRA of less than 38 feet due to limiting geometrics. CL trucks may travel on these routes but driver is legally responsible for any unsafe offtracking. Roadways in San Bernardino County that are designated in this classification include SR-30 between the cities of Upland and Rancho Cucamonga, SR-138 between I-15 and SR-18 and SR-173 between Silverwood Lake and Lake Arrowhead.
- **Restricted (R)** – These roadways have restrictions on certain trucks or loads, such as gross weight, number of axles or hauling of flammable materials. (Note: Longer combination vehicles are not allowed in California, such as Rocky Mountain Doubles, Triple Trailers and Turnpike Doubles.) San Bernardino County facilities under this classification are SR-30 and SR-83 within the City of Upland.

Within San Bernardino County, the Chino Valley Freeway (SR-71) is the only highway designated as a truck route in the unincorporated County area. This facility has also received truck route designation from Caltrans. Including this facility, there are approximately 1,220 miles of designated truck routes on 24 facilities throughout San Bernardino County. These routes and their designations are needed to accommodate the large number of cargo vehicles utilizing the roadways throughout San Bernardino County. These routes are provided in **Figure 2-11A** through **Figure 2-11C**. General descriptions and the established limits of each route are detailed in **Table 2-13** below.

Figure 2-11A. Truck Routes – Valley Region

Figure 2-11B. Truck Routes – Mountain Region

Figure 2-11C. Truck Routes – Desert Region

Table 2-13. San Bernardino County Existing Truck Routes

Route	Description		Designation*	Length in SBO County (miles)
	Begin	End		
2	SBO / LA County Line, Community of Wrightwood	Jct SR-138, San Bernardino County	TA	5
10	SBO / LA County Line, City of Montclair	SBO / Riv County Line, City of Yucaipa	NN	38
15	SBO / Riv County Line, City of Ontario	Nevada State Line, San Bernardino County	NN	198
18	Jct I-10, City of San Bernardino	Old Waterman Cyn Rd, San Bernardino County	TA	9
18	Old Waterman Cyn Rd, San Bernardino County	Marble Cyn Rd near Camp Rock Rd, San Bernardino County	A	56
18	Marble Cyn Rd near Camp Rock Rd	SBO / LA County Line, San Bernardino County	TA	51
30	SBO / LA County Line, City of Upland	Benson Ave, City of Upland	A	1
30	Benson Ave, City of Upland	Campus Ave, City of Upland	R	3
30	Campus Ave – City of Upland	Highland and Haven Aves, City of Rancho Cucamonga	A	4
30	Haven Ave, City of Rancho Cucamonga	Jct I-10, City of Redlands	TA	26
38	Jct I-10, City of Redlands	Bryant St, City of Yucaipa	TA	9
38	Bryant St, City of Yucaipa	Jct SR-18, Big Bear Dam	CL	51
40	Jct I-15, City of Barstow	Arizona State Line, City of Needles	NN	155
58	SBO / LA County Line	Jct I-15, City of Barstow	NN	35
60	SBO / LA County Line, City of Chino	SBO / Riv County Line, City of Ontario	NN	10
62	SBO / Riv County Line, Community of Morongo Valley	Arizona State Line, Community of Earp	TA	131
71	SBO / LA County Line, City of Chino Hills	SBO / Riv County Line, City of Chino Hills	TA	9
83	Jct SR-71, City of Chino Hills	Jct US-66, City of Upland	TA	12
83	Jct US-66, City of Upland	Baseline Rd, City of Upland	A	1
83	Baseline Rd, City of Upland	Jct SR-30, City of Upland	R	1
95	Nevada State Line, San Bernardino County	Jct I-40, City of Needles	NN	23
95	Jct I-40, City of Needles	SBO / Riv County Line, San Bernardino County	TA	50
127	Jct I-15, City of Baker	SBO / Inyo County Line, San Bernardino County	TA	91
138	Jct I-15, Community of Cajon Junction	SBO / LA County Line, Community of Pinon Hills	A	22
142	Pipeline Ave, City of Chino	Jct SR-71, City of Chino	TA	1
173	Jct SR-138, north of Silverwood Lake	Jct SR-18, south of Lake Arrowhead	A	25
178	SBO / Kern County Line, Community of Trona	Trona Rd, Community of Trona	CL	15
189	Jct SR-18, Community of Twin Peaks	Jct SR-173, Community of Lake Arrowhead	A	6
215	Jct I-15, Community of Devore	SBO / Riv County Line, City of Colton	NN	17

Route	Description		Designation*	Length in SBO County (miles)
	Begin	End		
247	Jct SR-62, City of Yucca Valley	Jct I-15, City of Baker	TA	78
259	Jct I-215, City of San Bernardino	Jct SR-30, City of San Bernardino	TA	2
330	Begin SR-330, City of San Bernardino	City Creek Rd, San Bernardino County	TA	4
330	City Creek Rd, San Bernardino County	Jct SR-18, Community of Running Springs	CL	12
395	SBO / Kern County Line, Community of Red Mountain	Jct I-15, City of Hesperia	NN	69

* Route designations are as follows: NN – National Network (Federal –STAA Network); TA – Terminal Access (State – STAA Network); CL-40 – California Legal (40-foot KPRA); R – Special Restriction; A – Advisory.

Rail Freight

Class I Railroads

There are two Class I freight railroads that operate lines in San Bernardino County, Burlington Northern and Santa Fe Railway (BNSF) and Union Pacific (UP) Railroad. Classification is dependent upon the annual operating revenue generated by a railroad and is broken down as follows: Class I have an operating revenue of greater than $258.5 million, Class II or regional railroads have an annual operating revenue between $40 million and $258.5 million and Class III or local railroads have an annual operating revenue of less than $40 million. These railroads are responsible for moving a vast majority of the freight that passes through the Ports of Los Angeles and Long Beach. Both utilize the Alameda Corridor to transfer cargo from the ports to the Redondo Junction railyard near downtown Los Angeles.

The headquarters for the Southern California Division of the BNSF railroad is located in the city of San Bernardino and its territory extends from Redondo Junction near the ports to Needles in eastern San Bernardino County, a distance of nearly 320 miles. Within this division are three mainline subdivisions: San Bernardino, Cajon and Needles.

Within the San Bernardino Subdivision, BNSF trains utilize the Orange North-American Transportation Access Corridor (OnTrac) through Orange and Riverside counties to reach an intermodal transfer facility in the city of San Bernardino. This 68-mile segment is double tracked for its entire length. Approximately 71 million gross tons (MGT) of freight are moved through this subdivision between the ports and the Inland Empire.

The intermodal transfer facility, shown in Figure 2-12, was originally completed in 1985 and has been upgraded twice, once in 1989 and again in 1996. It currently contains the following attributes:

- 12 strip tracks capable of handling a total of 248 car lengths;
- Space to store 200 car lengths;
- 2 parking lots with a capacity of 2,005 vehicles;
- 12 service lanes for commercial vehicles; and
- 40 closed-circuit television cameras to monitor daily activities.

Figure 2-12. BNSF San Bernardino Intermodal Transfer Facility

Each year, BNSF ranks its facilities in terms of volume of lifts conducted, with a lift being defined as the process of moving a container or trailer to and/or from a rail car. As of the end of the 2003 fiscal year, this facility currently ranks as BNSF's fourth largest facility in terms of lifts with a total of 497,000.

From San Bernardino to Barstow, BNSF trains travel through the Cajon Subdivision. This segment extends for approximately 80 miles and is double tracked. The grades found within this subdivision are substantial and the use of helper locomotives is required. This segment carries between 90 to 95 trains daily, including 20-22 UP trains and up to 2 Amtrak trains. This subdivision carries approximately 132 MGT of freight on both BNSF and UP trains.

At Barstow, BNSF has a classification yard where freight cars are segregated by the carriers according to their destinations or deliveries and made ready for proper train movement or delivery. BNSF ranks its classification yards in terms of the average daily number of cars processed, excluding cars that do not change trains at the terminal and intermodal and coal cars. At the end of the 2003 fiscal year, the Barstow Yard ranked third with a total of 1,323 daily average cars processed.

After leaving the Barstow railyard, BNSF trains continue eastward through the Needles Subdivision, using the Banning Pass to continue east to Albuquerque, New Mexico and beyond. This subdivision is 168 miles in length and double tracked. Some substantial grades are also located along this segment, but helper locomotives are not needed. BNSF carries approximately 120 MGT of freight along the entire line.

The UP network in San Bernardino County consists of both original UP routes as well as the former Southern Pacific network and are organized into four subdivisions: Los Angeles, Alhambra, Yuma and Mojave. In addition to these facilities, UP also operates a classification yard, the West Colton Yard, located in the city of Colton.

UP trains travel eastward from Redondo Junction to the West Colton classification yard utilizing either the Alhambra or Los Angeles subdivision. Both of these subdivisions are part of the Alameda Corridor East project which is designed to greatly improve rail operations through the San Gabriel Valley region. These subdivisions carry approximately 13 MGT of freight annually.

The Los Angeles subdivision extends approximately 60 miles from Redondo Junction to just east of the community of Yermo. This subdivision is double tracked and currently accommodates a majority of UP trains traveling from the ports. The Alhambra Subdivision also extends eastward from Redondo Junction but terminates at the West Colton classification yard. At the West Colton classification yard, UP trains are broken down and rearranged according to destination and delivery type.

The Yuma Subdivision extends southeast from the West Colton classification yard approximately 200 miles to Yuma, Arizona. This subdivision is double tracked and carries nearly 60 trains daily. This subdivision carries approximately 47 MGT annually. The segment between West Colton and Beaumont contains some substantial grades and the use of helper locomotives is needed.

The Mojave Subdivision, or the 'historic' route, extends northward from West Colton Yard through the Cajon Pass to Summit and over the Tehachapi Pass to Bakersfield. This segment carries approximately 12 UP and 30 BNSF trains daily and handles approximately 47 MGT of freight annually.

Class II Railroads

There are currently no Class II railroads in San Bernardino County.

Class III Railroads

Two Class III railroads are currently operating in San Bernardino County. Traffic along the Trona Railway, operating near the Town of Trona in the northwestern portion of the county, only consists of railcars loaded with borax destined for overseas markets. This railroad's activity level is near 5 million gross ton-miles per mile (MGT-M/M) and occurs over 31 total miles of track. The Arizona & California Railroad operates along a branch line from the main BNSF and carries cargo to the Phoenix Metropolitan Area. This railroad operates 134 miles of track and carries approximately five MGT-M/M of cargo per year.

Air Freight

Ontario International Airport (ONT) is served by 11 major U.S. airfreight carriers and conducts 425 daily commercial operations. This traffic volume resulted in approximately 547,500 tons in cargo being processed through the facility in 2002. The freight movement system surrounding ONT also includes two Class I railroads, four major freeways and an expanding network of freight forwarders.

The airfreight carriers operating from ONT include Airborne Express, Ameriflight, DHL, Empire Airways, Evergreen, Express Net, Federal Express, Kalitta Air, West Air, Union Flights and United Parcel Service (UPS). UPS is the largest airfreight carrier operating at ONT, consisting of approximately 70 percent of the airport's cargo, and began four weekly flights to China using Boeing 747 cargo aircraft, creating a direct link to the Pacific Rim's largest and fastest growing market.

There are two other facilities in San Bernardino County that are currently developing operating plans and infrastructure to begin processing large quantities of cargo, San Bernardino International Airport, former Norton Air Force Base in the City of San Bernardino, and Southern California Logistics Airport (SCLA), former George Air Force Base in Victor Valley. At completion, SCLA is expected to have the capacity to handle nearly four million tons of air cargo annually and grow from three to nine million tons per year for the next twenty years. San Bernardino International Airport currently has three airfreight carriers, Custom Air Transport, Heavylift and Kitty Hawk, operating at the facility and is located within two miles of the state-of-the-art Santa Fe Intermodal Rail Facility and is in close proximity of six major freeways.

2.3.1.6 TRANSPORTATION DEMAND MEASURES

Park and Ride Facilities

Within San Bernardino County, there are eleven park and ride facilities located across the southwestern portion of the county. Currently, there are five facilities located in the Valley Region, four in the Desert Region and two in the Mountain Region. Each Park & Ride lot is free of charge and open for public use 24 hours a day, seven days a week. The following information contains descriptions of each facility, operating agency, average daily usage of each facility and transit connections.

Valley Region

- **Chino Park & Ride**
  Location and Size: Chino Avenue exit of SR-71 in Chino, 163 spaces
  Operator: Caltrans
  Usage Rate: 25 percent
  Amenities: Lighting, call boxes and bike lockers
  Connecting Transit: None

- **Montclair Transportation Center**
  Location and Size: 1 mile north of I-10 in Montclair, 1,700 spaces
  Operator: Caltrans
  Usage Rate: 40 percent
  Amenities: Lighting, telephone and bike lockers
  Connecting Transit: Foothill Transit - 178, 187, 292, 479, 480, 492, 690
  Inland Empire Connection – 100, 110
  MTA – 497
  Metrolink – San Bernardino Line
  Omnitrans – 65, 66, 68, 70

- **Rancho Cucamonga Park & Ride**
  Location and Size: Baseline Road exit off I-15 in Rancho Cucamonga, 58 spaces
  Operator: Caltrans
  Usage Rate: 45 percent
  Amenities: Lighting and call boxes
  Connecting Transit: Omnitrans – 67

- **Bloomington Park & Ride**
  Location and Size: Cedar Avenue exit off I-10 in Bloomington, 62 spaces
  Operator Caltrans
  Usage Rate: 55 percent
  Amenities: None
  Connecting Transit: Omnitrans – 29

- **Yucaipa Park & Ride**

Location and Size: Yucaipa Boulevard exit off I-10 in Yucaipa, 80 spaces
Operator: Caltrans
Usage Rate: 50 percent
Amenities: Lighting
Connecting Transit: Omnitrans – 8, 9

Mountain Region

- **Lake Arrowhead Park & Ride**
  Location and Size: Junction of SR-18 and SR-173 in Lake Arrowhead, 19 spaces
  Operator: Caltrans
  Usage Rate: 2 percent
  Amenities: Lighting
  Connecting Transit: MARTA – 2

- **Running Springs Park & Ride**
  Location and Size: Junction of SR-18 and SR-330 in Running Springs, 20 spaces
  Operator: Caltrans
  Usage Rate: 10 percent
  Amenities: Lighting, telephone and restroom
  Connecting Transit: MARTA – 2

Desert Region

- **Victor Valley Church of Christ Park & Ride**
  Location and Size: 1 mile west of I-15 off Bear Valley Road in Victorville, 50 spaces
  Operator: City of Victorville
  Usage Rate: 2 percent
  Amenities: Lighting
  Connecting Transit: VVTA – 43

- **Bear Valley Park & Ride**
  Location and Size: Bear Valley Road exit off I-15 in Victorville, 70 spaces
  Operator: Caltrans
  Usage Rate: 200 percent
  Amenities: Lighting and call boxes
  Connecting Transit: VVTA – 43, 44, 52

- **Victor Valley Transportation Center**
  Location and Size: One half mile east of I-15 off D Street exit in Victorville, 170 spaces
  Operator: City of Victorville
  Usage Rate: 12 percent
  Amenities: Lighting
  Connecting Transit: Amtrak – Southwest Chief, Sunset Limited
  VVTA – 41, 51

- **"L" Street Park & Ride**
  Location and Size: L Street exit off I-15 in Barstow, 130 spaces
  Operator: Caltrans
  Usage Rate: 25 percent
  Amenities: Lighting
  Connecting Transit: None

High Occupancy Vehicle (HOV) Carpool Lanes

San Bernardino County has approximately 43 miles of carpool lanes along four separate freeways, I-10, SR-60, SR-210 and SR-71. All of the existing facilities are currently located in the western portion of the Valley Region. Construction of an additional 18 miles is scheduled to occur in the next several years and will located in the eastern portion. A list of the existing and planned carpool lanes is provided below:

Existing

- An 8.5-mile facility along SR-71 in Chino was completed in 1997.
- A 10-mile segment of SR-60 in Chino, Ontario and an unincorporated portion of San Bernardino County also opened in 1997.
- A 9.9-mile segment of I-10 through Ontario and Montclair was opened in January 2000.
- A 6-mile portion of SR-210 in Rancho Cucamonga and Fontana was completed in 2001.
- A 9-mile segment along SR-210 in Rancho Cucamonga and Upland opened in 2002.

Planned

- An 8-mile segment of SR-210 in Rialto and San Bernardino is expected to open in 2006.
- A 6-mile segment on I-215 is under development and will travel through downtown San Bernardino and is scheduled for completion in 2007.
- A 4-mile section of I-215 extending from the Riverside County line to I-10 through Grand Terrace and Colton. An Environmental Impact Report is currently being prepared for this project and will continue until 2009.

Ridesharing

SANBAG operates two programs for individuals and one for employers through which commuters can receive financial incentives by participating in a rideshare program. Option Rideshare is a program that offers commuters financial incentives of up to $2.00 per day when they use a rideshare mode for three consecutive months. Team Ride is an extension of the initial program that provides discounts and special offers to participants at restaurants and events in both San Bernardino and Riverside Counties. The final program is the Inland Empire Commuter Services Program. This program is designed to help employers develop and maintain a rideshare program through continuing education and assistance from SANBAG free of charge.

Non-Motorized Facilities

San Bernardino County has a Non-Motorized Transportation Plan that deals primarily with bicycle and pedestrian use by residents for recreational and commuting purposes. This plan was most recently updated in 2001 and is an attempt to develop a more comprehensive approach toward future planning and construction activities in regards to bicycle and pedestrian infrastructure.

Bicycle Facilities

Two major issues involving bicycle usage are present in San Bernardino County: safety and access. The increasing volume of motorized traffic on major arterials and at intersections throughout the County is becoming a safety hazard for bicyclists. These thoroughfares are becoming barriers to bicycle and pedestrian traffic attempting to cross these corridors. The lack of a comprehensive bicycle network requires cyclists to travel along high-volume arterial roadways, many of which that lack appropriate bicycle facilities, without an acceptable alternative. Many roadways in both the Mountain and Desert Regions of the County do not contain adequate bicycle facilities to protect cyclists from potential dangerous conditions as reduced visibility and maneuverability or proximity to high-speed traffic.

Many of the cities within San Bernardino County are experiencing a large growth in the number of households within their boundaries. As residential development continues, the current trend is to introduce circuitous street patterns and walled subdivisions to create neighborhoods. This type of design, coupled with the increased traffic along most major arterials, presents obstacles to cyclists attempting to access specific areas for shopping, work, school and recreational purposes. This issue is particularly critical for schoolchildren utilizing bicycles to access school and recreational areas.

The development of a comprehensive bicycle network would have measurable effects upon the quality of life for San Bernardino County residents by improving critical issues such as traffic congestion, vehicle exhaust emissions, vehicle noise emissions and energy consumption. It would also produce a more attractive and inviting environment in which to live, work or relax.

To implement a comprehensive bicycle network, the County would require a concerted effort of four basic elements: education, enforcement, engineering and funding. Education would be targeted towards increasing the knowledge of both bicyclists and motorists in regards to the rights and responsibilities of both parties on the roadway. A comprehensive enforcement plan would be necessary to ensure existing traffic and parking laws are applied to create a safety and efficient environment. Engineering and design would be used to develop a comprehensive network of facilities throughout the County with as little impact on current motorized activities as possible. An aggressive funding approach is also needed in obtaining grants and other funding sources for these improvements.

The mode split for bicycle use as a form of commuting in San Bernardino County, as determined in the 1990 census, was less than one percent. Several of the cities within San Bernardino County have created bicycle and/or pedestrian plans for specific areas or improvements, but there is not a comprehensive countywide plan to ensure that these individual efforts work together to create a cohesive network. The cities of Ontario and Rancho Cucamonga have the most extensive network

of bike lanes and paths, but most cities have a system of disconnected Class II bike lanes or Class III bike routes. Two Class I multi-use trails, Santa Ana River Trail (Colton – Redlands) and the Pacific Electric Inland Empire Trail (Rancho Cucamonga), are planned for construction within the next several years and could be used as a trunk line from which additional facilities could be developed. **Table** shows the existing bicycle facilities by type and jurisdiction.

Table 2-14. Existing Bicycle Facilities by Type and Jurisdiction

Class	Name	Cities/Communities	From	To
Valley Region				
2	Benson Ave	Chino	Philadelphia St	Schaefer Ave
2	Chino Ave	Chino	Chino Valley Fwy	Euclid Ave
2	Cypress Ave	Chino	Schaefer Ave	Edison Ave
2	Eucalyptus Ave	Chino	Bluebell Dr	Central Ave
2	Monte Vista Wy	Chino	Philadelphia St	Chino Hills Pkwy
2	Schaefer Ave	Chino	Chino Valley Fwy	Cypress Ave
1	Edison ROW	Fontana	Rancherias Dr	Locust Ave
1	Path 3 (NW Fontana)	Fontana	Cherry Ave	Sierra Ave
2	Barton Rd	Grand Terrace	Mt. Vernon Ave	Colton City Limit
2	Mt. Vernon Ave	Grand Terrace	Main St	Barton Rd
2	Anderson St	Loma Linda	Redlands Blvd	La Mar Rd
2	Barton Rd	Loma Linda	Benton St	Barton Frontage Rd
2	Benton St	Loma Linda	Shepardson Dr	Barton Rd
2	Mountain View Ave	Loma Linda	Barton Rd	Beaumont Ave
2	Shepardson Dr	Loma Linda	St. Mound St	Benton St
2	St. Mound St	Loma Linda	Anderson St	Shepardson Dr
1	Creekside Dr	Ontario	Deer Creek Lp	Lytle Creek Lp
1	Deer Creek Lp	Ontario		
1	Edison ROW	Ontario	Riverside Dr	Archibald Ave
1	Lytle Creek Lp	Ontario		
1	Mission Blvd	Ontario	Ontario Blvd	Walker Ave
1	Path 1	Ontario	Deer Creek Lp	Riverside Dr
1	Philadelphia St	Ontario	Walker Ave	Cucamonga Creek
1	Riverside Dr	Ontario	Turner Ave	Milliken Ave
1	Walker Ave	Ontario	Mission Blvd	Philadelphia St
3	Grove Wy	Ontario	4th St	Ontario Blvd
3	I St	Ontario	Benson Ave	Grove Ave
3	Ontario Blvd	Ontario	Grove Ave	Mission Blvd
2	4th St	Ontario, Rancho Cucamonga	Cucamonga Creek	Etiwanda Ave
1	Cucamonga Creek	Rancho Cucamonga	Marble Avenue	Carnelian Ave s/o Vivero
1	Demens Creek	Rancho Cucamonga	Gooseneck Ave	Cucamonga Creek
1	Etiwanda Ave	Rancho Cucamonga	Highland Ave	Baseline Rd
1	Path 2	Rancho Cucamonga	Church St	Terra Vista Pkwy
1	Wilson Ave	Rancho Cucamonga	Rochester Ave	Etiwanda Ave
2	Baseline Rd	Rancho Cucamonga	Cucamonga Creek	Rochester Ave
2	Foothill Blvd	Rancho Cucamonga	Baker Ave	Etiwanda Ave
2	Victoria Park Ln	Rancho Cucamonga	Fairmont Wy	Baseline Rd
3	Archibald Ave	Rancho Cucamonga	La Colina Dr	4th St
3	Banyan St	Rancho Cucamonga	Cucamonga Creek	Archibald Ave
3	Church St	Rancho Cucamonga	Haven Ave	Milliken Ave

Class	Name	Cities/Communities	From	To
3	Haven Ave	Rancho Cucamonga	Tackstem Dr	4th St
3	Lemon Ave	Rancho Cucamonga	Archibald Ave	Haven Ave
3	Milliken Ave	Rancho Cucamonga	Summit Ave	4th St
3	Terra Vista Pkwy	Rancho Cucamonga	Church St	Church St
2	Kendall Dr	San Bernardino	Palm Ave	40th St
2	Northpark Blvd	San Bernardino	University Pkwy	Electric Ave
2	University Pkwy	San Bernardino	Cajon Blvd	Northpark Blvd
1	Deakin Ave	Upland	24th St	Mildura Ave
1	Mildura Ave	Upland	Mountain Ave	Benson Ave
2	Bryant St	Yucaipa	Date Ave	Ave E
2	California St	Yucaipa	Yucaipa Blvd	Ave F
Desert Region				
1	Navajo Rd	Apple Valley	Hwy 18	Ottawa Rd
1	Navajo Rd	Apple Valley	Nisqualli Rd	Tussing Ranch Rd
1	Ocotillo Wy	Apple Valley	Cholla Rd	Pioneer Rd
1	Yucca Loma Rd	Apple Valley	Havasu Rd	Algonquin Rd
2	E Ave	Hesperia	Peach Ave	Olive St
2	G Ave	Hesperia	Olive St	Lime St
2	Olive St	Hesperia	E Ave	G Ave
2	Peach Ave	Hesperia	Bear Valley Rd	E Ave
2	Aztec Ave	Twentynine Palms	Luckie Ave	Utah Tr
2	Bagley Ave	Twentynine Palms	El Paseo Dr	Two Mile Rd
2	El Paseo Dr	Twentynine Palms	Mesquite Springs Rd	Bagley Ave
2	Joe Davis Dr	Twentynine Palms	Luckie Ave	Utah Tr
2	Luckie Ave	Twentynine Palms	Two Mile Rd	Joe Davis Dr
2	Mesquite Springs Rd	Twentynine Palms	Two Mile Rd	El Paseo Dr
2	Two Mile Rd	Twentynine Palms	Mesquite Springs Rd	Utah Tr
2	Utah Tr	Twentynine Palms	Aztec Ave	Joe Davis Dr
2	Bear Valley Rd	Victorville, Hesperia	Peach Ave	Mojave River

Source: San Bernardino County Non-Motorized Transportation Plan 2001 Update

Pedestrian Facilities

As the predominance of the automobile continues, the attention paid to pedestrians has diminished. To alleviate this growing problem, attention must be paid to the design and development of appropriate pedestrian facilities at two different levels of application: regional and local. Regional improvements can be applied to situations that occur throughout the County and require less specialized characteristics while local applications may address particular issues that are presented under unique conditions.

The following four major elements of a regional approach to pedestrian facility improvement should be included in any comprehensive plan:

- **Access to transit:** This is vitally important since most transit agencies rely heavily upon pedestrians as the core of their ridership base. Residential and commercial developments should be designed to include greater pedestrian access and transit continuity. Of particular importance is the need to ensure that ADA-compatible access is available to all forms of transit.

- **Barriers to pedestrian travel:** Adequate facilities are needed to provide pedestrians a safe and convenient method of crossing major freeways and arterials. Improvements such as pedestrian overpasses and tunnels could be constructed to provide direct connectivity between neighborhoods. Other improvements could be the inclusion of pedestrian paths or trails within roadway right-of-way corridors to provide greater access to pedestrians.
- **Regional trails or pathways:** A regional system of trails and pathways could be developed in conjunction with local plans to create a countywide network. This approach would provide be a significant benefit to the quality of life for residents and provide a unique access to pedestrians.
- **Regional activity centers:** The inclusion of pedestrian-based access plans for major activity centers would enhance the overall quality of the development and provide patrons with multiple modes of access.

The following are examples of local efforts that could be used to help increase pedestrian access:

- **Multi-modal design:** Pedestrian access can be greatly enhanced by using a mixed-use development philosophy. This type of design can be tailored to provide pedestrians with an equal, if not greater, level of access than other modes of transportation. This approach may also lead to the need for less space for parking due to the "park once" mindset, where patrons can access several different businesses without leaving the development.
- **Traffic calming:** Improvements such as street trees, surface treatments and raised intersections and crosswalks not only create a more pleasant environment but also provide a greater level of safety for pedestrians. These improvements are especially effective in areas surrounding schools.
- **Sidewalk plans:** Local jurisdictions should develop sidewalk plans to ensure that adequate sidewalks are made available in pedestrian heavy areas and along major arterials, especially in areas surrounding schools. These plans would address issues such as the physical condition, accessibility and connectivity of existing sidewalk networks.
- **Education and awareness**: The development of an education and awareness program could be implemented in schools through a pedestrian safety course. Additional steps could be the inclusion of pedestrian awareness issues on Department of Motor Vehicle driver license tests, such as etiquette for road sharing between modes.

Trails

Trails are an important part of the non-motorized transportation system that currently exists within San Bernardino County. These facilities provide public access to open space lands and fulfill an increasingly important role as recreational amenities. Within the San Bernardino County government, the Department of Regional Parks is responsible for identifying and maintaining all county-designated regional trails. All of the county-designated trail facilities are multi-use trails that allow pedestrian, bicycle and equestrian use.

Although many local trail systems are located throughout the County, there are currently only the following ten trail facilities that have been identified by the County as "regional" trails:

- East Calico Hiking Trail is located in Calico Ghost Town Regional Park. It consists of a half-mile natural decomposed granite trail built in the 1960's.
- Cucamonga Creek Trail is a one and one-half mile long facility located along a Flood Control maintenance road in San Antonio Heights. Half of this length is composed of compacted dirt with the remaining portion consisting of a paved road. This facility was originally created in the 1980's and was opened for full use in April 2001.
- Ecology Interpretive Trail in Glen Helen Regional Park is approximately one half-mile in length and consists of a mix of natural surface/asphalt/boardwalk. This facility was built in the 1980's.
- Joshua Tree Connector Trail is a natural dirt trail that extends for approximately 1,300 feet between Monument Manor/Joshua Highlands to Joshua Tree National Park. This facility was built in 1998.
- Lake Gregory Fitness Trail is located in a two-mile loop around Lake Gregory Regional Park. This natural surface trail contains several exercise stations along its path and was created in the late 1980's.
- Handicap Nature Trail is located in Mojave Narrows Regional Park. This facility is a 1,350-foot paved interpretive trail created in 1973.
- Morongo Canyon Preserve contains approximately 7,000 feet of natural surface and boardwalk trails. While identified as a County trail, these facilities are currently maintained by the Federal Bureau of Land Management.
- Prado Trails consist of approximately five miles of natural surface trails located in Prado Regional Park.
- Mill Creek Levee Trail (Santa Ana River Trail) consists of approximately one-quarter mile of asphalt and concrete along an existing Flood Control dike. This trail was opened in April 1999.
- Meadows Trail/Zania Peak Trail is located in Yucipa Regional Park. It consists of over four miles of a natural surface facility that extends from the park to the peak. This facility has been constructed in phases from 1996 to 2001.

In addition to the county-designated regional trails, the Pacific Crest National Scenic Trail extends across the southwest portion of San Bernardino County on its path from the Canadian border to the Mexican border. Nearly 114 miles of it's approximately 2,620 mile length are located within the County. This entire facility is maintained by the United State Forest Service (USFS). Through its Regional Forester office located in the City of San Bernardino, the USFS maintains numerous other motorized and non-motorized forest roads and trail systems.

The trails officially listed under USFS jurisdiction are divided into two main categories: motorized and non-motorized trails. Trails that allow motorized use primarily consist of routes and roads that

can be accessed by non-highway licensed four-wheeled all-terrain vehicles (ATV). General hiking, equestrian and mountain biking usage are also allowed on motorized trails. Further discussion of these facilities is located in the Recreation Element of this document.

Non-motorized trails tend to be concentrated around recreation-destination points and developed recreation or wilderness areas. These trails are generally managed for shared-use and provide the opportunity for a variety of activities such as hiking, mountain biking and horseback riding. Some trails, such as the Pacific Crest Scenic Trail and other designated wilderness trails, are limited to hiking and equestrian use only.

Many local trails are considered non-system or unclassified trails. These are user-created trails that are located on National Forest System land and are not officially managed by USFS. Trails of this type are a growing occurrence in areas where urban development is expanding into or adjacent to National Forest land. While these trails are currently not maintained as a part of the National Forest System lands, public interest and usages has indicated that some of these unclassified trails are considered valuable to local residents and forest visitors.

Figure 2-13A through **Figure 2-13C** show the location and jurisdictional rights of the trails within the three regions located in San Bernardino County.

Figure 2-13A. Trail System – Valley Region

Figure 2-13B. Trail System – Mountain Region

Figure 2-13C. Trail System – Desert Region

2.3.1.7 INTELLIGENT TRANSPORTATION SYSTEMS (ITS) APPLICATIONS

Intelligent Transportation Systems (ITS) constitute a wide spectrum of techniques and applications that are currently being applied to existing roadways, highways and transit systems to increase their efficiency, safely and ability to relieve congestion. San Bernardino County is currently employing several types of Intelligent Transportation Systems (ITS) applications.

- 1-800-COMMUTE telephone line which provides travel information for highways, transit, rideshare and other commuting alternatives;
- closed-circuit television cameras to help in identifying and responding to accidents more quickly;
- electronic sensors placed in freeways that transmit vehicle counts to a traffic management center and can be used for real-time traffic conditions;
- traffic signal control systems that are synchronized through computer software specifically designed to better monitor and respond to local traffic congestion;
- changeable message signs that alert drivers to possible delays due to accident or congestion and allow for route diversion;
- traffic signals, or ramp meters, placed at freeway entrance ramps to provide a more consistent flow of entering traffic onto the freeway, resulting in less congestion and potential accidents due to crowded conditions; and
- smart call boxes that gather traffic count data and transmit this information to traffic management centers and the California Highway Patrol.

2.3.1.8 FUNDING SOURCES

San Bernardino Associated Governments (SANBAG), as the County Transportation Commission, has oversight responsibility for allocating or awarding funds to the most cost-efficient and beneficial improvements to the roadway system. This responsibility includes coordinating efforts being conducted by federal, state and local agencies into the most appropriate projects within the County.

Several funding programs, both federal and state, are available but require a dedicated advocacy to be identified and secured. SANBAG and the Riverside County Transportation Commission (RCTC) have developed a joint identity in the Inland Empire through the creation of a shared position of the Director of Intergovernmental and Legislative Affairs. This provides SANBAG and RCTC with a stronger constituency base to lobby elected state and federal officials in their efforts to secure transportation funds.

County Funding Source

In November 2004, San Bernardino County residents approved an extension of Measure I, originally initiated in 1989 with a life-span of 20 years, for an additional period of 30 years and a new termination date of March 31, 2040. The funds generated through a half-cent sales tax are statutorily dedicated for planning, design, construction, operation and maintenance of transportation

facilities in San Bernardino County. To aid in administering this tax across a region as large as San Bernardino County, a set of subareas containing specific portions of incorporated and unincorporated of the county was created. These subareas are identified as follows:

- San Bernardino Valley Subarea – This subarea includes the cities of Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Loma Linda, Montclair, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Upland and Yucipa and unincorporated areas in the east and west portions of the San Bernardino valley urbanized area.
- Mountain-Desert Area
  - North Desert Subarea – This subarea includes the City of Barstow and surrounding unincorporated areas.
  - Colorado River Subarea – This subarea includes the City of Needles and surrounding unincorporated areas of the East Desert.
  - Morongo Basin Subarea – This subarea includes the City of Twentynine Palms, Town of Yucca Valley and surrounding unincorporated areas.
  - Mountain Subarea – This subarea includes the City of Big Bear Lake and surrounding unincorporated areas of the San Bernardino Mountains.
  - Victor Valley Subarea – This subarea includes the cities of Adelanto, Hesperia, and Victorville; Town of Apple Valley and surrounding unincorporated areas including Wrightwood.

To ensure a fair and equitable distribution of proceeds generated under this tax, revenues generated by each subarea identified above will be expended on projects of direct benefit to that subarea, as outlined in each subareas Expenditure Plan, minus authorized administrative costs and required Board of Equalization fees.

Table 2-15 is a breakdown of the estimated countywide revenues and expenditures associated with Measure I. These values consist of the total amounts expected to occur over the duration of the new 30 year extension.

Table 2-15. Estimated Countywide Measure I Expenditure Distribution and Revenue

Estimated County wide Measure I Distribution	Amount
Cajon Pass Expenditure Plan	$ 170 Million
Total San Bernardino Valley Subarea Expenditure Plan	$ 4,520 million
Total Mountain-Desert Expenditure Plan	$ 1,250 million
Total Estimated Countywide Measure I Distribution	$ 5,940 million
Total Countywide Transportation Revenues	**Amount**
Estimated Countywide Measure I Revenue (after administrative costs)	$ 5,940 million
Estimated State and Federal Revenues	$ 1,106 million
Estimated Contributions from New Development	$ 1,146 million
Total Estimated Revenue for Transportation Projects	$ 8,192 million

Source: Sample Ballot and Information Pamphlet, County of San Bernardino, November 2004.

Discussions of each of the expenditure plans presented in **Table 2-15** are provided below.

Cajon Pass Expenditure Plan

The Cajon Pass Expenditure Plan is funded by a three percent portion of the revenue generated in both the San Bernardino Valley and Victor Valley subareas. These funds are to be used for the following projects: widen and improve the I-15 Freeway through the Cajon Pass; widen and improve the Devore Interchange of the I-15 and I-215 Freeways; and construct dedicated truck lane facilities through the Cajon Pass. These projects are expected to require $230 million to complete. The three percent share in revenue from the San Bernardino Valley and Victor Valley subareas is expected to generate $170 million with the remaining $60 million to be obtained from state and federal revenue sources.

San Bernardino Valley Subarea

Due to the size and complexity of the Valley Subarea, specific project categories were created. Expenditure plans were created for each category with a specific percentage of the total Valley Subarea revenue. The total San Bernardino Valley Subarea expenditure plan and those of the specific categories are shown in **Table 2-16**.

Table 2-16. San Bernardino Valley Subarea Expenditure Plan

Project Category	Measure I Percentage	Amount
Freeway Projects	29%	$ 1,311 million
Freeway Interchange Projects	11%	$ 497 million
Major Street Projects*	20%	$ 814 million
Local Street Projects	20%	$ 904 million
Metrolink/Rail Service	8%	$ 362 million
Express Bus/Bus Rapid Transit Service*	2%	$ 180 million
Senior and Disabled Transit Service	8%	$ 362 million
Traffic Management Systems	2%	$ 90 million
Total San Bernardino Valley Subarea Measure I Revenue	100%	$ 4,520 million

Percentage distribution adjusts to serve transportation needs. Amount shown is average over 30-year Measure.
Source: Sample Ballot and Information Pamphlet, County of San Bernardino, November 2004.

Projects included in the expenditure plan shown in **Table 2-16** are expected to include but not be limited to the follow:

- Widen segments of the I-10, I-15, I-215 and SR-210 freeways and construct carpool connectors.
- Improvements to interchanges along the I-10, I-15, SR-60, I-215 and SR-210 freeways.
- Improvements to major streets that connect communities, serve major destinations and provide freeway access.
- Distribute Measure I revenues to cities and County for local street repair and improvement.
- Contribute to projects conducted by Metrolink; provide revenue towards Redlands and Gold Line rail extension projects.
- Contribute to development and improvement of Express Bus and Bus Rapid Transit projects.
- Reduction in fares and enhanced services for elderly and disabled transit users.
- Traffic Management Implementation and Environmental Enhancement Program across the Valley.

Mountain-Desert Area

As stated above, the Mountain-Desert area was divided into five specific regions and expenditure plans were created for each subarea, as shown in **Table 2-17**.

Table 2-17. Mountain-Desert Expenditure Plan

Subarea	Amount
Victor Valley Subarea	$ 852 million
North Desert Subarea	$ 95 million
Mountains Subarea	$ 119 million
Morongo Basin Subarea	$ 125 million
Colorado River Subarea	$ 59 million
Total Mountain-Desert Expenditure Plan	$1,250 million

Source: Sample Ballot and Information Pamphlet, County of San Bernardino, November 2004.

Within each of the subareas located in the Mountain-Desert area, the Measure I revenues are broken down into three categories that are assigned a specific percentage of the total revenues for that subarea: Local Street Projects which are to receive 70 percent of total revenues; Major Local Highway Projects which are to receive 25 percent of the total revenues; and Senior and Disabled Transit Service which is to receive five percent of the total revenues.

Projects included in the expenditure plan shown in **Table 2-17** are expected to include but not be limited to the follow

- Improvements to major streets and state highways that are a part of the regional roadway network;
- Improvements to residential and collector streets; and
- Reduced fares and enhanced transit services for elderly and disabled residents in mountain and desert areas of the County.

State Funding Sources

Several State funding programs are available to local jurisdictions and are provided below:

- **State Transportation Improvement Program (STIP)** – This program is funded through the State Highway Account for projects that increase the capacity of the transportation system. Seventy-five percent of the funds generated under this program are allocated to Regional Transportation Planning Agencies such as SANBAG through the Regional Improvement Program (RIP). The remaining twenty-five percent to be utilized by Caltrans through the Interregional Improvement Program. The RIP program is to be used for projects in urbanized areas that need transportation improvements to facilities such as state highways or infrastructure such as intercity rail or grade separations. Each region receives a share of the funds and San Bernardino County's portion is approximately 4.7 percent of the total funds available from STIP statewide.
- **State Funding Reimbursement –** Under Senate Bill 45, SANBAG is authorized to identify and select projects for funding and present these to the California Transportation Commission for final approval and inclusion in the Federal Transportation Improvement Program. Once an agency has received approval to begin a project, funds will be paid on a reimbursement basis. A final audit is required to ensure grant or funding guidelines were followed.
- **Traffic Congestion Relief Program (TCRP)** – As stated in the *2004 Annual Report to the California Legislature*, the California Transportation Commission (CTC) has not made any new TCRP project allocations since December 2002. For both 2003-04 and 2004-05, the Governor and the Legislature have suspended Proposition 42 transfers and provided just enough TCRP funding to continue payments on allocations that had already been made, not enough to support new allocations.
- Assembly Bill 2928 and Senate Bill 1662, the Traffic Congestion Relief (TCR) Act, were signed into law in July 2000. This legislation originally authorized a $4.9 billion commitment over the years 2000-01 to 2005-06 to fund 141 projects throughout the state. The time period over which this was to occur has since been changed from 2003-04 to 2007-08. The projects were intended to relieve congestion, provide safe and efficient movement of goods and provide intermodal connectivity. TRCP was also provided funding to a high-speed rail design study and local deferred maintenance programs. SCAG received $2.3 billion for 44 projects within the region and San Bernardino County received $169.2 million for eight projects. **Table 2-18** provides the current funding information for these eight projects:

Table 2-18. Traffic Congestion Relief Program Funds
San Bernardino County Projects($1,000)

Project Description	Eligible	Approved	Allocated	Expended
Metrolink; track & signal improvements, San Bernardino Line	15,000	15,000	15,000	14,215
Route 215; HOV lanes through downtown San Bernardino, Rte 10 to Rte 30	25,000	25,000	0	0
Route 10; widen freeway through Redlands, Rte 30 to Ford St.	10,000	10,000	4,296	3,825
Route 10; Live Oak Canyon Interchange; Yucipa	11,000	11,000	2,868	2,576
Route 15; southbound truck climbing lane at 2 locations	10,000	860	860	859
Route 62; traffic and pedestrian safety & utility undergrounding project, Yucca Valley	3,200	3,200	150	150
Alameda Corridor East; grade separation projects conducted by Montclair, Ontario and SANBAG	95,000	53,560	13,850	4,374
Total	169,200	118,620	37,024	25,999

Source: California Transportation Commission, *2004 Annual Report to the California Legislature*, December 2004.

- The State offers several other funding programs for more specific improvements such as highway bridge replacement or rehabilitation, bicycle transportation planning and environmental enhancement or mitigation projects.

Federal Funding Sources

Federal funding programs are also available to local jurisdictions and are similar to those offered at the State level.

- **Federal Transportation Improvement Program (FTIP)** – This document provides information on all federally funded and regionally significant projects and is used as a reference point for review and approval by various state and federal agencies for funding and other items. To be eligible for funds from this program, a project must be included in the transportation improvement program for each level of government from the local level through the regional and state levels to the federal level.
- **Federal Funding Reimbursement** – Under this program, local agencies may receive approval to "obligate" funds from a federal agency. Obligation is a method to ensure funds will be available for project costs. To receive approval to obligate funds, a project must be included in the Federal Transportation Improvement Program. If funds are to be received from the Federal Highway Administration, an approval to obligate funds is passed on to Caltrans and the local agency must follow Caltrans processes to receive the funds. Projects conducted under Federal Transit Agency (FTA) funds must transmit information directly to FTA to receive authorization. Federal funding is typically transferred to an agency on a reimbursement basis and any local match that is required must be spent to receive reimbursement. The lead agency is required to conduct an audit at project completion to ensure funds were spent according to grant or funding program guidelines.

Transportation Equity Act (TEA) – 21 – This legislation was initially signed into law in June 1998 and was set to sunset on September 30, 2003 when a new Transportation Reauthorization Act was to be signed into law for the start of the 2003/2004 federal fiscal year. The executive branch, Senate, and House have competing versions of a Transportation Reauthorization Act funded at different levels. Until a new act is signed into law, Congress has provided extensions of TEA-21, generally on a monthly basis. The new law is anticipated to authorize approximately $290 billion over six years for transportation improvement nationwide. This new amount is well above the $217 billion in funds authorized for transportation improvements nationwide under TEA-21, with nearly $22 billion for projects in California. Funding allocations may vary annually because these are established on a yearly basis through Congressional appropriations. TEA funds that are provided to California are distributed through Caltrans to the counties with amounts based on population. SANBAG is the agency responsible for supervising the allocation of these funds to specific projects within the county. Caltrans is responsible for the obligation and reimbursement of these funds to projects approved by SANBAG.

2.3.2 INFRASTRUCTURE

Any increase in population strains existing infrastructure and facilities; without proper maintenance and regular investments through improvements and upkeep, the needs of existing and future residents and visitors cannot be adequately addressed. An understanding of infrastructure and facilities is also essential to an analysis of potential growth and development in San Bernardino County. This section provides a summary of the infrastructure facilities and public services in the unincorporated areas of San Bernardino County.

In the County, provision and maintenance of infrastructure facilities and public services is coordinated through Special Districts and County Service Areas (CSAs). Special Districts and CSAs are separate legal entities authorized by California laws and formed by the County Board of Supervisors to provide municipal type services and capital improvements to unincorporated County areas. They are formed and tailored to meet the specific needs of an area so that the property owners only pay for the services they want. They can provide one or all of the following services depending on community needs and financial feasibility:

1. Extended police protection
2. Structural fire protection
3. Local park, recreation, or parkway
4. Extended library facilities and services
5. Television translator station facilities
6. Low power television services
7. Miscellaneous extended services:
    a. water services
    b. sewer services

c. pest or rodent control
d. street & highway sweeping
e. street & highway lighting
f. refuse/garbage collection
g. ambulance service
h. area planning
i. soil conservation & drainage control
j. animal control
k. services provided by a Municipal Advisory Council (MAC)
l. transportation services
m. geologic hazard abatement
n. road maintenance
o. open space and habitat conservation[2]

Table 2-19 provides a list of present CSAs and special districts in San Bernardino County describing their governance, powers and the communities served (BG denotes "board governed" and SG denotes "self governed").

[2] www.specialdistricts.org/faq.shtml

Table 2-19. Summary of Special Districts and County Service Areas (CSA), San Bernardino County

	District Name	BG/SG	Powers	Communities Served	Planning Area
Air Quality Management District					
1	Mojave Desert	SG	Air Quality	North Desert	Desert
Airports District					
1	Big Bear Airport District	ISG	Airport Operation, Maintenance		Mountain
2	Yucca Valley Airport District	ISG	Airport Operation, Maintenance		Desert
Cemetery District					
1	Barstow Cemetery District	ISG	Cemetery		Desert
2	Twentynine Palms Public Cemetery District	ISG	Cemetery		Desert
Community Service Districts					
1	Baker Community Service District	ISG	Fire Protection, Parks and Recreation, Sanitation, Health Services, Television Translator, Streetlights, Solid Waste, Water, Sewer		Desert
2	Barstow Heights Community Service District	ISG	Parks and Recreation, Water		Desert
3	Big Bear City Community Service District	ISG	Fire Protection, Parks and Recreation, Streetlights, Rubbish, Mosquito Abatement, Library, Transportation, Sanitation, Water		Mountain
4	Big River Community Service District	ISG	Parks and Recreation, Police, Water		Desert
5	Daggett Community Service District	ISG	Fire Protection, Parks and Recreation, Streetlights, , Water		Desert
6	Lake Arrowhead Community Service District	ISG	Water, Sewer		Mountain
7	Morongo Valley Community Service District	ISG	Fire Protection, Parks and Recreation, Streetlights, Library, Weather, Streets, Water		Desert
8	Newberry Springs Community Service District	ISG	Fire Protection, Parks and Recreation, Streetlights, Water, Sewer		Desert
9	Yermo Community Service District	ISG	Fire Protection, Parks and Recreation, Streetlights, Water		Desert
County Service Areas					
1	County Service Area SL-1	BG	Streetlights	Valley Area	Valley/Mountains
2	County Service Area 9	BG	Streetlights, Road Maintenance, Parks and Recreation	Phelan	Desert

	District Name	BG/SG	Powers	Communities Served	Planning Area
3	County Service Area 17	BG	Streetlights	Apple Valley	Desert
4	County Service Area 18	BG	Road Maintenance, Water, Parks and Recreation	Cedarpines Park	Mountain
5	County Service Area 20	BG	Streetlights, Road, Parks and Recreation, Fire Protection	Joshua Tree	Desert
6	County Service Area 29	BG	Cemetery, Television Translation, Fire Protection, Parks and Recreation, Streetlights, Water, Sewer, Ambulance	Lucerne Valley	Desert
7	County Service Area 30	BG	Streetlights, Planning, Fire Protection	Red Mountain	Desert
8	County Service Area 38	BG	Fire		
9	County Service Area 38-D	BG	Fire	Victorville	Desert
10	County Service Area 38-H	BG	Fire	Colton	Valley
11	County Service Area 38-J	BG	Fire	Big River	Desert
12	County Service Area 38-K	BG	Fire	Spring Valley Lake	Desert
13	County Service Area 38-L	BG	Rescue Services (Paramedics)	Highland	Valley
14	County Service Area 38-M	BG	Rescue Services (Paramedics)	Yucaipa	Valley
15	County Service Area 38-N	BG	Fire	El-Mirage	Desert
16	County Service Area 40	BG	Television Translation	Elephant Mountain, Barstow	Mountain
17	County Service Area 42	BG	Water, Sewer, Refuse, Parks and Recreation, Streetlights	Oro Grande	Desert
18	County Service Area 53	BG	Streetlights, Fire Protection, Sewer, Water, Road	Big Bear	Mountain
19	County Service Area 53-A	BG	Streetlights	Big Bear	Mountain
20	County Service Area 53-B	BG	Fire, Sewer	Fawnskin	Mountain
21	County Service Area 53-C	BG	Water Feasibility Study	Fawnskin	Mountain
22	County Service Area 54	BG	Streetlights	Crest Forest	Mountain
23	County Service Area 56	BG	Streetlights, Parks and Recreation, Sewer, Animal Control, Fire Protection, Ambulance	Wrightwood	Mountain
24	County Service Area 56 F-1	BG	Streetlights, Parks and Recreation, Sewer, Animal Control, Fire Protection, Ambulance	Pinon Hills	Desert
25	County Service Area 59	BG	Road Maintenance	Dear Lodge Park	Mountain
26	County Service Area 60	BG	Airport Operation and Maintenance		Desert

	District Name	BG/SG	Powers	Communities Served	Planning Area
27	County Service Area 63	BG	Road Maintenance, Sanitation, Streetlights, Park and Recreation, Disaster Preparedness	Yucaipa/Oak Glen/Crafton	Valley and Desert
28	County Service Area 64	BG	Water, Sewer, Road	Spring Valley Lake	Desert
29	County Service Area 68	BG	Road	Valley of the Moon	
30	County Service Area 69	BG	Road	Lake Arrowhead	Mountain
31	County Service Area 70	BG	Weed Abatement, Animal and Pest Control, Sewer, Water, Road Maintenance, Parks and Recreation, Dam, Fire Protection, Streetlights, Police, Television Translation, Extension of Utility Lines, Flood Control, Ambulance, Streetsweeping	Countywide/Unincorporated	Countywide/ Unincorporated
32	County Service Area 70-B	BG	Sewer, Streetlights	Helendale/Silver Lakes	Desert
33	County Service Area 70-C	BG	Water	Helendale/Silver Lakes	Desert
34	County Service Area 70-CR	BG	Water, Park and Recreation, Sanitation, Drainage, Streetlights, Road Improvements	Crafton Hills	Valley
35	County Service Area 70 D-1	BG	Dam	Lake Arrowhead Dam	Mountain
36	County Service Area 70 E-1 (Dissolved)	BG	Utility Electrical	North Apple Valley	Desert
37	County Service Area 70 EV-1	BG	Water, Sewer, Streetlighting, Park and Recreation, Maintenance, Drainage Control	Citrus Plaza	Valley
38	County Service Area 70-F	BG	Water	Morongo Valley	Desert
39	County Service Area 70 FP-1	BG	Fire Protection	Windy Acres	
40	County Service Area 70-G	BG	Road, Water	Oak Springs	Desert
41	County Service Area 70-HI	BG	Road, Flood Control, Fire, Solid Waste, Sewer, Water	Havasu Lake	Desert
42	County Service Area 70-J	BG	Water, Sewer	Oak Hills	Desert
43	County Service Area 70-L and L-1	BG	Water	Pinon Hills/Phelan	Desert
44	County Service Area 70-M	BG	Fire, Road, Park and Recreation, Police Protection	Wonder Valley	Desert
44	County Service Area 70 P-2 (Dissolved)	BG	Park and Recreation	Muscoy	Valley
45	County Service Area 70 P-4	BG	Park and Recreation	Phelan	Desert
46	County Service Area 70 P-6	BG	Park and Recreation	El Mirage	Desert

	District Name	BG/SG	Powers	Communities Served	Planning Area
47	County Service Area 70 P-7	BG	Park and Recreation	Mentone	Valley
48	County Service Area 70 P-8	BG	Park and Recreation	Fontana	Valley
49	County Service Area 70 P-9	BG	Park and Streetlighting	Fontana	Valley
50	County Service Area 70 P-10	BG	Park Maintenance and Streetlighting	Mentone	Valley
51	County Service Area 70 P-11	BG	Park Maintenance and Streetlighting	Bloomington	Valley
52	County Service Area 70 PM-1	BG	Paramedics	Lake Arrowhead	Mountain
53	County Service Area 70 R-2	BG	Road	Twin Peaks	Mountain
54	County Service Area 70 R-3	BG	Road	Erwin Lake	Mountain
55	County Service Area 70 R-4	BG	Road	Cedar Glen	Mountain
56	County Service Area 70 R-5	BG	Road	Sugarloaf	Mountain
57	County Service Area 70 R-7	BG	Road	Lake Arrowhead Tract 10608	Mountain
58	County Service Area 70 R-8	BG	Road	Riverside Terrace	
59	County Service Area 70 R-9	BG	Road	Rim Forest	Mountain
60	County Service Area 70 R-11	BG	Road	Running Springs	Mountain
61	County Service Area 70 R-12	BG	Road	Baldwin Lake	Mountain
62	County Service Area 70 R-13	BG	Road	North Shore/Lake Arrowhead	Mountain
63	County Service Area 70 R-15	BG	Road	Landers	Desert
64	County Service Area 70 R-16	BG	Road	Running Springs	Mountain
65	County Service Area 70 R-19	BG	Road	Copper Mountain	
66	County Service Area 70 R-20	BG	Road	Flamingo Heights	Desert
67	County Service Area 70 R-21	BG	Road	Mountain View, Big Bear	Mountain
68	County Service Area 70 R-22	BG	Road	Twin Peaks	Mountain
69	County Service Area 70 R-23	BG	Road	Mile High Park, Crestline	Mountain
70	County Service Area 70 R-25	BG	Road	Lucerne Valley	Desert
71	County Service Area 70 R-26	BG	Road	Yucca Mesa	Desert
72	County Service Area 70 R-28	BG	Road	Joshua Tree	Desert
73	County Service Area 70 R-29	BG	Road	Yucca Mesa	Desert
74	County Service Area 70 R-30	BG	Road	Verdemont	Valley
75	County Service Area 70 R-31	BG	Road	Lytle Creek	Mountain
76	County Service Area 70 R-32	BG	Road	Buckwheat Road, Phelan	Desert
77	County Service Area 70 R-33	BG	Road	Fairway Blvd., Big Bear City	Mountain
78	County Service Area 70 S-3	BG	Sewer	Lytle Creek	Mountain
79	County Service Area 70 S-7	BG	Sewer	Lenwood	Desert
80	County Service Area 70 SP-2	BG	Sewer	High Country/South Hesperia	Desert
81	County Service Area 70 SW-1	BG	Water, Sewer	East Baldwin Lake	Mountain

	District Name	BG/SG	Powers	Communities Served	Planning Area
82	County Service Area 70 TV-2	BG	Television	Morongo Valley	Desert
83	County Service Area 70 TV-4	BG	Television	Wonder Valley	Desert
84	County Service Area 70 TV-5	BG	Television	Mesa	Desert
85	County Service Area 70-W	BG	Fire, Park, and Recreation	Hinkley	Desert
86	County Service Area 70 W-1	BG	Water	Goat Mountain	Desert
87	County Service Area 70 W-3	BG	Water	Hacienda	
88	County Service Area 70 W-4	BG	Water	Pioneertown	Desert
89	County Service Area 70 W-5	BG	Water	Shoshonee	Desert
90	County Service Area 70 W-7	BG	Water	Little Morongo Heights	Desert
91	County Service Area 70 W-10	BG	Water	West Morongo Valley	Desert
92	County Service Area 73	BG	Streetlights, Parks and Recreation	Arrowbear Park	Mountain
93	County Service Area 77 (Dissolved)	BG	Road Maintenance and Improvement	Mariana Ranchos	
94	County Service Area 79	BG	Fire, Sewer, Water, Roads	Green Valley Lake	Mountain
95	County Service Area 79 R-1	BG	Road	Green Valley Lake "Meadow"	Mountain
96	County Service Area 82	BG	Cemetery, Park and Recreation, Fire, Ambulance, Animal Control, Sewer, Streetlights	Searles Valley	Desert
97	County Service Area 82 SV-1	BG	Cemetery, Parks and Recreation, Fire, Ambulance, Animal Control, Sewer, Streetlights (CSA SV-2 consolidated with CSA 82 SV-1)	Searles Valley	Desert
98	County Service Area 82 SV-3	BG	Sewer	Trona	Desert
99	County Service Area 82 SV-4	BG	Sanitation	Pioneer Point	Desert
100	County Service Area 110	BG	Area Planning, Water, Sewer, Roads, Streetlights, Parks and Recreation, Fire, Soil Conservation and Drainage	East Valley Corridor	Valley
Fire Protection Districts					
1	Apple Valley Fire Protection District	ISG	Structural, Watershed, Rescue, Ambulance, Paramedic, Suppression, Prevention		Mountain
2	Barstow Fire Protection District	ISG	Suppression, Prevention, Structural, Watershed, First Aid, Rescue, Paramedic, Ambulance		Desert
3	Big Bear Lake Fire Protection District	SG	Structural, Watershed, Suppression, Prevention, Rescue, First Aid		Mountain

	District Name	BG/SG	Powers	Communities Served	Planning Area
4	Central Valley Fire Protection District	BG	Suppression, Prevention, Weed Abatement, Emergency, Rescue		Valley
5	Chino Valley Independent Fire District	ISG	Protection, Structural, Watershed, Inspection, Paramedic		Valley
6	Crest Forest Fire Protection District	ISG	Structural, Watershed, Suppression, Prevention, Rescue, Communications, Supplemental Ambulance Manpower		Valley
7	Forest Falls Fire Protection District	BG	Structural, Watershed, Inspection, Suppression, First Aid, Rescue		Valley
8	Hesperia Fire Protection District	SG	Structural, Watershed, Suppression, Prevention, Ambulance, Paramedic		Desert
9	Lake Arrowhead Fire Protection District	BG	Protection, Ambulance		Mountain
10	Monte Vista Fire Protection District	BG	Protection, Prevention		
11	Rancho Cucamonga Fire Protection District	SG	Structural, Watershed, Suppression, Prevention, Protection, First Aid, Rescue		Valley
12	San Bernardino County Consolidated Fire District	BG			
13	Victorville Fire Protection District	SG	Structural, Watershed, Suppression, Prevention, First Aid, Rescue		Desert
14	Yucca Valley Fire Protection District	BG	Structural, Watershed, Rescue, Ambulance, Paramedic		Desert
Hospital Districts					
1	Bear Valley Community Hospital District	ISG	Acute and Continual Medical Care, 24-Hour Emergency Room Service, Hospital Administration		Mountain
2	Hi-Desert Memorial Hospital District	ISG	Acute, Continual, and Emergency Medical Care, Hospital Administration		Desert
3	Needles-Desert (Dissolved)	SG			
4	San Bernardino Mountain Community Hospital District	ISG	37-Bed Acute Care General Hospital		Valley
Mosquito Abatement Districts					
1	West Valley Vector Control	ISG	Extermination of mosquitoes, flies, or other insects, rats of other rodents		

	District Name	BG/SG	Powers	Communities Served	Planning Area
Municipal Water Districts					
1	Big Bear	ISG	Water (Wholesaler), Sewer, Fire Protection, Parks and Recreation		Mountain
2	Chino Basin Municipal Water District	ISG	Water (Wholesaler), Sewer (Wastewater Treatment), Total Basin Management		Valley
3	San Bernardino Valley Municipal Water District	ISG	Water, Sewer, Power, Parks and Recreation, Electrical Production, Electrical Transmission		Valley
Parks and Recreation Districts					
1	Barstow (Dissolved)	ISG	Development, Construction, Operation, Recreational Opportunities		Desert
2	Big Bear Valley	BG	Operation, Maintenance		Mountain
3	Bloomington	BG	Development, Operation, Recreation		
4	Hesperia	ISG	Local Park Development, Operation, Recreation, Streetlighting		Desert
5	Park Dam	ISG	Parks and Recreation, Streetlighting		
6	Rim of the World	ISG	Parks and Recreation		Mountain
7	Victorville	SG	Development, Operation, Recreation		Desert
Resource Conservation Districts					
1	East Valley	ISG	Soil Conservation		Desert
2	Inland Empire West	ISG	Soil Conservation		Valley
3	Mojave Desert	ISG	Soil Conservation		Desert
Sanitation Districts					
1	Crestline Sanitation District	BG	Sewage Collection, Transportation, Treatment, Disinfection, Reclamation, Disposal		Mountain
2	Victorville Sanitation District	SG	Sewage Collection, Disposal, Construction, Maintenance of Lines		Desert
Water Conservation Districts					
1	Chino Basin	ISG	Water Conservation		Valley
2	San Bernardino Valley	ISG	Water Conservation		Valley

	District Name	BG/SG	Powers	Communities Served	Planning Area
Water Districts					
1	Apple Valley Foothill Water District	ISG	Retail, Agricultural, Domestic Water and Replenishment		Mountain
2	Apple Valley Heights Water District	ISG	Retail and Domestic Water		Mountain
3	Arrowbear Park County Water District	ISG	Retail and Domestic Water, Sewer, Fire Protection, Parks and Recreation, Sanitation		Mountain
4	Baldy Mesa County Water District	ISG	Water, Sewer		
6	Bighorn-Desert View Water Agency	SG	Water		Desert
6	Chino Basin Water Conservation District	SG	Conservation		Valley
7	Crestline-Lake Arrowhead Water Agency	SG	Water (Wholesaler)		Mountain
8	Crestline Village Water District	ISG	Water		Mountain
9	Cucamonga Valley Water District	ISG	Water, Sewer		Valley
10	East Valley Water District	ISG	Water, Sewer, Parks and Recreation		Desert
11	Hesperia Water District	SG	Water, Sanitation, Sewer, Parks and Recreation		Desert
12	Hi-Desert Water District	ISG	Water, Sewer, Parks and Recreation		Desert
13	Joshua Basin Water District	ISG	Water		Desert
14	Juniper-Riviera Water District	ISG	Water		Desert
15	Mariana Ranchos Water District	ISG	Water		Desert
16	Mojave Water Agency	SG	Water, Sewer		Desert
17	Monte Vista Water District	ISG	Water, Parks and Recreation		Desert
18	Odessa Water District	SG	Acquisition, wholesale, retail	Barstow	Desert
19	Running Springs Water District	ISG	Water, Sewer, Fire Protection, Parks and Recreation, Sanitation		Mountain
230	San Bernardino Valley Water Conservation District	SG	Conservation		Valley
21	Thunderbird Water District	ISG	Water		
22	Twentynine Palms Water District	ISG	Water, Sewer, Fire Protection		Desert
23	Victor Valley Water District	ISG	Water		Desert
24	West Valley Water District	ISG	Water, Sewer		Valley
25	Yucaipa Valley Water District	ISG	Water, Sewer		Desert

*BG – Board Governed; SG – Self Governed; Independent Special Districts

Source: San Bernardino County Special Districts Department

2.3.2.1 WATER

Introduction

Ensuring reliable water resources to meet essential water demands and maintaining water quality are important goals in San Bernardino County (the County). Furthermore, recently enacted laws, SB 221 (Kuehl) and SB 610 (Costa), require new development to meet certain criteria and provide "substantial evidence of available water supplies in the event of a drought". The purpose of this element is to provide information on available and planned future water supplies in order to assist the County with making land use decisions on new development and ensuring a safe and reliable water supply.

As part of the effort to gather and summarize water and wastewater issues, data was gathered from state, county, regional and local levels. Department of Water Resources documents were reviewed. At a regional level, information was obtained from the Metropolitan Water District, the Southern California Association of Governments, the Santa Ana Watershed Project Authority, the Western – San Bernardino Watermaster, and the Chino Basin Watermaster. The San Bernardino County Special Districts Department provided Consumer Confidence Reports for the nine separate Community Service Areas. Many water agencies also provided information for this report, including but not limited to the Inland Empire Utilities Agency, the Mojave Water Agency, the Southern California Water Company, and the Lake Arrowhead Community Services District. Many of the approximately 400 local, small water purveyors were also contacted. There are three Regional Water Quality Control Boards that provide regulatory oversight to the many water basins, lakes and streams in the County. Their current and proposed regulations were reviewed and summarized for application to the General Plan.

Existing Conditions

The County's domestic water sources are supplied through both local and imported water. The County's geographic challenges, which have impacts on elements throughout the General Plan, also impact water sourcing and distribution. For the entire County it is estimated that, on average, 85 percent of the domestic water is supplied by local sources with the balance of 15 percent as imported purchased water. There are supply percentage differences depending on geographic area.

Imported water is primarily purchased from the Metropolitan Water District of Southern California (MWD) and the State Water Project (the California Aqueduct) as a supplemental source to local water supplies. While MWD distributes their water through local pipelines, there are also three State Water Project contractors and one sub-contractor in the County. They are:

- Crestline-Lake Arrowhead Water Agency (CLAWA);
- Mojave Water Agency (MWA);
- San Bernardino Valley Municipal Water District (SBVMWD);
- Inland Empire Utilities Agency, (IEUA), which is a member agency or subcontractor of MWD.

These four agencies are the largest of the water supplier/distribution agencies. Table 2-20 shows the sources of these wholesalers. There are also approximately 400 small source providers including County Service Agencies and Districts, private mutual water companies and single use water sources. The information from these smaller agencies and districts is especially significant for the community plans. Table 2-21 lists the major service purveyors by cities and community plan areas. It should be noted however, that this list is not comprehensive in that there are many small private water suppliers through out the County that are not assessed in this report.

Continued analysis and summarization is ongoing concerning consumptive water use and existing water supplies. The factors that are used to compare use and supply are not consistent throughout the County. Each of the three regions --- valley, mountains and desert --- has varying uses and supplies that are specific to that portion of the County.

Table 2-20. Primary Water Wholesalers in San Bernardino County

Agency	Source of Water	Percentage of Total Water Supply
Metropolitan Water District (MWD)	• Colorado River • State Water Project	• 50% • 50%
Crestline – Lake Arrowhead Water Agency (CLAWA)	• State Water Project	• 100%
San Bernardino Valley Municipal Water District (SBVMWD)	• State Water Project • Surface water • Local Wells	• 19% • 23% • 58%
Inland Empire Utility Agency (IEAU)	• Local Wells • MWD • Recycled / Treated Water	• 65% • 30% • 5%

Table 2-21. San Bernardino County Water Providers

City/Community	Water District
Adelanto	City of Adelanto
Apple Valley	Apple Valley Ranchos Water District Juniper Riveria Water District Southern California Water Company Apple Valley Foothill County Water District Apple Valley Heights County Water District Mariana Ranchos County Water District

	Thunderbird County Water District
Arrowbear	Arrowbear Park County Water District
Baldy Mesa	Baldy Mesa Water District
Baker	Community Services District
Barstow	Southern California Water Company
City of Big Bear Lake *DWP services - Fawnskin, Big Bear City, Sugarloaf, Erwin Lake	City of Big Bear Lake DWP* Big Bear City Community Services District
City of Big Bear Valley	Big Bear City Community Services District
Big River	West Valley Water District
Bloomington	Fontana Water Company Marigold Mutual Water Company West Valley Water District
Cedar Glen	Cedar Pines Park Mutual Water Company
Cedar Pines	City of Chino Water Department
Chino	Chino Basin Water Conservation District City Utilities Department
Chino Hills	City of Chino Hills
Colton	Terrace Water Company City of Colton Water
Crestline	Crestline Village Water District Valley of Enchancement Mutual Water District Crestline – Lake Arrowhead Water District Cedar Pines Park Mutual Water Company
Daggett	Daggett Comm. Service District Water Service
Fontana	Fontana Water Company Crawford Canyon Water
Forest Falls	Fallsvale Service Company
Grand Terrace	Riverside Highland Water Company
Green Valley	Green Valley Mutual Water Company
Hesperia	Hesperia Water District
Highland	East Valley Water District Southern California Water
Homested Valley	Hi- Desert Water District Bighorn-Desert View Water Agency
Joshua Tree	Joshua Basin Water District Joshua Tree Lake RV and Campground

Landers	Bighorn Desert View Water Agency
Lake Arrowhead	Lake Arrowhead Community Services District Arrowhead Villas Mutual Water Company Alpine Water Users Association SkyForest Municipal Water District Strawberry Lodge Mutual Water City of Big Bear – Rim Forest
Loma Linda	City of Loma Linda
Lucerne Valley	Community Service Area 29 Stewart Water Company, Inc.
Lytle Creek	Lytle Creek Water Company West Valley Water District
Montclair	Monte Vista Water District
Morongo Valley	Morongo Valley Community Service District CSA 70 W-3, 70-4, 70F
Needles	City of Needles
Muscoy	Muscoy Mutual Water Company
Newberry Springs	Newberry Springs CSD
Ontario	City of Ontario Power and Water
Oak Glen	Oak Glen Domestic Water Company
Oak Hills	County Service Area 70L
Phelan	Sheep Creek Water County Service Area 70L
Pinon Hills	County Service Area 70L
Rancho Cucamonga	Cucamonga County Water District
Redlands	Redlands Municipal Water
Rialto	City of Rialto West San Bernardino County Water District
Running Springs	Running Springs Water District Rim Forest Water
San Bernardino	San Bernardino City Municipal Water San Bernardino Valley Conservation District
Trona	Searles Domestic Water Company Indian Wells Valley Conservation Water District
Twentynine Palms	Twentynine Palms Water District
Twin Peaks	Alpine Water Users Association Strawberry Lodge Mutual Water Company
Upland	City Water Department

Victorville	Victor Valley County Water District Victorville Water District
Yermo	Yermo Water Company
Yucaipa	Yucaipa Valley Water District Western Heights Water Company South Mesa Water Company
Other Purveyors	
Crestline Lake Arrowhead Water Agency	Water Wholesaler (limited retail sale)
Inland Empire Utilities District	Water Wholesaler
Metropolitan Water District of Southern California	Water Wholesaler
San Bernardino Valley Municipal Water District	Water Wholesaler

According to MWD, total water consumption by customers in the County increased approximately 15 percent from 1990 to 2000; during the same period, the County's resident population increased from 1,418,380 to 1,709,434 or 20.5%. For the same period, agriculture water use increased by approximately 28 percent (switching from dry land farming to specialty irrigated crops). According to MWD, municipal and industrial use increased by 13 percent. MWD's service area is primarily the urban portion of the County.

There are also three other types of water supplier/distributors in the County: the County Service Areas (CSAs) and Special Districts and the Southern California Water Company (SCWC). There are eight SCWC systems within San Bernardino County focusing on the mountain and desert regions.

County Service Areas and Special Districts

County Service Areas (CSAs) Improvement Zones and Special Districts are separate legal entities authorized by California laws and formed by the County Board of Supervisors to fund the County's provision of services, capital improvements and financial flexibility. They are formed and tailored to meet the specific needs of an area so that the property owners only pay for the services they want. There are 22 CSAs and 27 Districts specifically organized to provide water supply services. These Districts provide tailored municipal-type services depending on community needs and financial feasibility. Monitoring results for 2003 indicate that all of the CSAs servicing the unincorporated communities of the County were in compliance with State primary drinking water standards.[3] Table 2-19 lists the Districts and CSAs that provide water service to some of the unincorporated areas within the County.

[3] This information is from the 2003 Water Quality annual reports. (San Bernardino County Special Districts Web Page)

Imported Water Supply

As both a requirement of state legislation and legal proceedings, most of the larger water supply agencies have reliability analysis and reports. As previously stated, San Bernardino County imports approximately 15 percent of its water supply; the bulk comes from groundwater supplies. For specific areas, the percentage of imported water may be minimal, however for other areas, imported water is the primary source.

The reliability of these sources is a key component to the overall water supply and future planning. Colorado River and State Water Project are the two primary sources of water for most of California.

Colorado River Aqueduct

On January 16, 2001, the Secretary of the Interior signed a Record of Decision to implement the Colorado River Interim Surplus Guidelines (ISG). Adoption of the ISG recognizes California's Colorado River Water Use Plan and its commitment to reduce its draw of Colorado River water. The Bureau of Reclamation uses the ISG to determine the availability of surplus water to MWD through 2016. Under a seven state agreement, California has 15 years to reduce its draw on the river from about 5.2 million acre-feet to its basic apportionment of 4.4 million acre-feet a year in the absence of surplus water. During the 15-year ramp-down period, California would continue to receive surplus water from the river; the annual amount depends on whether there is a flood control release, or a full or partial domestic surplus condition. The framework for meeting required conservation and use benchmarks was agreed to in mid-October 2002.[4]

The State Water Project

The State Water Project (SWP) is currently in the process of a two-year statewide watershed analysis and review. Most of the information is complete however there was not as much detail as is available for MWD. The SWP designates "regions" by watershed. For San Bernardino County, both the Colorado River and South Lahontan regions were reviewed for this General Plan.

Five water agencies within the South Lahontan region have contracts with the State Water Project for imported water quantities totaling approximately 250 thousand acre-feet (taf) annually. The East Branch of the SWP California Aqueduct brings imported water in the Region. Some of the SWP water is used to recharge groundwater in the Mojave River Valley. Also as part of the SWP, eight reservoirs, which are part of the greater Los Angeles Aqueduct system with a combined storage capacity totaling approximately 323 taf, are located throughout Southern California. Six of the eight reservoirs are located in the South Lahontan Region

According to the SWP, groundwater provides nearly half of the annual water supply in the South Lahontan region. Groundwater is used conjunctively with surface water in the more heavily pumped basins. Seventy-six groundwater basins underlie about 55 percent of the hydrologic region and groundwater storage capacity is estimated for 49 of these basins (DWR 2003). The estimated storage capacity is about 232 million acre-feet. Most of the groundwater production is concentrated, along with the population, in basins within the southern and western parts of this hydrologic region.

[4] Metropolitan Water District of Southern California website (http://www.mwdh2o.com/)

Because much of this hydrologic region is public land with low population density, there has been little groundwater use and little is known about the groundwater in many of the basins.[5]

State Water Project staff has been actively coordinating the East Branch Extension, Phase 1, which is currently under construction. The project will link the State Water Project to the eastern part of San Bernardino Valley Water District and San Gorgonio Pass Water Agency, bringing State Project Water to the San Gorgonio Pass Agency for the first time in fulfillment of the contract signed in 1962. The State also is planning for Phase 2 of the East Branch Extension. Phase 2 will expand delivery capability to meet contracted demand by Riverside County and San Bernardino County contractors and possibly include the Metropolitan Water District of Southern California.[6]

Water Supply by Region

Valley Region

The Valley Region is serviced by 35 water purveyors (suppliers and distribution) and approximately twenty small single sources (see Figure 2-14A). There are three primary water suppliers for this Region including San Bernardino Valley Municipal Water District, Inland Empire Utilities Agency and the Metropolitan Water District.

San Bernardino Valley Municipal Water District (SBVMWD)

The SBVMWD covers about 325 square miles spanning the eastern two-thirds of the San Bernardino Valley, the Crafton Hills, and a portion of the Yucaipa Valley. Incorporated cities and communities include San Bernardino, Colton, Loma Linda, Redlands, Rialto, Highland, Grand Terrace and Yucaipa. The area also includes the unincorporated communities of Mentone, Crafton, East Highland, Bloomington, Muscoy, and Devore. The SBVMWD sources are divided between imported, surface and reclaimed water supplies. Groundwater is the principal source of supply in the SBVMWD service area, accounting for 58 percent of the total water demands. Surface water is the second largest supply source to the SBVMWD, accounting for about 23 percent of the total demand. The district imports water through the California State Water Project (SWP) for direct delivery and groundwater recharge and by coordinating the delivery of water resources to retail agencies throughout the area. The District does not deliver water directly to retail water customers.

District responsibilities include:

- Maintaining the groundwater level in certain wells in the Colton-Rialto basin at an average of 822 feet above sea level;
- Maintain a flow equivalent to approximately 15,250 acre-feet per year at Riverside Narrows on the Santa Ana River; and
- Maintaining groundwater supplies in three additional groundwater basins: Bunker Hill, Yucaipa, and San Timoteo.

[5] State Water Project, Advisory Committee Review - Draft: The California Water Plan Volume 3 – Regional Reports Chapter 10, South Lahontan Hydrologic Region, 2004.

[6] California Department of Water Resources, State Water project (http://www.water.ca.gov)

SBVMWD cooperates in a program to help replenish groundwater, using both SWP water and local runoff. Groundwater is the principal source of supply in the District's service area. Other sources of water supply are the SWP, the Santa Ana River, and its major direct discharge tributaries: Cucamonga Creek, Temescal Creek, San Sevaine Creek, Warm Creek and San Timoteo Creek. Secondary creeks include, but are not limited to Mill Creek, Lytle Creek, Cajon Creek, San Antonio Creek, Day Creek, Yucaipa Creek and Chino Creek.[7] SBVMWD's contract entitlement with the SWP was 1,677 acre-feet in 1972, the initial year of deliveries, and increased to a maximum entitlement of 102,600 acre-feet in 1991. Its maximum entitlement is the fifth largest of the SWP contractors. In its 1993 annual report on the SWP, DWR projected that the District would have purchased 35,000 acre-feet in 1994, then gradually increase its purchases until they reach the full entitlement of 102,600 acre-feet per year in 2010.[8] Actual allocations for 2004 were increased from 35,910 (35% of total allocation) to 66,690 (65% of total allocation). The increase was based on updated information on water availability. For 2005, the first allocation amount is 41,040 or 40% of the total.[9]

Water Demand

Many factors will affect future water demands. These factors include population growth, economic conditions and hydrologic conditions. Table 2-22 displays SBVMWD's demand projections from the year 2000 through the year 2050. Here, demand refers to direct use water demands. These direct demands are used to meet the needs of residential, municipal, commercial and agricultural consumers; recharge demands are not taken into account.

Table 2-22: Current and Projected Direct Use Water Demands (acre-feet per year)

2000	2005	2010	2015	2020	2025	2050
226,702	232,732	242,016	251,300	260,583	269,868	316,286
Total water demand increase compared with year 2000						
	2005	2010	2015	2020	2025	2050
percentage increase	3	7	11	15	19	40

[7] Water Quality Control Plan, Santa Ana River Basin (http://www.waterboards.ca.gov/santaana/html/basin_plan.html)
[8] San Bernardino Valley Municipal Water District (http://www.sbvmwd.com/)
[9] SWP Notice to Contractor 04-01,04-04 and 04-08

Figure 2-14A. Water Purveyors - Valley

Water Supply

Direct use water supply sources include groundwater, imported water, surface water and recycled water. Groundwater is the principal source of supply in the SBVMWD service area, accounting for 58 percent of the total water demands, or 132,205 acre-feet per year for the year 2000 (see Table 2-23). SBVMWD has forecasted that the available volume of groundwater supply will not change (132,205 acre-feet) and therefore by the year 2025 groundwater will account for 50 percent of the total demand and will further decrease to 42 percent of the total demand by 2050.

Surface water is the second largest supply source to the SBVMWD, accounting for about 23 percent of total water demands, or 52,200 acre-feet for the year 2000. By the year 2025, surface water is estimated as 20 percent of total water demands. By the year 2050, surface water will only account for approximately 17% of total water demands.

The Santa Ana River and its tributaries are the principal source of native surface water for the urbanized portions of San Bernardino. Years ago, combined agricultural and domestic water demand in this region exceeded the availability of water from the Santa Ana River or groundwater supplies in the watershed. These demands created a reliance on imported water. It was this lack of both native surface water and imported water for many years prior to 1963 that led to groundwater overdraft in SBVMWD's boundaries.

The over commitment of water in the Santa Ana River watershed led to lawsuits between water users over the use of both surface flows and groundwater. The lawsuits culminated in 1969 in two major judgments. Under the terms of the settlements, SBVMWD became responsible for providing a Santa Ana River base flow of 15,250 acre-feet per year, and maintaining safe yield and water levels in certain specified key wells. If conditions of both or either judgment are not met by the natural water supply, SBVMWD is required to deliver supplemental water to offset the deficiency.

Paragraph VI of the Judgment entitled *San Bernardino Basin Area Rights and Replenishment* states in part that:

"San Bernardino shall also receive credit against any future replenishment obligations for all replenishment which it provides in excess of that required herein, and for any amounts which may be extracted without replenishment obligation, which in fact are not extracted."

The Judgment provides that SBVMWD can carry forward to the current five-year period credits accumulated prior thereto. The accumulated credits for such replenishment and from the under-extraction through 2002 total 522,589 acre-feet. The accumulated obligation resulting from excess extractions and new export during the period 1971 through 2001 is 224,432 acre-feet. Therefore, at the end of the five-year period, 1998 through 2002, San Bernardino Valley's accumulated credits exceeded its accumulated obligations by 298,157 acre-feet.[10]

In an effort to provide a Santa Ana River base flow, treated sewage effluent from the Cities of San Bernardino, Colton, and Rialto discharge to the Santa Ana River. The combined effluent accounts

[10] Western – San Bernardino Watermaster Annual Report for Calendar Year 2003, August 2004

for about 25,000 acre-feet per year. The District has contracts with the Cities of San Bernardino and Colton obligating their flows to meet this requirement. As a result of this, the District has never had to use imported water to augment flows in the Santa Ana River.

Imported water is the third largest water supply source in the SBVMWD, accounting for approximately 19 percent of the total water demand, or 42,297 acre-feet for the year 2000. As indicated in Table 2-23, the volume of groundwater and surface water supply from year 2000 through year 2050 will remain the same; therefore, the SBVMWD will increase its reliance on imported water. By the year 2025, imported water is estimated at approximately 27 percent of the total water demand, or 72,449 acre-feet. By the year 2050, those figures are 32 percent, or 102,600 acre-feet, respectively.

The source of the imported water is the State Water Project (SWP) supply. The District is one of 29 contractors to the California State Water Project. The Devil Canyon Power Plant Afterbay is a principal point from which SWP water flows by gravity to SBVMWD. SBVMWD's contract entitlement for state water was 101,500 acre-feet in 1990 and increased to a maximum entitlement of 102,600 acre-feet in 1991. Originally the Department of Water Resources (DWR) estimated that all contractors would need their maximum entitlement by 1990, however, on a historical basis, the District has taken only a small portion of its SWP water entitlement and has indicated that its maximum entitlement delivery will not be needed until year 2050.

Table 2-23: Current and Projected Water Supply Sources to Meet Demands

Direct Use Water							
	2000	2005	2010	2015	2020	2025	2050
Groundwater	132,205	132,205	132,205	132,205	132,205	132,205	132,205
Imported Water	42,297	48,327	54,358	60,388	66,418	72,449	102,600
Surface Water	52,200	52,200	52,200	52,200	52,200	52,200	52,200
Recycled Water	0	0	3,253	6,507	9,760	13,014	29,281
Direct Use Water Total	226,702	232,732	242,016	251,300	260,583	269,868	316,286
Additional Recharge Water							
Imported Water	0	0	0	0	0	0	0
Surface Water	0	0	5,250	10,500	15,750	21,000	21,000
Reclaimed Water	0	0	3,031	6,062	9,094	12,125	27,281
Additional Water Recharge Total	0	0	8,281	16,562	24,844	33,125	48,281

Banking/Transfer Programs

As part of its strategy to improve water supply reliability, the SBVMWD allows MWD to purchase a dependable annual supply, as well as, an additional supply for dry year needs (see Table 2-24). Under a banking/transfer program, MWD purchases water provided to SBVMWD from its annual SWP water allocation. The purchased SWP supply is provided to MWD as direct deliveries of SWP water

through the California Aqueduct to MWD's service area and as deliveries of recaptured SWP water previously stored in the San Bernardino groundwater basin to MWD's service area.

The SBVMWD delivers the purchased supplies to MWD's service area through the coordinated use of facilities and interconnections within the water conveyance system of the two districts. Specifically, the intertie between the Foothill Pipeline and the existing segment of the Inland Feeder has been constructed and is operational as of December 2002. This intertie allows MWD to move SWP water from the East Branch of the California Aqueduct through the Foothill Pipeline, Inland Feeder and into the Diamond Valley Reservoir and the Colorado River Aqueduct.

The Diamond Valley Reservoir allows better management of water supplies between wet and dry years. The 800,000 acre-foot reservoir nearly doubles the region's existing storage capacity and provides increased terminal storage for SWP and Colorado River water supplies. Diamond Valley Reservoir could provide the entire South Coast Hydrologic Region with a six-month emergency supply after an earthquake or other disaster. It would also provide water supply for drought protection and peak summer demands.

Table 2-24: Estimated Water Supplies Available for MWD's Use Under the San Bernardino Valley Municipal Water District Program (acre-feet per year)

Year	Multiple Dry-Years (1990-1992)	Single Dry-Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	54,000	70,000	57,000	80,000
2010	54,000	70,000	57,000	80,000
2015	54,000	70,000	57,000	80,000
2020	54,000	70,000	57,000	80,000
2025	54,000	70,000	57,000	80,000

Reclaimed water represents the fourth largest water supply source to the SBVMWD, accounting for approximately 1 percent in the year 2010 or 3,253 acre-feet. By the year 2025, this water supply source is expected to increase to 5 percent or 13,014 acre-feet, and by 2050, these figures are estimated as 9 percent or 29,281 acre-feet, respectively.

Totals for additional recharge water supply sources are listed at the end of Table 2-23. The sources are divided between imported, surface and reclaimed water supplies. Surface water today represents the largest water source for recharge purposes, and this trend is expected to continue over the next 25 years. By year 2050, reclaimed water is expected to surpass surface water and represent the most significant water source for recharge purposes.

Table 2-25 lists all of the SBVMWD recycle projects along with the planning time horizon. This planning time serves as the date by which the project is expected to begin construction. If an actual construction date is known, then that information is provided. Projects from agencies within the SBVMWD region but outside of the SBVMWD service area include the Big Bear Area Regional

Wastewater Authority (BBARWA), the San Gorgonio Pass Water Agency (SGPWA), and the San Timoteo Watershed Management Authority (STWMA). Recycled water projects for these agencies are also listed.

Table 2-25: Recycled Water Projects in the SBVMWD Region

Region	Implementing Agency	Project Name	Storage (AF)	Yield (AFY)	Estimated Start of Construction	Planning Time Horizon
SBVMWD	City of Beaumont/Beaumont Cherry Valley Water District (B/BCVWD) CVWD	B/BCVWD Recycled Water System, Phase I	1,000	2,250	2002	2010
	B/BCVWD	B/BCVWD Recycled Water System, Phase 2		1,750	2003	2010
	Big Bear Area Regional Wastewater Authority (BBARWA)	Big Bear Recycled Water Planning Study		500	2002	2010
	City of Redlands	City of Redlands Recycled Water System		9,500	2002	2010
	Running Springs Water District (RSWD)	RSWD Recycle Project Study		300	2002	2010
	Yucaipa Valley Water District (YVWD)	YVWD Recycled System		4,700		2010

Inland Empire Utilities Agency

The IEUA serves the southwest portion of San Bernardino County, which comprises the West Valley planning area. IEUA provides service to a 242 square mile area in which about 700,000 people reside. This includes the cities of Chino, Chino Hills, Fontana, Montclair, Ontario, Rancho Cucamonga, and Upland. The IEUA wholesales water to seven separate water purveyors including but not limited to the Cucamonga County Water District and Monte Vista Water District. The groundwater basin holds approximately 8 million acre-feet of high quality water

Approximately 65 percent of the IEUA's water is obtained locally from the groundwater and canyon supplies, and 30 percent is purchases from MWD. Of the local groundwater supplies, approximately 35 percent is utilized to support agricultural use and 65 percent is utilized to support municipal and industrial uses. Inland Empire Utilities Agency also delivers approximately 60,000 acre-feet of imported water supplies to the local retail water supply agencies annually. Water supply reliability for this agency is based on the Chino Basin Watermaster adjudication and subsequent agreements between the various parties to the Judgment. These agreements provide for groundwater production rights that are not fully utilized by the Basin's agricultural interests to be transferred to municipal water purveyor. The Chino Groundwater Basin stores approximately 5 million acre-feet of groundwater and has the capability of storing an additional one million acre-feet. IEUA has six major responsibilities:

- Wastewater treatment and disposal.
- Water conservation and reclamation.

- Industrial waste or non-reclaimable waste disposal.
- Dairy manure – biosolids treatment and reuse.
- Supplier of supplemental water and salt and water supply management.
- Production of electricity.

Table 2-26: Current and Projected Direct Use Water Demands (acre-feet per year)

2000	2005	2010	2015	2020	2025	2050
247,200	267,360	298,750	312,200	320,200	328,400	375,660
Total Water Demand Increase Compared With Year 2000						
	2005	2010	2015	2020	2025	2050
Percentage Increase	8%	16%	22%	27%	30%	48%

Table 2-26 displays IEUA's demand projections from the year 2000 through the year 2050. Here, demand refers to direct use water demands. These direct demands are used to meet the needs of residential, municipal, commercial and agricultural consumers; recharge demands are not taken into account.

Water Supply

Direct use water supply sources include groundwater, imported water, surface water and recycled water. Groundwater is the principal source of supply in the IEUA service area, accounting for 74 percent of the total water demands, or 182,800 acre-feet per year for the year 2000 (see Table 2-27). IEUA has forecasted that their reliance on groundwater will gradually decrease such that by the year 2050 groundwater will only account for 54 percent of the total water supply sources by the year 2050.

Table 2-27: Current and Projected Water Supply Sources to Meet Demands

Direct Use Water							
	2000	2005	2010	2015	2020	2025	2050
Groundwater	182,800	183,700	184,600	186,700	188,800	190,900	201,756
Imported Water*	43,800	52,700	59,800	65,000	69,400	73,000	94,003
Surface Water	15,500	18,400	29,600	28,200	26,500	26,500	26,500
Recycled Water	5,100	12,560	24,750	32,300	35,500	38,000	53,402
Direct Use Water Total	247,200	267,360	298,750	312,200	320,200	328,400	375,660
Additional Recharge Water							
Imported (Replenishment) Water	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Surface (Storm) Water	18,7900	18,790	23,700	23,700	24,500	24,500	29,400
Recycled Water	500	15,440	20,250	22,700	29,500	32,450	52,261
Additional Water Recharge Total	59,290	74,230	83,950	86,400	93,200	96,950	121,661

* By 2010, imported water supply includes an increase of up to 15,000 AFY via the Baseline Feeder. 20,000 AFY would be provided to MWD by SBVMWD. MWD would then allocate 15,000 AFY to IEUA.

Imported water is the second largest supply source to the IEUA, accounting for about 18 percent of total water demands, or 43,800 acre-feet for the year 2000. By the year 2025, imported water is estimated as 22 percent of total water demands. By the year 2050, imported water will account for 25 percent of total water demands.

Surface water is the third largest supply source to the IEUA accounting for about 6 percent of the total water demand, or 15,500 acre-feet for the year 2000. By the year 2010, this will increase to 10 percent of the total demand. After this, reliance on surface water will gradually decrease and by the year 2050, surface water will only account for 7 percent of the total water demands, or 26,500 acre-feet.

Recycled water represents the fourth largest supply source to the IEUA, accounting for approximately 2 percent in the year 2000 or 5,100 acre-feet. By the year 2025, this water supply source is expected to increase to 12 percent or 38,000 acre-feet, and by 2050, these figures are estimated as 14 percent or 53,402 acre-feet.

Totals for additional recharge water supply sources are listed at the end of Table 2-26. The sources are divided between imported (replenishment) water, surface (storm) water, and recycled water. Surface water today represents the largest water source for recharge purposes, however, by the year 2050, recycled water will represent the largest water source for recharge purposes.

Recycled Water

Recycled water has been used for many years to supplement local and imported supplies. Water reclamation projects involve treating wastewater to a level that is acceptable and safe for many non-

potable applications. As indicated in Table 2-27, approximately 5,100 acre-feet of recycled water is currently used to meet water needs such as landscape, agricultural, irrigation, groundwater recharge, and commercial and industrial applications within the IEUA.

Realizing that water recycling is a critical component of an effective regional water resources management strategy, IEUA has implemented an aggressive water recycling program. In the future, water recycling will help to "drought proof" the Basin. The needs for the proposed recycled water program are identified as:

- To reduce the salt load and improve the water quality of the Chino Basin and the Santa Ana River;
- To provide a more dependable local water supply and to reduce the likelihood of water rationing during future droughts;
- To lower the anticipated costs of water and sewer rates to customers; and
- To create incentives to attract new businesses and industries, thereby creating new jobs.

The following projects displayed in Table 2-28 are associated with IEUA's goal of increasing water recycling production, which will result in a new dependable supply source, thus reducing IEUA's reliance on imported water.

Table 2-28. IEUA Recycled Water Projects: 2010

Project Name	Description	Total Project Yield/Delivery (AFY) Except where noted
City of Ontario Recycled Water Masterplan	Development of a recycled water master plan, a feasibility study and construction of proposed facilities.	12,000
Whittram Avenue Regional Pipeline	Distribute recycled water for recharge in Hickory Basin and Banana Basin, plus irrigation water to the California Speedway in Fontana.	2,000 for groundwater recharge; 430 for CA Speedway.
Etiwanda Conservation Basins Pipeline	Construction of lateral pipelines	800 – 1,100
Etiwanda North Distribution Line, Segment I, Phase I	Deliver water to groundwater recharge basins in the Upper Basin.	Not Indicated
Etiwanda North Distribution Line, Segment II	Will distribute recycled water to the future 210 Freeway pipeline, the CCWD 13 local lateral, and the Fontana-1 local lateral, as well as the San Sevaine Recharge Basins, the Victoria Basin and the Lower Day Basin.	7,567
Fourth Street Regional Pipeline, Segment I	Deliver recycled water to centrally located industries and businesses plus delivery of recycled water to six sets of groundwater recharge basins in the central area of Chino Basin.	Not Indicated
Wineville Avenue Regional Pipeline	Deliver recycled water to Inland Paperboard and Packaging, Inc.	1,200
Pine Avenue Intertie Pipeline	Deliver water from the RP-1/RP-4 distribution line to the RP-5/RP-2.	Not Indicated
RP 1/RP 4, Regional Recycled Water Pump Station, Phase I	Deliver recycled water throughout the north IEUA and central service area.	Initially, 13,070; at build-out, 26,140.
Regional Water Recycling Plants 1 and 4 Pump Station	Construction of pump station facilities for delivery of recycled water to all areas of the IEUA service area.	50,000 – 60,000
Booster Station/RP 4	Booster station to pressurize the Fourth Street Regional Pipeline	10,800 GPM
Booster Station/ RP 5	Designed to pressurize plant discharge	8,000 GPM
Jurupa Regional Pipeline	Construction of a pipeline extending eastward along Slover Avenue to Mulberry Avenue. Additionally, excess stormwater captured in the Jurupa Basin, and imported water collected therein, would be pumped to the RP-3 Groundwater Recharge Basins for recharge to the aquifer.	1,646
Grove Avenue Regional Pipeline	Deliver recycled water to regional customers and to the two basins for groundwater recharge.	1,727
Philadelphia Avenue Regional Pipeline	Replaces an existing gravity line and will provide service to the new Ontario soccer fields, a new Kaiser Hospital, and potential customers located along Helman Street.	2,800
Carbon Canyon Water Recycling Facility/RP 5 Intertie	Will provide continuous, uninterruptible supply of recycled water to the cities of Chino and Chino Hills.	6,175
RP 5/RP 2 Intertie Pipeline	Will deliver water from the new RP-5 facility to the Carbon Canyon Water Recycling Facility recycled water system.	3,385

Project Name	Description	Total Project Yield/Delivery (AFY) Except where noted
Monte Vista Regional Pipeline	Delivery of recycled water to the College Heights Basin, Upland Basin and the four Montclair Basins.	6,424
Etiwanda South Regional Pipeline	Delivery of recycled water to the Ontario I-10 local lateral and to the Jurupa Regional Pipeline.	351
Arrow Route Regional Pipeline	Delivery of recycled water to centrally located industries and businesses in the CCWD service area and to six sets groundwater recharge basins in central Chino Basin.	3,459
Benson Avenue Regional 4.25-Million Gallon Storage Reservoir and Pumping Station	Designed to maintain pressure in the system and to equalize water demand during the evening hours and during daytime peak demand periods.	NA
Etiwanda Avenue Regional 9.18-Million Gallon Storage Reservoir and Pumping Station	Designed as an equalizing reservoir for water demand during the evening hours and to maintain an equal pressure during daytime peak demand periods.	NA
Edison/Merril Regional Pipeline	A regional pipeline that will provide recycled water to the Cities of Chino and Ontario.	500-530
210 Freeway Distribution Pipeline	Delivery of recycled water for irrigation along the 210 Freeway and to laterals within the CCWD and Upland service areas.	5,210
Walnut/Riverside Regional Pipeline	The proposed pipeline would form a looped system from the RWRP-1 outfall line to the west side of the IEUA service area in the lower Chino Basin.	Not indicated
Euclid Avenue Regional Pipeline (Alternative A)	Proposed pipeline will provide recycled water to approximately 32 customers, including schools, parks, and churches	Not indicated
Conversion Ramona Feeder Regional Pipeline (Alternative B) [Monte Vista Water District]	Converts Ramona Feeder from potable use to recycled water use.	1,131
Benson Avenue Regional Pipeline	Will provide recycled water to two local laterals, plus provide pressure and flow to the Foothill Boulevard/Grove Avenue Regional Pipelines.	Not indicated
Foothill Boulevard Regional Pipeline	Will deliver recycled water to customers along Foothill Boulevard and to the Upland-1.	143
Montclair 4.25 Million Gallon Storage Reservoir and Pumping Station	Designed to maintain pressure during the daytime and to assure delivery of adequate quantities of water during the late night and early morning hours.	Not indicated

Metropolitan Water District of Southern California

In general, the water supply under MWD's apportionment of Colorado River water has been delivered since 1939 and by existing contract would continue to be available in perpetuity. Over the last 20 years, an average of 1.212 million acre-feet per year has been available for MWD's use, enabling the District to maintain essentially full Colorado River water delivery capability each year. The historical record indicates that the District's supply has been available in every year and can reasonably be expected to be available over the next 20 years.

With current planning and guidelines, MWD can expect to have sufficient Colorado River water to divert 1.25 million acre-feet through the Colorado River Aqueduct (CRA) under any foreseeable runoff and reservoir storage scenario through 2004. From 2005 to 2011, the probability of having sufficient surplus Colorado River water ranges from 96 percent initially to 69 percent while from 2012 to 2016, it varies from 66 percent to 51 percent. The likelihood that MWD would receive some surplus water ranges from about 4 percent to as high as 18 percent during 2005 to 2016. Negotiation of an agreement(s) to store water in Arizona and/or the Lower Coachella Valley in the near term would increase the likelihood that MWD would have sufficient water to divert 1.25 million acre-feet through the CRA after 2005.

Consistent with current practice, MWD has and will continue to have the capability to develop supplies that are available at least 10 years in advance of need and ensure water supply reliability. This recognizes that a program may require several years to become fully operational and reach ultimate production capability. In addition, the advance supply provides a reserve that safeguards against potential demand and supply uncertainties during the interim years, while being an investment that is fully utilized at the time of need.[11]

These three large agencies are taking proactive approaches to water conservation and recycling. Based on their projections, currently surface water represents the largest water source for recharge purposes, and this trend is expected to continue over the next 25 years. By year 2050, reclaimed water is expected to surpass surface water and represent the most significant water source for recharge purposes.

Mountain Region

In the Mountain Region, there are approximately 20 water purveyors (see Figure 2-14B). This number does not include approximately 60 single use water sources in this Region, many of which are resident church and youth camps. The primary water wholesalers include Crestline – Lake Arrowhead Water District (CLAWA) and the Big Bear Lake Department of Water and Power. Working in conjunction with these agencies are three large retail supplier/distributors including Crestline Village Water District, Lake Arrrowhead CSD and Running Springs Water District. Each of these agencies has documented a steady growth in water usage and are involved with programs for both water supply and conservation. There are also many other small to moderate sized water companies that provide services for various mountain communities.

In general, the west end of the mountain region has a remaining water availability capacity of 25% to 34%. For the east end of the mountain region, remaining water availability capacity is approximately 10% (see Table 2-29). These numbers are a function of water availability and actual available remaining water connections. Many of the larger water purveyors are in the process of updating their Master Plans and/or their proposed Capital Improvement Programs in order to meet the water supply needs forecasted for the next 25 years.

[11] Metropolitan Water District of Southern California Reliability Report – 2000

Figure 2-14B. Water Purveyors - Mountain

Figure 2-14C. Water Purveyors - Desert

Table 2-29. Mountain Region Water Capacity

Planning Area	Percentage of Available Water Connections*	Water Capacity Remaining*
Hilltop	34%	48%
Crestforest	25%	48%
Lake Arrowhead (1)	30%	30%(1)
Bear Valley (2)	10%	10%(2)

* - estimated average figures.

1) Lake Arrowhead figures are also a function of lake levels. This is an estimated value.
2) Big Bear Lake DWP is in the process of updating their Master Plan. These figures are from the existing Master Plan.

The difference in the water capacity remaining between the west and eastern portions of the mountain region is a function of water sources. The west end of the mountain region (Hilltop, Crestforest) gets approximately 70% (averaged) of its water from the CLAWA/State Water Project while Big Bear Lake Department of Water and Power provides all 100% of its water from groundwater well sources. The two primary challenges for this region is the drought and the population growth due to the shift from a higher percentage of part-time residents to full-time residents.

The specifics of the Mountain Region water supply and distribution are fairly complex. The Community Plans will provide specific information concerning these agencies and local supply and demand needs.

Lake Arrowhead Community Services District

The Lake Arrowhead Community Services District is a self governed independent agency/Special District responsible for providing water services to the Lake Arrowhead community. The service boundary for the water system, excluding the Deer Lodge Park area, encompasses approximately 4,900 acres and is essentially the same boundary as that of the Arrowhead Woods community.

Water Production/Consumption Quantities

Historical data relating to water production/consumption are indicated in Table 2-30 and displayed in Figure 2-15. A review of the data indicates that there has been a steady increase in water consumption between the years 1991 and 2000. At this time, the District is trying to estimate the relationship between population and water use in order to approximate how much water is required for "indoor" use and how much is used for irrigation.

Figure 2-15. Water Use

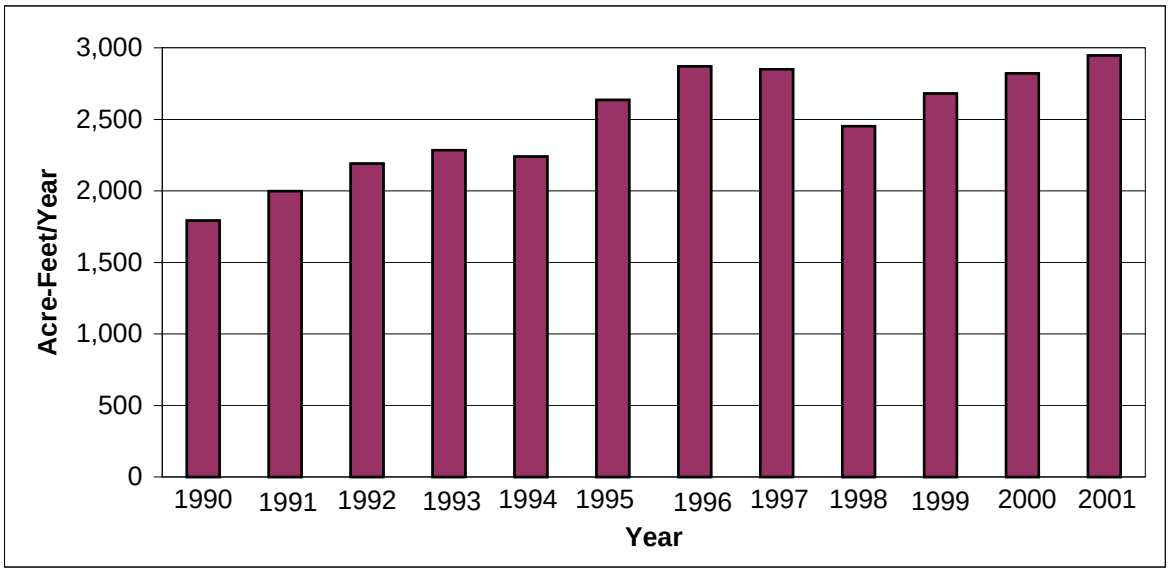


Table 2-30: Water Use
(acre-feet per year)

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
1,792	1,997	2,190	2,285	2,239	2,635	2,870	2,850	2,453	2,681	2,821	2,947
Total water demand change compared with year 1990											
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Percent Change	10%	9%	4%	-1%	15%	8%	-1%	-14%	9%	5%	4%

Water Supply

Lake Arrowhead has historically served as the sole source of drinking water for the Lake Arrowhead Community. Lake Arrowhead water is of relatively high quality, but still undergoes treatment by filtration and disinfections to meet the State and Federal drinking water regulations. The District maintains 18 water storage reservoirs, 9 pressure tanks, and 22 water pumping stations, as well as 250 miles of water mains. The District currently has a capital improvement program of $7.5 million planned in the next five years for water treatment and supply facilities.

Alternative Water Supplies

Providing a reliable water supply for its customers is a key concern for the District. The existing supply consists entirely of runoff from the Lake Arrowhead watershed. Historical data indicates that the average annual precipitation is approximately 42 ± standard deviation 19.2 inches. There are concerns that the natural replenishment of the lake through runoff from precipitation will not

support the current and future water demands. Therefore, a review of alternative methods for supplementing the runoff for replenishment has been conducted.

In an effort to prepare and evaluate the different alternatives, the District first performed a number of analyses to determine a benchmark lake elevation. This benchmark elevation was based on the District's definition of a First Stage Drought (5,100 feet), plus the amount that the lake loses to evaporation each year (four feet). Thus, the final benchmark lake elevation was established as 5,104 feet.

Once the benchmark elevation was established, the District prioritized a number of alternatives in order to meet its goal of reducing or ultimately eliminating its dependence on Lake Arrowhead as its sole source of water supply. These alternatives were developed based on the fact that the District will require not only demand management but also supplemental water supply projects. Nine projects were selected and separated into a series of three milestones that will allow the District to meet its goal of reducing or eliminating the draft on the lake in a cost-effective and measured way. In addition to the project studies, the District and the Crestline Lake Arrowhead Water Agency, (CLAWA), entered into an agreement regarding the water supply used by approximately 300 homes located within the boundaries of both CLAWA and the District. Under this agreement, the District would pay regular rates and charges to CLAWA for delivery of approximately 62 acre-feet per year of SWP water. This represents an amount equal to the average use of the homes in this "overlap" area over the past five years. Table 2-31 provides a summary of the Milestone 1 projects and indicates the amount of water each project will provide. The Milestone 1 projects are already underway, however the scheduled completion date has not been determined.

Table 2-31: Milestone 1 Projects

Project Name	Description	af/y
Treatment plant efficiency improvements	Recovering the water currently used to backwash filters at the two water treatment plants and returning it to the water supply.	150
Water Conservation Programs, Phase I	Implementation of basic water conservation programs, education, kits, ordinances, and enforcement.	630
Water Conservation Programs, Phase II	Implementation of Phase II plus advanced water conservation programs, including hardware exchanges and water conservation credits.	115
Groundwater Development Phase I	Drilling two wells on Lake Arrowhead Country Club property to supply the irrigation needs of the golf course and for drinking water supply	150
CLAWA 62 AF/Y Supplemental Supply	Delivery of SWP to 300 homes.	62
	Total:	1,107
	Total Draft Reduced	1,107 (35%)

Table 2-32 summarizes the Milestone 2 projects, which have a time line of up to five years and will reduce the draft on the lake by another 410 acre-feet.

Table 2-32: Milestone 2 Projects

Project Name	Description	af/y
Recycled Water Program Phase I	Substitution of non-potable tertiary treated water for lake water; for irrigation use in the Grass Valley area.	200
Groundwater Development Phase II	Developing up to four more groundwater wells for drinking water supplies and contracting for irrigation water from ALA's Grass Valley Park well.	210
	Total:	410
	Total Draft Reduced	1,517 (48%)

The Milestone 3 project displayed in Table 2-33, represents the remaining phase. Of the approaches under consideration, the Milestone 3 project will deliver the most water at the lowest risk and on the fastest schedule.

Table 2-33: Milestone 3 Projects

Project name	Description	af/y
SWP Purchase/Exchange	Approach One: Supplying well water to the SBVMWD in exchange for a like amount of SWP water. This water would be delivered from Lake Silverwood to the District by CLAWA under one of three delivery options that govern the amount of water transferred.	1,633
	Total:	1,633
	Total Draft Reduced	3,150 (100%)

The District realizes that by reducing or eliminating the required use of Lake Arrowhead would actually make Lake Arrowhead water the lowest cost water available to the District. Therefore, in wet years when the lake is full, it would be advantageous for the District to use lake water as a source of supply to the extent possible without significantly affecting the lake level.

Desert Region

The Desert Region is comprised of 41 water purveyors and approximately 120 single sources (see Figure 2-14C). Most of the single sources in the rural portions of the desert region are for commercial businesses or private properties. The Mojave Water Agency is the primary water basin agency, but there are also water districts and CSDs that provide distribution services for water supplies.

Mojave Water Agency

The Mojave Water Agency (MWA) is a water basin management agency with a service area that stretches from Phelan and Barstow to the Morongo Basin. Included within the MWA service area are the cities of Adelanto, Barstow, and Victorville, Town of Apple Valley and Yucaipa Valley, Hesperia, and the unincorporated communities of the Victor Valley Area (Lucerne Valley, Phelan,

Pinon Hills, Oak Hills, Baldy Mesa, Helendale, and Oro Grande), the Barstow Area (Daggett, Newberry Springs, Yermo, Lenwood and Hinkley), Joshua Tree and Landers.

The MWA consists of two distinct hydrologic planning areas referred to as the Mojave Basin Area and the Morongo Basin/Johnson Valley Area. The Mojave Basin Area is further subdivided into five subareas (hydrologic subbasins) known as Alto, Baja, Centro, Este and Oeste. The Morongo Basin/Johnson Valley Area also contains four hydrologic subbasins referred to as Johnson Valley, Means/Ames Valley, Copper Mountain Valley and Warren Valley Basins. These subareas are used for planning purposes to determine safe yield and to report groundwater well production.

For 1990 through 2000, Mojave Water Agency has calculated an annual growth of approximately 1.6 percent per year, for a total of a 16 percent increase in the ten-year period. MWA's own analysis of the past ten years shows a reduction of 4 percent in consumptive use from 1995 to 2000. Most of this reduction was centered in the Morongo Basin/Johnson Valley.

However, these figures are changing as MWA has updated their Regional Water Management Plan in 2002. In this report the projected the future water demand in their service area through to 2020 is presented. It is estimate that the average population growth for the region is 2.7%, with two subareas projected growth over 3.1%. They have also estimated two possible agricultural consumptive use scenarios: 1) agricultural use does not change and 2) agricultural use decreases at 5% per year based on the Mojave Basin Judgment until a balance is achieved between production rights and available supply as required by the Court. Additional details concerning these assumptions are found in this background report.

As presented in Table 2-34, all of the regions are projected to have larger deficits in 2020 than were actually recorded in 2000 for both scenarios. There is less of a deficit in "Scenario 2" due to the decrease in agricultural uses.[12]

Table 2-34. Year 2020 Average Annual Water Balance

Area	Net Average Annual Water Supply	Agriculture Scenario 1 (A.F./Yr.) Total(1)	Surplus/ Deficit	Agriculture Scenario 2 (A.F./Yr) Total(1)	Surplus/ Deficit
Mojave Basin Area					
Alto	34,700	81,900	-47,200	79,800	-45,100
Baja	5,600	28,800	-23,200	11,700	-6,100
Centro	18,500	21,200	-2,700	21,200	-2,700
Este	3,500	5,800	-2,300	4,000	-500
Oeste	1,100	4,800	-2,900	3,800	-2,700
Subtotal	**63,400**	**142,500**	**-79,100**	**120,100**	**-56,700**

[12] Mojave Water Agency, Regional Water Management Plan Update Phase I Report, June 2002

Mojave					
MB/JV Area					
Copper Mtn. Valley	600	1,000	-400	1,000	-400
Johnson Valley	2,300	50	+2,250	50,	+2,250
Means/Ames Valley	600	900	-300	900	-300
Warren Valley	90	2,100	-1,200	2,100	-1,200
Subtotal MB/JV(2)	**2,100**	**4,000**	**-1,900**	**4,000**	**-1,900**
Total	**65,500**	**146,500**	**-81,000**	**124,100**	**-58,600**

(1) Total includes both Agricultural and Urban uses. Urban uses include municipal, industrial, golf course, and recreational water uses.
(2) Johnson Valley is not included in the Morongo Basin/Johnson Valley totals because the supply is not included as noted in Chapter

MWA is in the process of implementing various plans that will provide for subarea specific solutions to some of the water supply issues forecasted. These plans include additional reservoir development, conservation, planning and recycled water.

While most of Mojave Water District's service area is within the South Lahontan Watershed Region, the service area extends into the Colorado River Hydrologic Region (Lucerne and Johnson Valleys and the Morongo Basin), which includes the Town of Yucca Valley. Part of MWA's SWP water (up to 7.2 taf) is allocated to that area. Some imported State Water Project water is used to recharge groundwater in the Mojave River Valley basins. Surface water and groundwater are exported from the South Lahontan Hydrologic Region to the South Coast Hydrologic Region by the Los Angeles Department of Water and Power.[13]

MWA calculates production based on demand sectors. The demand sectors include agriculture, municipal, industrial, golf courses and parks, and recreational lakes. These data are used to characterize the current water demand within each subarea and also to project possible future water production within each sector in each subarea.

Groundwater production is an accurate measure of the water demand within each subarea, but it cannot be compared directly with the agency's water supply estimates. The reason for this is that a portion of the water pumped is returned to the groundwater aquifer and becomes part of the available water supply. The portion of the groundwater pumped that does not return to the aquifer is defined as consumptive use.

[13] Advisory Committee Review Draft: The California Water Plan Volume 3 – Regional Reports Chapter 10. South Lahontan Hydrologic Region

Current Water Demand

The overall population within the MWA service area increased from about 273,000 in 1990 to approximately 321,000 in 2000. This represents an average annual growth rate of 1.6 percent per year.

Consumptive Use

During 2000, Mojave Basin Area customers used 105,200 acre-feet of water. Of this, 70,300 acre-feet (67 percent) were used for urban purposes and the remaining 34,900 acre-feet (33 percent) were used for agricultural purposes (see Table 2-35). In the same year, the Morongo Basin/Johnson Valley customers used 2,600 acre-feet for the sole purpose of urban use. This volume represents a 4 percent reduction when compared to Morongo Basin/Johnson Valley's 1995 consumptive use. Therefore, between 1995 and 2000, MWA customers reduced their consumptive use by 6 percent.

Table 2-35: 1995 and 2000 Consumptive Use (acre-feet/year)

Planning Area	1995	2000
Mojave Basin Area		
Urban Uses	57,500	70,300
Agricultural Uses	54,400	34,900
Subtotal Mojave	111,900	105,200
Morongo Basin/Johnson Valley		
Urban Uses	2,700	2,600
Total	114,600	107,800

The urban consumptive use amounts cited above include all of the non-agricultural uses such as industrial, municipal, golf courses and parks, and recreational lakes. Overall, agricultural consumptive use has been declining in all areas in the Mojave Basin Area since 1990 or before then while other consumptive uses have remained fairly constant since 1995. Consumptive use in the Morongo Basin/Johnson Valley Area has remained fairly constant between 1995 and 2000. About 95 percent of the consumptive use in the Morongo Basin/Johnson Valley area is municipal use, with the remainder being used for a golf course in Warren Valley. The area contains only minimal agricultural, industrial, or recreational lake uses.

Current Water Balance

As shown in Table 2-36, the average water deficit in the Mojave Basin Area for the year 2000 is approximately 41,800 acre-feet per year. The Morongo Basin/Johnson Valley Area has an average water deficit of approximately 500 acre-feet per year. Production data was not available for the Johnson Valley subbasin. The consumptive use estimate for the Johnson Valley Area for 2000 was determined using the 2000 population estimate and assuming that the per capita use was the same as the remainder of the Morongo Basin/Johnson Valley Area (Saracino-Kirby-Snow June 2002). Since 1995, State Water Project water has been purchased by the Hi-Desert, Joshua Basin, and the Warren Valley Watermasters (Hi-Desert Water District) and delivered by the Morongo Basin Pipeline. The

District currently takes delivery of approximately 3,500 acre-feet per year to offset the deficit and to add to groundwater in storage within the Warren Valley subbasin. Overall, the Mojave Water Agency has a long-term annual average water deficit of approximately 42,300 acre-feet per year.

Table 2-36: Year 2000 Average Annual Water Balance (acre-feet/year)

Planning Area	Net Average Annual Water Supply	Consumptive Use		Total	Surplus/Deficit
		Agricultural	Urban (1)		
Mojave Basin Area	63,400	34,900	70,300	105,200	-41,800
Morongo Basin/Johnson Valley (2)	2,100	0	2,600	2,600	-500
Total	65,500	34,900	72,900	107,800	-42,300

Notes:
(1) Urban uses include: municipal, industrial, golf course, and recreational water use.
(2) Johnson Valley is not included in the Morongo Basin/Johnson Valley totals.

Future Water Demand

Table 2-37 shows the estimated 2000 population and projected future population for the Mojave Basin Area and the Morongo Basin/Johnson Valley Area along with the average annual percent increase between 2000 and 2020. These population estimates were determined using data provided by the Southern California Association of Governments and data contained in stakeholder surveys (2002).

Table 2-37: Current and Projected Population Estimates

Planning Area	2000	2005	2010	2015	2020	Annual Percent Change
Mojave Basin area	288,800	323,200	368,300	422,600	492,900	+2.7%
Morongo Basin/Johnson Valley	32,200	35,600	39,400	43,700	48,600	+2.1%
Total	321,000	358,800	407,700	466,300	541,500	+2.6%

Future Consumptive Use

The following assumptions were used by MWA to estimate the future consumptive use through 2020 for various water uses:

- Industrial and recreational lake water uses were assumed to remain constant at year 2000 levels. The one exception was industrial use in the Alto subarea, which was assumed to increase by 4,000 acre-feet due to the expected operation of the new Hi-Desert Power Project.

- Municipal water use was assumed to change in direct proportion to the population in each subarea. The population estimates are shown in Table 2-37. Total water use was determined by multiplying these population estimates by per capita water use rates calculated for the year 2000.
- Golf course consumptive use was assumed to change in direct proportion with the change in municipal consumptive use.
- Agricultural consumptive use was estimated under two possible scenarios intended to provide a maximum and a minimum estimate of future agricultural demand.
  - **Agriculture Scenario 1:** assumes that agricultural water use does not change from the year 2000 estimates through 2020. Under this assumption, any current non-agricultural water deficit within the subarea and all increases in non-agricultural water uses would have to be supplied by imported water.
  - **Agricultural Scenario 2:** assumes that rampdown under the Mojave Basin Area Judgment (1996) resumes in 2002 at 5% per year until balance is achieved between production rights and available supply as required by Judgment. Non-agricultural water use was assumed to be met by existing non-agricultural free production allowances and through voluntary transfers of agricultural free production allowance. It was assumed, however, that at least 1,300 acre-feet of agricultural consumptive use (2,100 acre-feet of production) would remain in the Alto subarea, 300 acre-feet of consumptive use (500 acre-feet of production) would remain in the Oeste subarea, and 600 acre-feet of consumptive use (900 acre-feet of production) would remain in Baja.

The two agricultural scenarios represent significantly different estimates of future agricultural consumptive use in the Mojave Basin. Table 2-38 shows the projected consumptive use for the non-agricultural demand sector along with the total consumptive use for each scenario. Between 2000 and 2020, municipal consumptive use is projected to increase by about 31,600 acre-feet, an increase of 2.6 percent per year. In addition, golf course and park use is projected to increase by about 1,700 acre-feet, and industrial use is projected to increase by about 4,000 acre-feet. When agricultural consumptive use is held constant as in Agricultural Scenario 1, the overall water demand would increase by approximately 37,300 acre-feet. Under Agricultural Scenario 2, however, much of the increase in municipal consumptive use is offset by reductions in agricultural use, resulting in a total increase of only about 14,900 acre-feet between 2000 and 2020.

Table 2-38: Mojave Basin Area Projected Consumptive Uses (acre-feet/year)

Demand Sector	2000	2005	2010	2015	2020
Industrial	12,500	16,500	16,500	16,500	16,500
Municipal	46,000	51,200	58,300	66,700	77,600
Golf Courses	2,400	2,700	3,100	3,500	4,100
Recreational	9,400	9,400	9,400	9,400	9,400
Total: including Ag scenario 1	105,200	114,700	122,200	131,000	142,500
Total: including Ag scenario 2	105,200	112,200	108,700	111,400	120,100

The Morongo Basin/Johnson Valley area contains very little agriculture. Table 2-39 shows the projected consumptive use for each non-agricultural demand sector along with the total consumptive use for each scenario. Between 2000 and 2020, municipal consumptive use is projected to increase from 2,500 acre-feet to about 3,700 acre-feet (an increase of 2.1 percent per year). Golf course consumptive use is projected to increase by about 100 acre-feet. The total projected increase for the entire area is about 1,300 acre-feet between 2000 and 2020.

Table 2-39: Morongo Basin/Johnson Valley Area Consumptive Uses (acre-feet/year)

Demand Sector	2000	2005	2010	2015	2020
Agricultural	0	0	0	0	0
Industrial	0	0	0	0	0
Municipal	2,500	2,900	3,000	3,400	3,700
Golf Courses	200	200	200	300	300
Recreational	0	0	0	0	0
Total	2,700	3,100	3,200	3,700	4,000

Table 2-40 shows the projected total consumptive use under Agricultural Scenario 1. Both of the basins are projected to have larger water deficits in 2020 than they had in 2000. The Mojave Basin is projected to have a water deficit of 79,100 acre-feet per year on average in 2020. The Morongo Basin/Johnson Valley Area is projected to have a total average annual deficit of approximately 1,900 acre-feet per year in 2020.

Table 2-40: Year 2020 Average Annual Water Balance under Agricultural Scenario 1 (acre-feet/year)

Planning Area	Net Average Annual Water Supply	Water Use		Total	Surplus/Deficit
		Agricultural	Urban		
Mojave Basin Area	63,400	34,900	107,600	142,500	-79,100
Morongo Basin/Johnson Valley Area	2,100	0	4,000	4,000	-1,900
Total	65,500	34,900	111,600	146,500	-81,000

Table 2-41: Year 2020 Average Annual Water Balance under Agricultural Scenario 2 (acre-feet/year)

Planning Area	Net Average Annual Water Supply	Water Use		Total	Surplus/Deficit
		Agricultural	Urban		
Mojave Basin Area	63,400	12,500	107,600	120,100	-56,700
Morongo Basin/Johnson Valley Area	2,100	0	4,000	4,000	-1,900
Total	65,500	12,500	111,600	124,100	-58,600

Under Agricultural Scenario 2, the Mojave Basin Area would have an average annual water deficit of about 56,700 acre-feet per year in 2020 (see Table 2-41). Because the Morongo Basin/Johnson Valley Area has very little agriculture, the projected consumptive uses under Agricultural Scenario 2 are the same as for Agricultural Scenario 1.

Agricultural Scenarios 1 and 2 represent the low and high estimates of consumptive use in the Mojave Water Agency. Under Agricultural Scenario 1, the projected long-term average annual water deficit in the Mojave Water Agency in 2020 is about 81,000 acre-feet per year. Under Agricultural Scenario 2, the projected long-term average annual water deficit in 2020 is about 58,600 acre-feet per year.

In an effort to address the long-term average annual water deficit, the Mojave Water Agency is proposing two water management alternatives. Each of the alternatives provide the following benefits:

- 99% of total MWA demand is met with no significant shortage in any subarea or demand sector;
- Include an attainable level of 10 percent municipal conservation;
- Provide water quality improvements over existing conditions;
- All groundwater aquifer units are in balance; and

- Each alternative provides benefits to all subareas without negatively impacting other area.

The primary difference between the two alternatives is that one includes a 12,000 acre-feet per year capacity regional treatment plant in the Alto subarea and the other includes an in-lieu supply of SWP water to Silver Lakes (or the equivalent pond recharge projects) and larger sized recharge facilities in all Alto subarea aquifers.

Southern California Water Company

The Southern California Water Company (SCWC) is a subsidiary of the American States Water Company. American States Water Company has grown significantly since 1929 when the original water systems were acquired and currently is a viable service provider focused on the needs of over one million people throughout California and portions of Arizona. SCWC is a public utility company engaged principally in the purchase, production, distribution, and sale of water to over 240,000 customers, or one out of every 30 persons in California. SCWC also distributes electricity to more than 20,500 customers in the Big Bear area. SCWC's operations are grouped into three regions, eight districts and twenty-two customer service areas.

As stated, Southern California Water Company's operations are grouped into three geographic regions. San Bernardino County is in Region III, which also serves communities in Los Angeles, San Bernardino, Imperial and Orange counties. Region III operations are focused in more than 30 cities and communities serving more than 93,000 customer connections. The region is divided into three districts and 10 customer service areas. Region III operates 21 separate water systems consisting of more than 1,180 miles of transmission pipelines, meters and hydrants. Water delivered to customers' homes is surface water or pumped from local groundwater basins. On average, approximately 64 percent of the Region III water supply is pumped from 132 company- owned and operated wells. The remaining water supply is surface water purchased from the Metropolitan Water District of Southern California, Imperial Irrigation District, Municipal Water District of Orange County and Three Valleys Municipal Water District.

In San Bernardino County the four SCWC services areas and sources are listed as follows:

- The water delivered to the homes in the Apple Valley/Lucerne Valley Customer Service Area is local groundwater
- The water delivered to the homes in the Barstow Customer Service Area is local groundwater
- The water delivered to the homes in the Morongo Customer Service Area is local groundwater.
- The water delivered to the homes in the Wrightwood Customer Service Area is local groundwater

In 2002, a variety of projects were completed that help maintain drinking water quality and service throughout the SCWC service area. This includes the installation of manganese filters at Crooks Well, the replacement of 1,500 feet of water main and the installation of an additional 5,300 feet of new water main.

There are eight SCWC service area systems within San Bernardino County. These systems along with information regarding the quality and location of their sources of supply are displayed in Table 2-42:

Table 2-42: SCWC Systems in San Bernardino County

System Name	Source Of Supply	Source Water Quality Mcl Violations For 2002
Barstow	Groundwater pumped from the Mojave River Basin-Centro sub basin. The sub basin is in the center of the Mojave basin extending northwesterly and southeasterly from the Mojave River. Water is obtained from 25 SCWC-owned wells serving this community of 8,400 customers who live in Barstow, the community of Lenwood and the Nebo Marine Base.	None
Morongo del Norte and Morongo del Sur	Groundwater pumped from the Morongo valley portion of the Morongo basin located east and west of the Twenty Nine Palms Highway between Morongo Valley and Yucca Valley. Four company-owned wells pump the water serving the 800 customers living in the Morongo Valley.	None
Apple Valley/Victorville	Serving 2,300 customers, Apple Valley and the nearby Lucerne Valley have four separate water systems supplied by a total of 13 wells, which pump water from the Upper Mojave Groundwater Basin. The four systems are presented as follows:	
Victorville #1	Groundwater pumped from the Mojave River basin-Alto sub basin which is the upper portion of the basin east and west of the Mojave river.	None
Victorville #3	Groundwater pumped from the Mojave river basin-Este sub basin which is located in the Lucerne Valley area east of the Mojave River.	None
Victorville #5	Groundwater pumped from the Mojave River basin-Alto sub basin which is the upper portion of the basin east and west of the Mojave River.	None
Victorville #6	Groundwater pumped from the Mojave River basin-Este sub basin which is located in the Lucerne Valley area east of the Mojave River.	None
Wrightwood	Groundwater pumped from several canyon underflows; Swarthout and Sheep Creek in the Wrightwood area are adjacent to Highway 2. All of the 2,500 customers in Wrightwood receive their water from eight company-owned wells.	None

County Service Areas – Desert Region

The last primary water purveyor type that is available to the desert areas are the many CSAs. CSAs are the only water purveyors for many of the desert areas including Phalen, Morongo Basin, and Homested Valley. What follows is a table providing specific information on the CSAs located in the desert area. This information is from the 2003 Water Quality annual reports. (Special Districts Web Page)

Table 2-43: County Service Areas

CSA	System Characteristics	System Improvements	Water Quality Concerns	Metered Water Connections	Number Of Customers
CSA 42	4 wells which draw water from the Mojave River Basin, 1-246,000 gallon water tank, and 4 miles of water line.	None listed	none	127	422
CSA 64	5 wells, 3 reservoirs with a combined capacity of 2,700,000 gallons of water and about 36 miles of water line.	Drilling a new well in the City of Hesperia, installation of a complete telemetry Supervisory Control And Data Acquisition (SCADA) system and construction of two 3.0 mg reservoirs.	none	3,553	11,725
70 Zone C	9 wells, 2 2,500,000-gallon water tanks, and about 30 miles of water line.	Replacement of unreliable service lines, drilling and equipping well #10.	none	2,317	7,646
70 F	3 wells and 3 water tanks with a combined capacity of 260,000 gallons	The district will work with the county health department and the community to resolve water quality concerns regarding uranium and gross alpha.	Formal bottled water notification for uranium is still in effect.	86	290
70 zone J	4 wells, 9 reservoirs and 2 de-sanding tanks. Combined capacity is 2,048,000 gallons and about 148 miles of water line.	Well no. 2 was converted to a vertical turbine assembly; construction of a 1.75 mg storage reservoir and 4 miles of pipeline; conversion of well no. 3 to a vertical turbine assembly, and drilling a production well in the Oro Grande Wash.	none.	2,578	8,507
70 Zone L	11 pressure zones, 13 wells, 30 reservoirs, 31 pressure reducing stations, 24 booster pump stations, and about 281 miles of water line.	None listed	none	5,516	18,203
70 Zone W-1	3 wells and 3 water tanks, with a combined capacity of 620,000.	None listed	none	609	2,006
70 Zone W-3	2 wells and 2 water tanks with a combined capacity of 265,000 gallons	Facility plan completed	none listed	171	561
70 Zone W-4	6 wells, 2 reservoirs with a combined capacity of 310,000 gallons and about 3 miles of water line.	The district will work with the county health department and the community to resolve water quality and quantity problems and the arsenic and uranium levels.	Formal bottled water notification due to exceedances for arsenic still in effect. Water alert letter for conservation is also in effect.	126	415

2.3.2.2 WASTEWATER

Introduction

As previously noted, the County is safeguarding public health while planning for present and future development needs within an integrated water resource planning framework, which wastewater planning has now become an integral part. The Circulation and Infrastructure Element's background report presents an assessment of current and future wastewater and wastewater-related facilities that will be required to provide for expected population increases.

As part of the effort to gather and summarize issues regarding wastewater infrastructure and capacity, data was gathered from federal, state, and regional agencies. Information regarding proposed rules on sanitary sewer overflows was obtained from the US EPA website. The three Regional Boards associated with the County provided watershed management information. At a local level, information was obtained from the IEUA and the SAWPA. A list of sewer agencies is presented below in Table 2-44.

Table 2-44. San Bernardino County Sewer Service Providers

City/Community	Sewer District
Adelanto	Victor Valley Water Reclamation Agency
Apple Valley	Victor Valley Water Reclamation Agency
Arrowbear	Lake Arrowhead Community Services District
Barstow	City of Barstow - sewer Barstow Heights CSD
Big River	Big River CSD
Chino	Inland Empire Utilities - sewer
Chino Hills	Inland Empire Utilities - sewer
City of Big Bear Lake	Big Bear Area Regional Wastewater Agency
City of Big Bear Valley	Big Bear Area Regional Wastewater Agency
Colton	City of Colton
Crestline	Crestline Sanitation District
Fontana	City of Fontana - sewer Inland Empire Utilities - sewer
Grand Terrace	City of Grand Terrace - sewer
Green Valley	Green Valley Service Area 79 -sewer
Hesperia	City of Hesperia
Highland	East Valley Water District
Lake Arrowhead	Lake Arrowhead Community Services District
Loma Linda	City of Loma Linda
Lytle Creek	Lytle Creek CSA
Montclair	Inland Empire Utilities - sewer
Newberry	Newberry Springs CSD
Ontario	Inland Empire Utilities - sewer
Rancho Cucamonga	City of Rancho Cucamonga
Redlands	City of Redlands Municipal Utilities

Rialto	City of Rialto - sewer
Running Springs	Running Springs Water District
San Bernardino	SB City Water Reclamation - sewer East Valley Water District - SD
Upland	Chino Basin Water District - sewer Inland Empire Utilities - sewer
Valley of Enchantment	Crestline Sanitation District
Victorville	Victor Valley Sanitation District - sewer Baldy Mesa Water District - SD
Yucaipa	Yucaipa Valley Water District -sewer

Existing Conditions

Valley Region

The Valley Region of the County is the location for most of the public wastewater collection/treatment facilities. These facilities are all within the Santa Ana Regional Water Board jurisdiction. These facilities include: IEUA (various locations); Rialto; Colton; San Bernardino; Redlands; Yucaipa Valley Water District facilities and Lytle Creek (see Figure 2-16A).

Some examples of capabilities include the City of Redlands' wastewater treatment facility that has the ability to process 9.5 million gallons of wastewater per day. It is currently processing about 6 million gallons per day. The Yucaipa Valley Water District collects and conveys wastewater through a network of sewer mainlines which range in size from 8 inches to 24 inches. Approximately 160 miles of pipelines are maintained by nearly 3,000 manholes within the District's service area. As the area develops, sewer mainlines continue to be installed and dedicated to the District. The collection system also has five lift stations that collect wastewater from various low lying areas and pump the wastewater to an elevation whereby the wastewater will flow by gravity to the water recycling facility. The City of Rialto Utilities Division oversees the treatment of approximately two billion gallons of wastewater per year and the maintenance of over 150 miles of sewer mains. The new treatment plant is expected to be fully operational at the start of 2005.[14]

For the year 2010, the amount of wastewater discharged to the Santa Ana River is projected to drop 9 percent, and the recycled amount increases by six-fold. Thereafter, for years 2025 and 2050, the projections increase at a more consistent rate. With the various agencies' projected increases in water recycling treated water discharged to the Santa Ana River is approximately 97,600 AFY, 149,000 AFY, and 177,000 AFT for years 2010, 2025, and 2050, respectively.

The Santa Ana Regional Board also provides regulatory oversight for several small package treatment plants that provide service for one or more small residential developments or commercial facilities.

[14] Southern California Alliance of Public Owned Treatment Works (SCAP)

Mountain Region

In the Mountain area, regional treatment facilities include Crestline Sanitation District, Running Springs County Water District, Lake Arrowhead CSA, Lytle Creek CSA and the Big Bear Area Regional Wastewater Agency. The sewering agencies that provide the infrastructure to these treatment facilities include: Big Bear Regional Wastewater Agency, Crestline Sanitation District, Lake Arrowhead CSD, Lytle Creek CSA and CSA 79 (Green Valley Lake) (see Figure 2-16B). Capacity for this region varies. For example, Lytle Creek with 784 connections, has capacity for growth. Lake Arrowhead CSD's treatment plant also has additional capacity. The remaining agencies, while not expecting immediate overuse emergencies, are planning and moving forward with improvement projects for increased capacity. For the mountain region, approximately 80% to 90% of the developed parcels are on-line to a sewering agency and the remaining balance on septic. Again the new challenge for this region is the change in percentage of part-time residents becoming full-time residents.

Desert Region

Most residential properties in the desert are on private sewage treatment systems (septic). However, there are limited service sewering agencies in the region including: Victor Valley Regional Wastewater Agency, City of Adelanto and the City of Barstow (see Figure 2-16C). The Barstow Water Reclamation Facility currently processes 2.7 million gallons per day (MGD) and has an overall capacity of 4.5 MGD. Victor Valley Water Reclamation Agency (VVWRA) currently plans to complete the construction of two subregional reclamation facilities in 2005, and another two subregional reclamation facilities in 2010. Using the subregional reclamation facilities VVWRA plans to wholesale recycled water to its member entities, as well as both public and private water purveyors in the Victor Valley. Proceeds from the sale of recycled water will be used to offset the monthly cost of wastewater treatment (VVWRA's rate for sewer user charges has not been increased since 1992). By 2020 the flow of wastewater from the area is expected to more than double from today's 9.1 million gallons per day to a total of 18.6 million gallons per day, and approximately 7.0-8.5 million gallons per day of the flow will be treated and reclaimed using subregional reclamation facilities. The development of subregional reclamation facilities will also significantly reduce the need to expand the main sewer system connecting VVWRA with the Victor Valley. In April 2002 VVWRA completed the expansion of the treatment plant to accommodate flows up to 11 MGD. The construction included additional treatment units to expand the capacity of the regional facility to 11 MGD, an increase from the previous rated capacity of 9.5 MGD. Daily flows to the wastewater treatment plant increased by at least 4%-5% each year since 1997. The current flow of 9 MGD is now expected to increase to over 18.6 MGD by the year 2020 (VVWRA web site).

The Hi-Desert Water District also has plans to build a wastewater treatment plant with related transport infrastructure, however does not have the funding to begin the project.

Figure 2-16A. Sewer Service Providers and Treatment Facilities – Valley Region

Figure 2-16B. Sewer Service Providers and Treatment Facilities – Mountain Region

Figure 2-16C. Sewer Service Providers and Treatment Facilities – Desert Region

CMOM Overview

A sanitary sewer collection system is a vital element of a community's infrastructure and an essential component of the wastewater treatment process. Sanitary sewer infrastructures across the United States have been built over the last 100 years or more using a variety of materials, design standards, installation techniques, and maintenance practices. As infrastructure ages, the importance of preventive and predictive maintenance increases.

CMOM is a comprehensive management framework for municipalities to identify and incorporate widely-accepted wastewater industry practices to:

- Better manage, operate and maintain collection systems
- Investigate capacity constrained areas of the collection system
- Respond to sanitary sewer overflow (SSO) events

Wastewater utility operators can provide a high level of customer services and reduce regulatory noncompliance when using the CMOM approach. The approach helps utilities to optimize use of human and material resources by shifting maintenance activities from reactive to predictive. This type of approach will result in cost savings through avoided overtime, emergency construction costs, increased insurance premiums, and the possibility of lawsuits. CMOM information and documentation can also facilitate communications with the public, other municipal works and regional planning organizations and regulators.

With CMOM planning, the utility selects performance goal targets, and designs CMOM activities to meet the goals. The CMOM planning framework covers operation and maintenance planning, capacity assessment and assurance, capital improvement planning, and financial management planning. An important element of a successful CMOM program is to periodically collect information on current systems and activities and develop a snapshot in time analysis. From this analysis the utility may establish its performance goals and plan its CMOM program activities.

State of California CMOM

The State of California, through the State Water Resources Control Board (SWRCB) is moving forward with implementation of the proposed Federal CMOM rule. Currently, the State is working with municipal sanitation agencies to develop a model CMOM program. To date, policy and guidance text has already been developed. The Regional Water Quality Control Board Staff have indicated that even if the Federal program is delayed indefinitely, the State will move forward with its CMOM program. According to Regional Board staff, the CMOM program framework may be associated with the Municipal Separate Storm Sewer Systems, (MS4), permit program. Since one of the goals is to eliminate SSOs, the MS4 permit elements will focus on collection systems. This new MS4 program will incorporate requirements for grease and organics management into pretreatment programs. The reasoning behind this is that grease blockages are usually the cause of many SSOs.

Proposed Rules – Sewer Spill Overflows

The EPA is considering proposing NPDES permit regulations to improve the capacity, management, operations and maintenance (CMOM), of municipal sanitary sewer collection systems

and to improve public notification of sewer spill overflow, (SSO), events. The State of California, through the State Water Resources Control Board (SWRCB) is moving forward with implementation of the proposed Federal CMOM rules. Currently, the State is working with municipal sanitation agencies to develop a model CMOM program.

Wastewater utility operators can provide a high level of customer services and reduce regulatory noncompliance when using the CMOM approach. The approach helps utilities to optimize use of human and material resources by shifting maintenance activities from reactive to predictive. This type of approach will result in cost savings through avoided overtime, emergency construction costs, increased insurance premiums, and the possibility of lawsuits. CMOM information and documentation can also facilitate communications with the public, other municipal works and regional planning organizations and regulators.

Regional Water Quality Control Boards (RWQCBs)

In the County of San Bernardino there are three RWQCBs, each with its own water quality control plans which, among other things, forms the basis for the regulation and control of wastewater treatment and discharges. The three RWQCBs are :

- Santa Ana Region
- Lahontan Region
- Colorado River Region

Most of San Bernardino County's public wastewater collection/treatment facilities are within the Santa Ana Region and therefore these facilities are listed as follows. Additional information on Lahontan and Colorado Regional Boards is found in the Biosolids and Water Quality Sections.

- Inland Empire Utilities Agency, (IEUA), originally incorporated as the Chino Basin Municipal Water District (CBMWD). The CBMWD was renamed IEUA in June 1999. Recent data indicates that the agency serves close to 700,000 people and covers 242-square miles in the areas of Chino, Chino Hills, Fontana, Montclair, Ontario, Upland, and Rancho Cucamonga;
- Cucamonga Valley Water District
- City of Rialto;
- City of Colton;
- City of San Bernardino;
- City of Redlands;
- Yucaipa Valley Water District facilities that serve the City of Calimesa;
- The City of Yucaipa, and portions of Riverside and San Bernardino Counties;
- Lytle Creek, County Service Area 70 S-3;
- Running Springs County Water District;
- East Valley Water District;
- Big Bear CSD;
- City of Big Bear Lake; and,
- Big Bear Area Regional Wastewater Agency.

Table 2-45 lists the wastewater treatment plants within the County of San Bernardino and the Santa Ana Watershed. The Santa Ana Watershed Project Authority (SAWPA) provided the values displayed in the table. For the year 2010, the amount of wastewater discharged to the Santa Ana River (SAR) is projected to drop 9 percent, and the recycled amount increases by six-fold. Thereafter, for years 2025 and 2050, the projections increase at a more consistent rate. With the various agencies' projected increases in water recycling, Table 2-45 shows that the treated water discharged to the SAR is approximately 97,600 AFY, 149,000 AFY, and 177,000 AFT for years 2010, 2025, and 2050, respectively.

Table 2-45: WW Treatment Facilities Production and Design Capacities in the Santa Ana Watershed

				2000					2010				2025			
OPERATING AGENCY	FACILITY NAME	TREATMENT LEVEL	DISPOSAL METHOD	AVG. DAILY FLOW (mgd)	DESIGN CAP. (MGD)	TOTAL PROD. (MGD)	DISCH. TO SANTA ANA RIVER (MGD)	RECL. AMOUNT (MGD)	DESIGN CAP. (MGD)	TOTAL PROD. (MGD)	DISCH. TO SANTA ANA RIVER (MGD)	RECL. AMOUNT (MGD)	DESIGN CAP. (MGD)	TOTAL PROD. (MGD)	DISCH. TO SANTA ANA RIVER (MGD)	RECL. AMOUNT (MGD)
Big Bear Area Regional Wastewater Agency	BBARWWA	Sec./Ter.	Crop Irrigation	2.00	4.60	2.00	0.00	2.00	4.60	2.50	0.00	2.50	4.60	3.00	0.00	3.00
CA Department of Correction	Chino Institution for Men	Secondary	Not Provided	0.60	0.90	0.60	Not Provided	Not Provided	0.90	0.62	Not Provided	Not Provided	0.90	0.62	Not Provided	Not Provided
City of Colton	Colton WRF/RIX	Secondary	Ponds & Landscape	6.18	8.40	5.25	5.25	0.00	9.75	9.75	9.75	0.00	9.75	9.75	9.75	0.00
Inland Empire Utilities Agency	Regional Water Recycling Plant # 1	Tertiary	Stream, Golf Course, Agric., & Recharge	39.60	44.0	41.30	37.40	1.91	44.00	35.00	13.80	40.20	52.00	44.00	22.30	52.70
Inland Empire Utilities Agency	Regional Water Recycling Plant # 4	Tertiary	Stream & Golf Course	3.00	7.00	2.40	2.36	0.04	14.00	14.00			21.00	21.00		
Inland Empire Utilities Agency	Satellite Plants	Tertiary	Stream	Not Constructed					5.00	5.00			10.00	10.00		
Inland Empire Utilities Agency	Regional Water Recycling Plant # 5	Tertiary	Stream, Golf Course, Agric., & Recharge	Not Constructed					15.00	14.00	17.50	8.50	30.00	29.00	30.30	10.70
Inland Empire Utilities Agency	Carbon Canyon Water Recycling Facility	Tertiary	Stream, Landscape & Agric.	9.10	10.20	9.10	6.00	3.10	12.00	12.00			12.00	12.00		
Inland Empire Utilities Agency	Regional Water Recycling Plant # 2	Tertiary	Stream	4.40	6.70	4.40	4.40	0.00	Phased Out				Phased Out			
Inland Empire Utilities Agency	**IEUA Total**	**Tertiary**	**Misc.**	**56.10**	**67.90**	**57.20**	**50.16**	**5.05**	**90.00**	**80.00**	**31.30**	**48.70**	**125.00**	**116.00**	**52.60**	**63.40**
City of Redlands	Redlands WWTP	Secondary	Not Provided	6.00	9.00	6.00	5.80	0.20	9.00	6.00	5.80	0.20	9.00	6.00	5.80	0.20
City of Rialto (OMI)	City of Rialto WWTP	Tertiary	Composting	7.00	10.70	6.80	6.80	0.00	10.70	7.00	5.00	2.00	15.70	9.50	4.50	5.00
Running Springs Water District	Running Springs	Secondary	Ponds & Irrigation	0.55	1.00	0.55	0.00	0.55	1.00	0.65	0.00	0.65	1.00	0.75	0.00	0.75
City of San Bernardino	San Bernardino WRP/RIX	Sec./Ter.	Not Provided	25.00	25.00	25.00	25.00	0.00	33.00	33.00	33.00	0.00	60.00	60.00	60.00	0.00
Yucaipa Valley Water District	H.N. Wochholz WWTP	Tertiary	Stream & Agric.	3.50	4.5	3.50	3.25	0.25	8.00	6.30	2.30	4.00	10.00	7.00	0.70	6.30
Yucaipa Valley Water District	Oak Valley WWTP	Tertiary	Stream & Agric.	Not Constructed					Not Constructed				3.00	1.20	0.00	1.20
Yucaipa Valley Water District	**YVWD Total**	**Tertiary**	**Misc.**	**3.50**	**4.50**	**3.50**	**3.25**	**0.25**	**8.00**	**6.30**	**2.30**	**4.00**	**13.00**	**8.20**	**0.70**	**7.50**
Totals (MGD)					**132.00**	**106.90**	**96.26**	**8.05**	**166.95**	**145.82**	**87.15**	**58.05**	**238.95**	**213.82**	**133.35**	**79.85**
Totals (AFY)											**97,621**				**149,371**	

Biosolids

The projected regional growth will be accompanied by a substantial increase in the amount (tons) of biosolids produced. Because biosolids are a natural by-product of treated wastewater, biosolids production is expected to increase at roughly the same rate as recycled water production.

Biosolids are nutrient-rich organic materials resulting from the treatment of domestic sewage in a treatment facility. Biosolids often contain approximately 93 to 99 percent water, as well as solids and dissolved substances either present in the wastewater or added during wastewater or biosolids treatment. Biosolids must be carefully treated and monitored in accordance with regulatory requirements. There are different regulations for different classes of biosolids. Class A biosolids contain no detectable levels of pathogens. Class A biosolids meet strict vector attraction reduction requirements and low levels metals contents and only have to apply for permits to ensure that these very tough standards have been met. Class B biosolids are treated but still contain detectible levels of pathogens. Nearly all forms of Class B biosolids must meet buffer requirements, public access, and crop harvesting restrictions. Local governments are now required to treat wastewater and to either dispose the biosolids through incineration, landfill disposal, or recycle them as fertilizer.

San Bernardino County follows the regulating local Regional Water Quality Control Board standards in dealing with biosolids and water. With regard to landfills, the County follows the California Integrated Waste Management Board standards. Permits obtained from the Board state that the landfills are allowed to accept biosolids.

Projections for biosolids were based upon the percentage increases obtained from the recycled water total production projections

A Regional Approach for Biosolids

It has been suggested that wastewater agencies within the County will most likely have to join forces and develop a disposal plan for biosolids. The plan may include one or more Organic Management Facilities to dispose of all the biosolids within the region. The Organic Management Facility could turn the biosolids into some type of organic substance that could be safely applied to the land. This type of facility could possibly solve most of the region's problems related to the disposal of biosolids.

Septage Management

Although municipal wastewater treatment plants service most of the County, a significant number of residences and businesses have septic tanks, leachfields, and/or septage pits. For example, in the Desert area, a significant number of the septic tanks in the watershed are located within the incorporated areas of the Victor Valley. The Victor Valley Wastewater Reclamation Authority and the City of Adelanto are operating septage receiving facilities for treatment and disposal. In addition, the County accepts septage at its Landers and Barstow landfills.

Septic Tanks, Septage Pits, and Leachfields

Many County areas continue to discharge wastewater to septic tanks, seepage pits, and leachfields. The Water Quality Control Boards prohibit the installation of new septic tanks and leachfields in some areas of the County. These areas have one or more conditions that could result in degradation of water quality from leaching of septic waste, such as fractured bedrock, high rainfall, and shallow depth to groundwater.

Santa Ana Region

Population and urbanization within the Santa Ana Watershed are projected to dramatically increase over the next 50 years. This regional growth is usually accompanied by a substantial increase in the amount (tons) of biosolids produced. Because biosolids are a natural by-product of treated wastewater, biosolids production is expected to increase at roughly the same rate as recycled water production. How to effectively dispose of and efficiently utilize this by-product poses a significant challenge to the Santa Ana Watershed. Regional solutions to this significant growth are addressed in this section.

All of the Valley and a most of the Mountain areas of San Bernardino County follow the Santa Ana Regional Water Quality Control Board standards in dealing with biosolids and water. Table 2-46 lists both the biosolids projections and the method of disposal for different agencies within the jurisdiction of the Santa Ana Regional Board for years 2000, 2010, 2025, and 2050. Projections for biosolids were based upon the percentage increases obtained from the recycled water total production projections. Due to lack of information, biosolids data for the City of Rialto is not included.

Table 2-46: Biosolids Projections and the Method of Disposal

				2000		2010		2025		2050	
Operating Agency	Disposal Method	Disposal Area	Class	Wet Tons/ Day	Wet Tons/ Year	Wet Tons/ Day	Wet Tons/ Year	Wet Tons/ Day	Wet Tons/ Year	Wet Tons/ Day	Wet Tons/ Year
City of Beaumont	Landfilled	On Site	B	1.56	570	2.60	950	4.16	1,520	8.31	3,038
BBARWA	Composted And Incineration	Synagro & Mitsubishi plant	b	20.00	7300	25.00	9,125	30.00	10,950	40.00	14,600
CA Dept of corrections	Soil Enhancement	On Site	b	0.53	192	0.55	198	0.57	198	0.58	198
City Of Colton	Land Applied	Synagro	b	6.48	2,365	12.03	4,392	12.03	4,392	12.03	4,392
IEUA	Composted	Co-Composting Facility Synagro & Earthwise	a	170	62,050	238	86,783	345	125,835	458	167,057
City Of Redlands	Landfilled	City Owned Landfill	b	8.00	2,300	8.00	2,300	8.00	2,300	8.00	2,300
City Of Rialto	Lack of information										
Running Springs Wd	Composted	Synagro	b	0.50	180	0.59	213	0.68	245	0.77	278
Yucaipa Valley Wd	Composted	One Stop Landscape Supply, Redlands, Ca	b	10.00	3,600	18.00	6,480	23	8,434	30.00	10,800
Totals				217	78,557	305	110,441	423	153,874	558	202,663
% Increase From 2000				0%	0%	31%	29%	49%	49%	61%	61%

Agency Specific Challenges within the Santa Ana Region

Inland Empire Utilities Agency – IEUA's primary concerns are the same as those that most agencies face: relying too heavily on any one source to dispose of and/or haul away their biosolids. For example, if IEUA relies too heavily on land application within a specific county, IEUA would not have a place to dispose of their biosolids if that county should decide to ban biosolids land application.

IEUA is also concerned with the challenge of manure, which originates from the many dairies within the Chino area. These dairies produce tons of manure annually, thus creating disposal challenges. For long term planning, this is a diminishing challenge, as increasing urbanization will

result in the relocating a number of dairies to more remote areas. This in turn will greatly reduce the amount of manure produced over the next 50 years.

City of Colton – The City of Colton's immediate challenge is that their relatively old facility needs to be updated. The biosolids drying beds are not drying up as efficiently as intended; consequently, the biosolids take twice as long to dry during the wet weather season than expected.

City of Redlands – The City of Redland's primary concern is the need for land in order to develop more drying beds for their biosolids. Currently, the City runs out of drying space for the sewage sludge during the wet weather season. The city operates a wastewater treatment plant and disposes their biosolids in a City-owned landfill.

City of San Bernardino – The City of San Bernardino currently disposes of its biosolids in a remote disposal location in Bakersfield, where they are land applied. The City's primary challenge is the cost of hauling their biosolids to this remote location.

Yucaipa Valley Water District – Yucaipa Valley Water District's most challenging concern is the possibility of San Bernardino County banning the land application of Class B biosolids, and perhaps even Class A biosolids. YVWD currently sells their biosolids to a private contractor, who hauls them to Redlands for composting.

The following are examples of solutions that individual agencies are considering and/or implementing.

Inland Empire Utilities Agency – As a long term solution, IEUA plans to turn all 170 tons/day of biosolids that they collect, into recycled products. Some methods of biosolids recycling are composting, palletizing, and pasteurizing. This solution is discussed in the Chino Basin Organics Management Strategy Business Plan, which describes the proposed enclosed facilities that would turn biosolids into useful forms of organic substances, such as compost.

City of Colton – The City's solution to the drying challenges is to expand their dewatering area. An expansion of the facility will help to improve the drying conditions of the biosolids. The City may also implement new methods of drying such as mechanical dewatering.

City of Redlands – Redlands is developing a Solids Handling Master Plan, which will outline a better way to handle their biosolids. The City also plans to solve their lack of land space by purchasing more property in order to develop more drying beds for their biosolids.

City of San Bernardino – San Bernardino intends to add cogen to the sewage sludge in order to further dry the sludge. This process reduces the weight of the sludge by 20%, thus further reducing hauling costs.

Yucaipa Valley Water District – YVWD foresees an effective public relations program as a major solution in coping with biosolids issues, coupled with plans to produce on-site Class A biosolids in the future.

Lahontan Region - Mojave River Watershed

Specific concerns related to wastewater and biosolids issues in this watershed are provided below.

Septage Management

Although municipal wastewater treatment plants service some of the areas of the watershed, a significant number of residences and businesses have septic tanks, leachfields, and/or septage pits. Based on a survey conducted by the County of San Bernardino, a significant number of the septic tanks in the watershed are located within the incorporated areas of the Victor Valley. The Victor Valley Wastewater Reclamation Authority and the City of Adelanto are operating septage receiving facilities for treatment and disposal. Each month VVWRA accepts and treats as much as 550,000 gallons of septic tank and chemical toilet waste.

Septic Tanks, Septage Pits, and Leachfields

Although some of the communities in the watershed are serviced by sewer services, many other areas continue to discharge wastewater to septic tanks, seepage pits, and leachfields. The United States Geological Survey has conducted a study of the potential effects of leaching septic waste to groundwater quality in the Victor Valley. The results of this study indicate that the septic waste loads only minimal amounts of nitrogen compounds to groundwater in the Victor Valley. It is important to note that the findings of this study can only be directly applied to areas of the watershed that have similar climates and hydrogeologic conditions. Additionally, the water quality effects of leaching septic waste such as the potential for increasing total dissolved solids has not been fully evaluated.

The RWQCB prohibits the installation of new septic tanks and leachfields in some areas of the watershed. These areas have one or more conditions that could result in degradation of water quality from leaching of septic waste, such as fractured bedrock, high rainfall, and shallow depth to groundwater. Some exemptions are allowed. Recently, an ad-hoc technical advisory committee was formed to discuss septic issues, and is comprised of representatives from the Regional Board, Department of Health Services, Mojave Water Agency, Victor Valley Wastewater Reclamation Authority and cities within the Victor Valley.

Irrigated Agriculture and Confined Animal Facilities

Although the acreage of irrigated agriculture in the Mojave Watershed has diminished in recent years due to urban development, agricultural water use continues to exceed urban use. Confined animal facilities in the watershed have generally consisted of dairies and chicken ranches. There is an estimated thirteen dairies in the watershed, and several chicken ranches continue to operate in the watershed.

The RWQCB has established waste discharge requirements (WDRs) for four dairies in the watershed based on their close proximity to the Mojave River (within ½-mile). These WDRs limit the amount of manure that can be applied to the alfalfa fields at the dairy based on the calculated argronomic rate for nitrate consumption by the crop. In each of these four cases, a portion of the manure must be exported from the dairy because more is produced than can be applied to the irrigated land. Typically, the manure is exported to other irrigated agricultural sites within the watershed. As resources allow, the RWQCB will work with the remaining dairies, any of the chicken

ranches, or the irrigated sites that receive the exported manure under the Nonpoint Source Program. The RWQCB will coordinate future regulation with the State Board and other appropriate agencies to implement the recently released federal Unified Animal Feeding Operations Strategy. In an effort to develop comprehensive manure management Best Management Practices (BMPs) for the entire watershed, the RWQCB is developing a widespread program that will protect the beneficial uses of groundwater. For this program, the RWQCB will work with the County of San Bernardino Division of Environmental Health Services because the Division already inspects many of the dairies and chicken ranches regarding public health issues (e.g., vectors and odors). To date, a stakeholder group has already completed an initial database with the number of cows and waste treatment abilities associated with each dairy.

Wastewater Treatment and Recycling

The Regional Board provides regulatory oversight for several community wastewater treatment facilities. These facilities provide service for: (1) the San Bernardino Mountains – Lake Arrowhead Community Services District and Crestline Sanitation District; (2) the Victor Valley - Victor Valley Wastewater Reclamation Authority (VVWRA); (3) the Community of Silver Lakes - San Bernardino County Services Area No. 70; (4) the City of Barstow; (5) the Yermo and Nebo Annexes of the Marine Corps Logistics Base, and (6) Adelanto Wastewater Treatment Plant. The Regional Board also provides regulatory oversight for several small package treatment plants that provide service for one or more small residential developments or commercial facilities.

The VVWRA maintains and operates the largest treatment plant in the watershed. The treated wastewater is currently discharged to percolation ponds and to the Mojave River. Implementation of a wastewater recycling plan would involve the construction of pilot wastewater treatment plants upstream of the existing plant to facilitate the availability of high quality effluent for upstream uses. Such uses would include irrigation of parks and golf courses. The City of Victorville has recently received a federal grant of one half million dollars to explore and develop water recycling options.

One of the critical elements of the wastewater recycling plan is the discharge of wastewater to the Mojave River during the winter season when the demand for recycling water may be limited. The RWQCB's Basin Plan currently prohibits the discharge of wastewater directly to the Mojave River between the Lower Narrows at Victorville and the Mojave Forks Dam. The Basin Plan also contains numerical water quality objectives for the Mojave River that could potentially be exceeded as a result of the wastewater discharges. The RWQCB has determined that it is appropriate to provide exemption language in the Basin Plan for the direct discharge of recycled wastewater to the Mojave River between the Lower Narrows and the Mojave Forks Dam. This will therefore require an initial characterization of the water quality in the Mojave River before a full evaluation of the numerical water quality objectives can be completed.

Wastewater recycling projects may also be pursued in the San Bernardino Mountains. Direct discharges of high quality effluent to surface water may greatly enhance the beneficial uses of these waters, including freshwater habitat, wildlife, and wetlands. These projects would require careful planning including possible modifications to the existing numerical water quality objectives.

Colorado River Region

Major issues within the Lower Colorado River Watershed are related to pollution from overuse of septic systems by resort parks along the River. Likewise, the majority of communities along the Lower Colorado River also utilize septic systems for wastewater disposal. Septic systems can pollute ground water or surface waters with pathogens and nitrates, particularly if improperly maintained or operated. The Colorado River Regional Sewer Coalition (CRRSCo) is a non-profit organization based in Lake Havasu City, Arizona. The organization consists of Lower Colorado communities, local governments, Indian tribes, and related entities. The goal of the CRRSCo is to improve water quality in the Lower Colorado Region by securing funds to replace septic tanks with sewers and wastewater facilities. The U.S. Congress is the most likely source of funding. The CRRSCo recently hired a lobbyist to help secure this funding.

2.3.2.3 WATER QUALITY

There are common water quality issues that have been identified throughout the County. The State Water Board and each of the three Regional Boards have developed Basin Plans and other regulatory requirements that will need to be complied with in the coming years. Often water quality is a function of water usage and conservation. Proactive, concurrent, combined planning efforts are ongoing in the three planning Regions that should be participated in and/or monitored.

Existing Conditions

The most typical water quality issues found in the County include:

- Groundwater - high Total Dissolved Solids (TDS) and nitrate levels, solvent plumes, toxic constituents (metals), wastewater disposal problems (septic tanks), groundwater recharge and water level management;
- Surface Water - excess sediments and nutrients, protection of endangered plant and animal species, wastewater disposal problems (septic tanks), and invasive plant eradication.

Irrigated agriculture and confined Animal Facilities are examples of industries that have been contributing to these water quality issues.

Regional Water Quality Control Boards (RWQCBs) Regulations

Santa Ana Region

The Santa Ana Region covers an area of approximately 2,800 square miles. The Santa Ana River Basin makes up most of the Region. While it is the smallest of the nine water quality control regions in the State, the Region contains a wide variety of water resources, including pristine mountain streams and lakes, coastal estuaries and beaches, and effluent-dominated rivers. The Santa Ana Region is too large and complex to be managed as a single watershed, and it has therefore been divided into ten Watershed Management Areas (WMAs). The four WMAs within the County of San Bernardino are:

- Chino Basin;

- Big Bear Area;
- Upper Santa Ana River; and
- Middle Santa Ana River.

The water quality issues that have been identified for each WMA and priority Regional Board activities are listed below in Table 2-47. These water quality issues are further discussed in the Conservation element of this report.

Table 2-47: Priority Activities in Watershed Management Areas

Watershed Management Area	Primary Water Quality Concerns	Priority Regional Board Activities
Chino Basin	Groundwater: high TDS and N levels, solvent plume	Participation in the Nitrogen/TDS task force, implementation of the dairy regulatory program, and TMDL development for nutrients, pathogens, and suspended solids.
Big Bear Area	Excess sediments and nutrients, toxic constituents (metals), protection of endangered plant and animal species.	Development of TMDLs for nutrients, metals, siltation, and pathogens.
Upper Santa Ana River	Wastewater disposal problems (septic tanks).	Enforcement activities related to septic tank system prohibitions.
Middle Santa Ana River	Wastewater reclamation (TDS and nitrogen issues), groundwater recharge and water level management, invasive plant eradication.	Santa Ana River monitoring at Prado dam. Participation in the Nitrogen/TDS task force. (See Chino Basin for Santa Ana River Reach 3 TMDL activities).

National Pollutant Discharge Elimination System (NPDES)

San Bernardino County Flood Control District is designated as the Principal Permittee in the Santa Ana Region, NPDES Waste Discharge Permit, Order No. R8-2002-0012 which was adopted in April 2002. This Phase I permit, while regionally managed by the Flood Control District includes the County of San Bernardino, 15 incorporated cities in the Valley Region and Big Bear Lake. At the time of this writing, this is the only NPDES permit for the County. However, the Desert Region, which is regulated by both the Lahontan and Colorado Regional Boards, will be designated with Phase II permits. The Lahontan Water Board is moving forward with permitting for their watershed area. While the Colorado Regional Board is not specifically implementing a permit for their jurisdiction, all of the County areas are held to State-wide regulations.

This 2002 Santa Ana Permit was included in a cycle of permits that mandated additional requirements for private and public properties, both during the construction and post-construction phases. The Flood Control District, in order to respond to these new requirements, developed the "San Bernardino County Stormwater Program, Model Water Quality Management Plan" guidance document in June 2004. This document was specifically published to "guide the Permittees that have land-use planning and development authority, in the development and implementation of a program to minimize the detrimental effects of urbanization on the beneficial uses of receiving waters, including effects caused by increased pollutant loads and changes in hydrology."

As specified in the Permit issued to the Permittess, planning agencies are required to review and approve WQMPs prior to issuing grading, building or occupancy permits. This review should be completed as early as possible in the approval process, as during the Tentative Tract review process.

In general, development and redevelopment projects that either 1) fall into the eight Permit-specified categories listed in Table 1-1 (Category Projects), or 2) are not Category Projects but have a precise plan of development (e.g. all commercial or industrial projects, residential projects <10 dwelling units, and all other land development projects with potential for significant adverse water quality impacts) or subdivision of land (Non-Category Projects), must be conditioned to develop, submit, and implement a WQMP. In addition, the Agency may require development of a WQMP for any project.

This Permit specifically listed project and development types that must have WQMPs in order to be approved. These categorical projects are as follows:

Permit-Specified Project Categories

1. All significant re-development projects. Significant re-development is defined as the addition or creation of 5,000 or more square feet of impervious surface on an already developed site. This includes, but is not limited to, additional buildings and/or structures, extension of existing footprint of a building, construction of parking lots, etc. Where redevelopment results in an increase of less than fifty percent of the impervious surfaces of a previously existing development, and the existing development was not subject to SUSMPs, the design standards apply only to the addition, and not the entire development. When the redevelopment results in an increase of more than fifty percent of the impervious surfaces, then a WQMP is required for the entire development (new and existing).

2. Home subdivisions of 10 units or more. This includes single family residences, multi-family residence, condominiums, apartments, etc.

3. Industrial/commercial developments of 100,000 square feet or more. Commercial developments include non-residential developments such as hospitals, educational institutions, recreational facilities, mini-malls, hotels, office buildings, warehouses, and light industrial facilities.

4. Automotive repair shops (with SIC codes 5013, 5014, 5541, 7532- 7534, 7536-7539).

5. Restaurants where the land area of development is 5,000 square feet or more

6. Hillside developments of 10,000 square feet or more which are located on areas with known erosive soil conditions or where the natural slope is twenty-five percent or more.

7. Developments of 2,500 square feet of impervious surface or more adjacent to (within 200 feet) or discharging directly into environmentally sensitive areas such as areas designated in the Ocean Plan as areas of special biological significance or waterbodies listed on the CWA Section 303(d) list of impaired waters.

8. Parking lots of 5,000 square feet or more exposed to storm water. Parking lot is defined as land area or facility for the temporary storage of motor vehicles

Notes:

1. A subdivision of land may require a WQMP
2. For Standard Industrial Classification (SIC) codes, see: www.osha.gov/oshstats/sicser.html
3. For the current list of 303(d) impaired waterbodies, contact the local Regional Water Quality Control Board. Table B-1 in Attachment B contains a reference list based upon the 2002 303(d) list

A WQMP is also required to be developed and implemented for County projects that qualify as Category Projects or Non-Category Projects, regardless of whether County or other agency permits are required. WQMP requirements must be incorporated into the project design and shown on project plans prior to bidding for construction contracts or similar contracts, and before allowing the project to commence.

Planning agencies must deny grading, building, and occupancy permits when a project proponent fails to develop or submit a WQMP for Category or Non-Category projects. Also during the construction phase of the project, failing to implement a WQMP in conjunction with the construction must result in denial of occupancy permits or approvals. Failure to implement a WQMP after construction of the project may result in enforcement actions by the Agency and referral to the RWQCB for additional enforcement actions.[15]

Lahontan Region

The Lahontan Region is geographically and ecologically diverse. It includes 42 recognized major watersheds and waterbodies of statewide and nationwide importance. The Southern part of the region, which includes the County of San Bernardino, has some of the fastest growing cities in California, and many of the rural areas of the Region are affected by heavy recreational use, resource management, or military activities. In an effort to more effectively and efficiently direct the limited state and federal water quality funds to the highest priority activities, the SWRCB in partnership with the U.S. EPA have agreed to implement a watershed management approach in their planning processes. Because of finite resources, the watershed management approach could only focus on five watersheds within the Lahontan Region. Of the five selected watersheds, only one watershed within San Bernardino County was selected. That watershed is the Mojave River watershed. The Mojave River watershed was selected based on its resource value, its known water quality problems, and opportunities for implementing current and future Regional Board programs within a true watershed planning context. Water quality issues associated with this watershed are provided in the Conservation Background report.

Mojave River Watershed

The Mojave Watershed encompasses approximately 4,500 square miles and is located entirely within San Bernardino County. Total population in the watershed is increasing every year and is expected to grow to nearly one-half million by the year 2015. Much of the existing and projected future population is concentrated in the Victor Valley, which includes the incorporated cities of Victorville, Hesperia, Apple Valley and Adelanto. Deep Creek and the West Fork of the Mojave River are located in the San Bernardino Mountains and are the two perennial tributaries to the Mojave River.

[15] San Bernardino County Stormwater Program, Model Water Quality Management Plan Guidance", June 2004

Both tributaries have multiple branch tributaries within the San Bernardino Mountains. Deep Creek and the West Fork of the Mojave River converge immediately upstream of the Mojave Forks Dam, which was constructed for flood control to protect downstream land and property from damage during peak storm events. The Mojave River channel begins at the Mojave Forks Dam and extends for approximately 120 miles transecting the communities of Hesperia, Apple Valley, Victorville, Hinkley, and Barstow and finally terminating at Soda and Silver Dry Lakes near the community of Baker.[16]

Colorado River Region

The Colorado River Basin Region covers 13 million acres (20,000 square miles) in the southeast corner of California. It includes all of Imperial County, and portions of San Bernardino, Riverside and San Diego Counties. The Region includes 28 major watersheds or "hydrologic units", and has water bodies of statewide, national, and international significance.

Like the Santa Ana and Lahontan Regional Boards, the Colorado Regional Board has implemented a Watershed Management approach as its planning process. The Colorado Region has been divided into three sub-regional watershed management areas. Of these, two are within San Bernardino County. These are the Lower Colorado River Watershed and the Desert Aquifers watershed. The Lower Colorado River Watershed is geographically defined by a number of major surface water bodies, whereas, the Desert Aquifers watershed has little surface water and hundreds of aquifers.

Lower Colorado River Watershed

The Lower Colorado River Watershed is located in the southeast corner of California, and includes portions of San Bernardino, Riverside and Imperial Counties. This watershed is 200 miles long, with a maximum east-west width of 70 miles. The watershed comprises only a small part of the entire Colorado River drainage area, and includes the region south of Lee's Ferry (near Glen Canyon Dam) in Arizona. Within the Lower Colorado River Watershed water quality issues are related to pollution from overuse of septic systems by resort parks along the River. Likewise, the majority of communities along the Lower Colorado River also utilize septic systems for wastewater disposal.

Desert Aquifers Watershed

The Desert Aquifers Watershed is located in the Mojave Desert in southeastern California and includes San Bernardino County's Lucerne Planning Area. Significant water quality concerns in the Lucerne Valley are in regard to nitrate pollution within the Lucerne Valley aquifer. The suspected sources of nitrate pollution in Lucerne Valley ground water include agricultural practices, septic systems, and disposal of domestic wastewater through evaporation/percolation ponds by the Big Bear Area Regional Wastewater Agency (BBARWA). The lateral and vertical extent of the plume has not been delineated, however, it encompasses several miles and threatens over 15 private supply wells. The Colorado Regional Boards lacks the necessary funds for developing a comprehensive

[16] RWQCB staff, Christopher R. Maxwell: Paper "A Watershed Management Approach to Assessment Of Water Quality and Development of Revised Water Quality Standards for the Ground Waters of the Mojave River Floodplain", 2000

ground water monitoring program, however, the Board has indicated that Regional Board staff will assist the BBARWA as the agency begins to address the issue.

2.3.2.4 STORMWATER

The 1972 CWA established the NPDES permit program to regulate the discharge of pollutants from point sources to waters of the United States. Pollution from land runoff was largely unabated until the 1987 CWA Amendments. As a result, diffuse sources, including urban storm water runoff, now contribute a larger portion of many kinds of pollutants than the more thoroughly regulated point sources like sewage treatment plants and industrial facilities. The USEPA recognizes urban runoff as the number one source of estuarine pollution in coastal communities. Phase I of the NPDES Storm Water Program was promulgated in 1990 and it focused primarily on large municipal sewer systems and developments of more than five acres. Phase II was developed in 1999 to cover smaller municipal separate storm sewer systems known as MS4s (populations less than 100,000 people) and any construction activity on sites between one and five acres. By March 10, 2003, municipalities falling under the Phase II regulations must have compliant storm water programs in place or face potential enforcement action from the USEPA.

Storm water pollution prevention focuses on two areas: 1) the increased volume and rate of runoff from impervious surfaces and 2) the increased concentration of pollutants in the runoff. Storm water urban runoff is typically addressed through a Standard Urban Storm Water Mitigation Plan (SUSMP). Whenever applicants have projects that will result in urban runoff, they must prepare a Storm Water Pollution Prevention Plan (SWPPP). These plans contain Best Management Practices (BMPs) to reduce or eliminate the infiltration of pollutants into the storm water system. BMPs can be structural or non-structural. Structural BMPs are construction devices and procedures that can be implemented in the design of a project during construction. Examples include such things as retention basins, filtration through landscaped areas, water efficient irrigation systems, and motor fuel concrete dispensing areas. Nonstructural BMPs are management or behavioral approaches to storm water pollution reduction. For instance, these include programs to educate the public on proper disposal of hazardous/toxic wastes, activity restrictions, landscape management practices, common area litter control and street sweeping.

The required control measures that MS4s must incorporate include all of the following: (1) public education and outreach, (2) public participation and involvement, (3) illegal discharge detection and elimination, (4) construction site runoff control, (5) post-construction runoff control for new development and redevelopment, and (6) pollution prevention programs. RWQCBs would like storm water quality issues being properly addressed through the new federal stormwater regualtions. RWQCBs would like planning documents to incorporate more specific information, for example, what the quality of the receiving waters is and what will be necessary to further reduce storm water pollution.

San Bernardino County Stormwater Program

The County recognizes that land development can cause runoff that contaminates reservoirs. The County also understands that certain land uses can adversely impact the quality of water in a

groundwater basin. When rain falls on an urban area, the first flush of runoff can pick up and transfer a considerable number of pollutants, including chemical herbicides, pesticides, fertilizers, hazardous spill materials, animal droppings, gasoline and oil drippings, and litter. Sewage lines may also overflow. If the developing area is located in the watershed of a reservoir, these potentially pathogenic and carcinogenic contaminants can enter the water supply system.

In addition, depending on their location and design, sanitary landfill sites have the potential to degrade valuable groundwater basins. A groundwater basin could be contaminated if a landfill were to leak since toxins, acids and other pollutants could escape from a landfill and percolate into the basin.

The Santa Ana RWQCB has required the unincorporated areas of the County, the sixteen incorporated cities of the County within the Santa Ana River watershed, and the San Bernardino Flood Control District, as permittees, to be included in the NPDES Municipal Stormwater Permit (the Permit). The Permit and Section 4 of the Report of Waste Discharge, dated April 1995, require the development and adoption of New Development/Redevelopment Guidelines (Guidelines). These Guidelines are to be used by the permittees of the San Bernardino County Stormwater Program as a supplement to the Drainage Area Management Program and the Report of Waste Discharge. The purpose of preparing the Guidelines was to identify pollutant prevention and treatment measures that could be incorporated into development projects. The Guidelines recommend which BMPS should be required as standard practice. The Guidelines provide information on storm water quality management planning, general conditions, special conditions, and construction regulatory requirements. The Guidelines also define structural and non-structural BMPs and lists the BMPs that are considered as "standard practice" for new developments. A major philosophy of the County's NPDES stormwater quality program, as set forth in the ROWD, is a regional approach to stormwater quality planning and management on a wastershed basis (San Bernardino County Stormwater Program 2000).

Figure 2-17A. Storm Water Distribution – Valley Region

Figure 2-17B. Storm Water Distribution – Mountain Region

Figure 2-17C. Storm Water Distribution – Desert Region

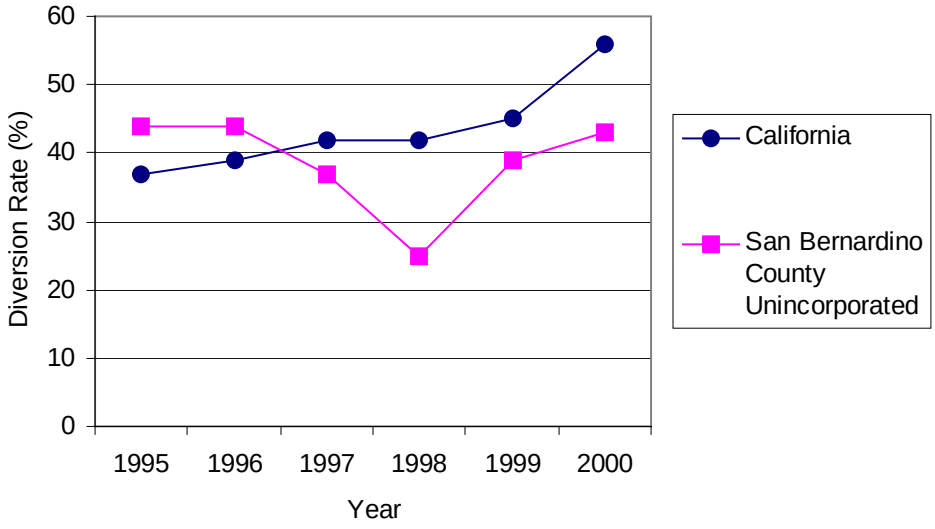
2.3.2.5 SOLID WASTE

Solid waste management is essential to maintain the health and safety of a community. If left uncontrolled, these wastes could threaten public health and safety and impair environmental quality. Additionally, the economic value of the recoverable portion of these wastes is substantial. With the growth in population, businesses, and industries increasing amount of waste is being generated everyday. In this scenario, management and effective utilization of solid waste becomes even more important.

In 1988, the California State Legislature found that Californians disposed of over 38 million tons of solid waste every year. This amount was expected to grow considerably every year if solid waste policies, existing at that time, were continued. In 1988, over 90 percent of California's solid waste was disposed of in landfills, some of which posed a threat to groundwater, air quality, and public health. If that trend was allowed to continue, California would have exhausted most of its remaining landfill space by the mid-1990's. In 1988, there was no coherent state policy to ensure that the state's solid waste is managed in an effective and environmentally sound manner for the remainder of the 20th century and beyond. The amount of solid waste generated in the state coupled with diminishing landfill space and potential adverse environmental impacts from landfilling constituted an urgent need for state and local agencies to enact and implement an aggressive new integrated waste management program. This led to the passage of AB939, the Integrated Waste Management Act (California Public Resources Code Section 40000 *et seq*) and the formation of the California Integrated Waste Management Board (CIWMB) in 1989.

In 2002, Californians generated approximately 72 million tons of solid waste. Almost half (52%) of this waste was disposed of in landfills and the other half (48%) was diverted away from landfills. Diversion of almost half of the solid waste away from landfills was a significant achievement considering that the diversion rate for California was only 10% in 1988. San Bernardino County generated approximately 1.9 million tons (5,200 tons each day) of solid waste in 2001. Diversion rates for the 25 jurisdictions within San Bernardino County ranged from 23 percent to 64 percent in 2001; the unincorporated San Bernardino County had a diversion rate of 28 percent. Figure 2-18 compares the diversion rates of San Bernardino County unincorporated area with that of the state. While the diversion rate for the state has consistently increased over the years, diversion rate for the unincorporated San Bernardino County shows a cyclical pattern. The rate was high in the years 1995 and 1996; dropping in 1997 and 1998, rising back to its original levels in the year 2000, and dropping again in 2001.

Figure 2-18. Diversion Rates, California and Unincorporated San Bernardino County



Data Source: California Integrated Waste Management Board (www.ciwmb.ca.gov)

Regulations that Affect Solid Waste

AB 939 - Integrated Waste Management Act. The governor of California signed Assembly Bill (AB) 939, known as the Integrated Waste Management Act, into law on September 29, 1989. The law was passed for the management of solid waste, which has become a big concern not only in California but also throughout the country. Because of concerns about water and air pollution associated with landfills and the desire to preserve the remaining open spaces, the opportunities to develop additional needed disposal capacity is limited.

The law established the California Integrated Waste Management Board (CIWMB) and set forth aggressive solid waste diversion requirements. AB 939 mandates a reduction of waste being disposed: jurisdictions were required to meet diversion goals of 25% by 1995 and 50% by the year 2000. AB 939 also established an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance.

Existing Conditions

AB 939 Compliance and Diversion Rates

In addition to mandates of reducing waste being disposed, AB 939 established an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance.

Table 2-48 presents the diversion rates for the 25 jurisdictions within San Bernardino County for the year 1995 and 2000. Most of the jurisdictions in the County experienced an increase in their diversion rates from 1995 to 2000, making significant progress towards achieving the AB 939 goal of 50% diversion. Eleven jurisdictions reached or exceeded the 50% diversion goal by 2000. Four cities (City of Hesperia, Montclair, San Bernardino, and Victorville) received a "good faith effort[17]" designation for the year 2000. Nine jurisdictions had a diversion rate between 40% to 50%, while five jurisdictions had a diversion rate between 40% and 30%.

It should be noted that the unincorporated area is the only jurisdiction in the San Bernardino County where diversion rate decreased from 1995 to 2000. The unincorporated county area has a time extension from February 2003 to July 2004 to meet the AB939 goal.

Table 2-48. Diversion Rates

	Jurisdiction/Year	1995	2000	CIWMB Biennial Review Status
1	Adelanto	No Rate	37	- Preliminary Rate - Board Approved Time Extension
2	Apple Valley	19	43	- Preliminary Rate - Board Approved Time Extension
3	Barstow	25	57	- Board Approved
4	Big Bear Lake	No Rate	59	- Board Approved
5	Chino	24	51	- Board Approved
6	Chino Hills	34	N/A	- Board Approved Time Extension
7	Colton	32	56	- Board Approved
8	Fontana	15	54	- Board Approved
9	Grand Terrace	30	52	- Board Approved
10	Hesperia	39	47	- Board Approved
11	Highland	31	52	- Board Approved
12	Loma Linda	No Rate	37	- Preliminary Rate - Board Approved Time Extension
13	Montclair	28	45	- Board Approved
14	Needles	24	33	- Preliminary Rate - Board Approved Alternative Diversion Requirement
15	Ontario	No Rate	37	- Preliminary Rate - Board Approved Time Extension
16	Rancho Cucamonga	26	35	- Preliminary Rate - Board Approved Time Extension
17	Redlands	35	45	- Preliminary Rate - Board Approved Time Extension
18	Rialto	43	51	- Board Approved
19	San Bernardino	23	46	- Board Approved
20	San Bernardino - Unincorporated	44	43	- Preliminary Rate - Board Approved Time Extension
21	Twentynine Palms	40	54	- Board Approved
22	Upland	23	41	- Preliminary Rate - Board Approved Time Extension
23	Victorville	22	45	- Board Approved
24	Yucaipa	38	60	- Board Approved
25	Yucca Valley	58	65	- Board Approved

Source: California Integrated Waste Management Board (www.ciwmb.ca.gov), Updated December 2004

Table 2-49 compares the diversion rates for the unincorporated portions of the counties of San Bernardino, Riverside, Los Angeles, Orange, Ventura, and Imperial. In 1995, unincorporated areas of all the six counties achieved the 25 percent diversion requirement of AB 939. In 2000, only three

of the six counties, Riverside, Ventura and Imperial, achieved the AB 939 diversion rate requirements of 50 percent. San Bernardino-unincorporated had a diversion rate of 43 percent in 2000. The jurisdiction has a board-approved time extension from February 2003 to July 2004 to meet the goals.

Table 2-49. Diversion Rates, Unincorporated County Areas

Jurisdiction	Diversion Rates, 1995 (%)	Diversion Rates, 2000 (%)	Notes
San Bernardino - Unincorporated	44	43	Preliminary Rate - Board approved time extension, Extension Begin Date: February 2003 Extension End Date: July 2004
Riverside - Unincorporated	36	50	-
Los Angeles Unincorporated	27	31	Preliminary Rate - Board approved time extension, Extension Begin Date: October 2002 Extension End Date: December 2004
Orange - Unincorporated	40	18	Preliminary Rate - Board approved alternative diversion requirement, Alternative Diversion Rate: 18%, Alternative Diversion Rate Begin Date: February 2003, Alternative Diversion Rate End Summary: June 2004
Ventura - Unincorporated	32	54	-
Imperial - Unincorporated	80	88	-

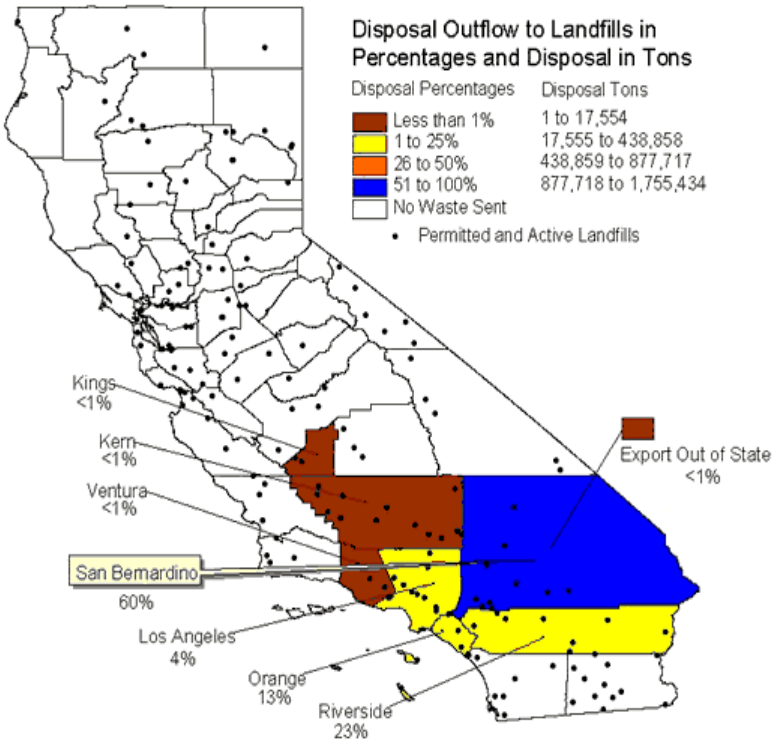
Source: California Integrated Waste Management Board (www.ciwmb.ca.gov), Updated December 2004

Waste Inflow and Outflow

The California Integrated Waste Management Board (CIWMB) Disposal Reporting System (DRS) tracks the amount of solid waste disposed by each jurisdiction in California. DRS has compiled maps showing the inflow and outflow of waste from each jurisdiction.

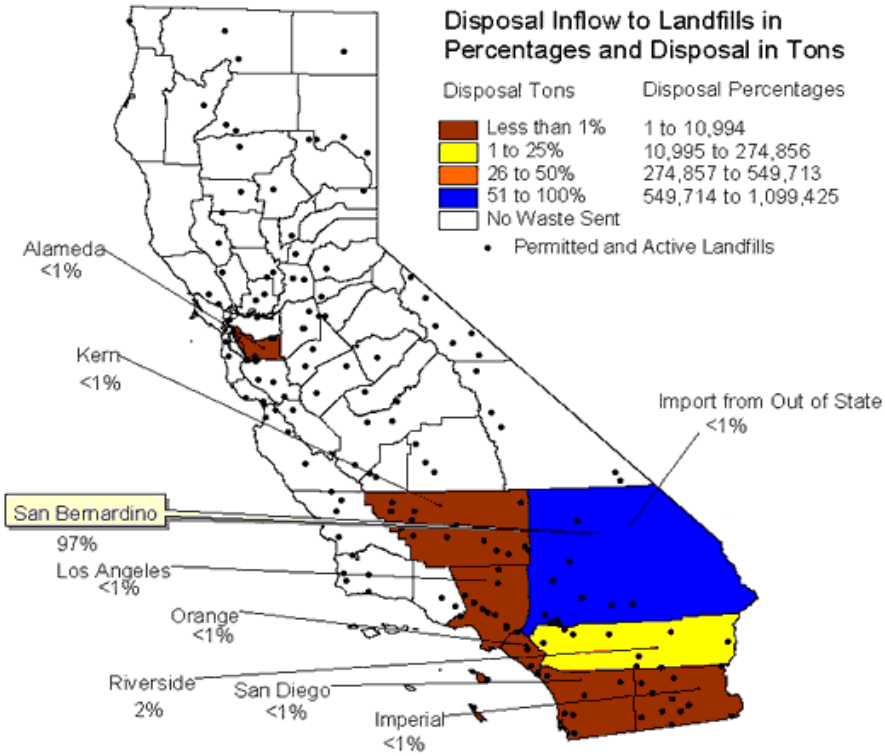
Figure 2-19 is the disposal outflow destination map for San Bernardino County. It shows the total amount and percentages of waste from San Bernardino County disposed within its boundaries, in other counties, and/or exported out of state. Figure 2-20 is the disposal inflow destination map for San Bernardino County. It shows the total amount and percentages of waste San Bernardino County received within its boundaries from other counties, and/or imported from out of the state. Table 2-50 summarizes the waste inflow and outflow percentages for San Bernardino County.

Figure 2-19. Waste Outflow, San Bernardino County



Source: www.ciwmb.ca.gov/LGCentral/Summaries/36/2000/Outflow.htm

Figure 2-20. Waste Inflow, San Bernardino County



Source: www.ciwmb.ca.gov/LGCentral/Summaries/36/2000/Inflow.htm

Table 2-50. Waste Inflow and Outflow, San Bernardino County

	Inflow to San Bernardino County (% of Total Received) (1)	Outflow from San Bernardino County (% of Total Disposed) (2)
San Bernardino	97	60
Los Angeles	<1	4
Orange	<1	13
Riverside	2	23
Ventura	-	<1
San Diego	<1	-
Imperial	<1	-
Alameda	<1	-
Kern	<1	<1
King	-	<1
Out of State	<1	<1
	100	100

Notes: (1) This columns refers to the origin of solid waste that goes to land fills in the County. Example: 97% means that 97 % of the waste received by landfills in the County come from sources in the County.

(2) This column refers to where solid waste produced in the County goes. Example: 60% of the County waste stays in the County, 4% goes to Los Angeles County, 13% goes to Orange County, 23% goes to Riverside County, <1% goes to Ventura, Kern and King counties each, and <1% also goes out of state.

Source: California Integrated Waste Management Board (www.ciwmb.ca.gov)

Table 2-51 shows the waste generation and disposal trend for San Bernardino County. Over the past eight years the amount of waste disposed in the county as a percentage of the total waste produced has decreased. In 1995, 86 percent of total waste produced in the County was disposed of within the County, whereas, in 2002, 72 percent of the total waste produced in the County was also disposed of within the County.

Table 2-51. Solid Waste Disposal Trend 1995-2002, San Bernardino County

Year	Total Waste Produced	Total Waste Disposed	%	In-State Disposal	Exported Out-of-State	%
1995	1,634,484	1,406,397	86.05	1,628,696	5,788	0.4
1996	1,662,884	1,373,608	82.60	1,657,569	5,316	0.3
1997	1,614,192	1,362,641	84.42	1,607,678	6,514	0.4
1998	1,691,378	1,230,977	72.78	1,684,567	6,810	0.4
1999	1,688,062	1,033,066	61.20	1,682,080	5,981	0.4
2000	1,768,527	1,099,425	62.17	1,762,422	6,104	0.3
2001	1,895,484	1,188,700	62.71	1,888,590	6,894	0.4
2002	1,937,805	1,412,050	72.87	1,931,579	6,226	0.3

Source: California Integrated Waste Management Board (www.ciwmb.ca.gov)

Quantities of Waste

Table 2-52 provides the amount of total waste generated in each of the 25 jurisdictions within San Bernardino County. Waste generated from almost all the jurisdictions is disposed of within the state, except the City of Needles and some parts of the unincorporated San Bernardino County. In 1990, statewide, the per capita (pounds per person per day or "ppd") waste generated was 8 ppd, while the countywide per capita waste generation was 10.8 ppd, about 35 percent higher than the statewide average.[18]

Table 2-52. Quantities of Waste, 2002

	Jurisdiction of Origin	In-State Disposal	Exported Out-of-State	Total Disposal
1	Adelanto	17,462	0	17,462
2	Apple Valley	48,424	0	48,424
3	Barstow	24,540	0	24,540
4	Big Bear Lake	18,790	0	18,790
5	Chino	96,126	0	96,126
6	Chino Hills	37,761	0	37,761
7	Colton	66,672	0	66,672
8	Fontana	142,171	0	142,171
9	Grand Terrace	8,966	0	8,966
10	Hesperia	50,784	0	50,784
11	Highland	32,841	0	32,841
12	Loma Linda	19,407	0	19,407
13	Montclair	35,523	0	35,523
14	Needles	63	5,574	5,637
15	Ontario	276,988	0	276,988
16	Rancho Cucamonga	150,782	0	150,782
17	Redlands	71,548	0	71,548
18	Rialto	87,540	0	87,540
19	San Bernardino	207,285	0	207,285
20	San Bernardino - Unincorporated	323,283	652	323,935
21	Twentynine Palms	21,131	0	21,131
22	Upland	65,292	0	65,292
23	Victorville	78,480	0	78,480
24	Yucaipa	31,628	0	31,628
25	Yucca Valley	18,091	0	18,091
	Total	1,931,579	6,226	1,937,805

Source: California Integrated Waste Management Board (www.ciwmb.ca.gov)

Disposal and Non Disposal Sites

The California Integrated Waste Management Board (CIWMB) is responsible for protecting public health and safety and the environment through management of the estimated 60 million tons of

[18] County of San Bernardino Department of Public Works Solid Waste Management Division, 2002,"San Bernardino County Five-Year CIWMP Review Report," pg.12

solid waste generated in California. The CIWMB works in partnership with local government, industry, and the public to reduce waste disposal and ensure environmentally safe landfills. The CIWMB maintains a Solid Waste Information System (SWIS) Database that contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database consist of both disposal and non disposal facilities including landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites. Appendix A presents a complete list of facilities listed by the CIWMB that are in San Bernardino County.

Permitted Disposal Facilities

Currently, San Bernardino County has 9 landfills located in the Valley and the Desert regions (6 of which are County-owned), and 21 transfer stations. All nine landfills and 13 transfer stations owned and operated by the County have drop-off sites for recyclable materials.

During the 1990s, several of the jurisdictions in the County were able to secure waste agreements at competing landfills in other counties through their hauler, and thus their waste was exported through transfer stations to landfills outside San Bernardino County. During the years 1993 to 2001, a significant amount of waste from several jurisdictions in San Bernardino County was disposed of in landfills in Orange and Riverside Counties. In 2000, the County re-bid the landfill operation contract for the County-owned system, and negotiated an agreement with the new contractor to return County-generated waste to the system. As a result, beginning in mid-2002, the majority of the jurisdictions in the County now dispose of their waste in County landfills.[19]

Table 2-53 enlists disposal sites in the County and their disposal capacities. Figure 2-21 shows all the landfill sites and transfer and processing sites in the County.

[19] County of San Bernardino Department of Public Works Solid Waste Management Division, 2002,"San Bernardino County Five-Year CIWMP Review Report," pg.20

Table 2-53. Disposal Facilities, San Bernardino County

Facility Name	Disposal Capacities	% of Total Disp. Cap.
Barstow Refuse Disposal Site	69,555	4.9
California Street Landfill	56,187	4.0
Colton Refuse Disposal Site	265,537	18.8
Fontana Refuse Disposal Site	535,832	37.9
Landers Disposal Site	54,338	3.8
Mitsubishi Cement Plant Cushenbury L.F.	406	0.0
Reserve Component Training Center	8,400	0.6
San Timoteo Solid Waste Disposal Site	168,018	11.9
USMC - 29 Palms Disposal Site	6,498	0.5
Victorville Refuse Disposal Site	247,280	17.5
Total	1,412,050	100

Source: California Integrated Waste Management Board

Figure 2-21. Land Fills and Transfer/Processing Sites

Permitted Disposal Capacity

As required by the Public Resources Code Section 41701, the County of San Bernardino continues to have disposal capacity available for solid waste generated but not diverted in excess of 15 years. Permitted disposal capacity is available at the Barstow, California Street, Colton, Fort Irwin, Landers, Marine Corps Air Ground Combat Center, Mid-Valley, San Timoteo and Victorville Landfills.[20]

Table 2-54 presents the remaining permitted capacity of solid waste as of December 31, 2001 and annual tons received in 2001. The total system-wide remaining refuse capacity is 48.2 million tons. Table 2-55 presents the projected refuse generation for disposal within the County over the next 15 years. Approximately 20.4 million tons of refuse for disposal is projected to be generated within the County during the 15-year planning period. As shown in Table 2-56, based on the remaining permitted refuse capacity and projected refuse generation for disposal, landfills in the County of San Bernardino have approximately 29 years of capacity.

Table 2-54. Countywide Landfill Capacity

Landfill Site	Remaining Permitted Disposal Capacity (Tons)	Planned Additional Disposal Capacity (Tons)	Annual Tons Received (2001)*
Barstow	390,088	26,007,393	85,396
California Street	178,654	4,600,000	51,983
Colton	886,030	None	242,771
Fort Irwin	5,521,912	None	10,120
Landers	634,767	None	54,462
MCAGCC	150,069	None	4,088
Mid-Valley	33,012,051	None	307,612
San Timoteo	6,416,129	None	123,060
Victorville	990,996	33,693,606	217,094
Totals	48,180,696	64,300,999	1,096,586

*Annual tons received in 2001 is based on actual 2000 disposal records

Source: Countywide Integrated Waste Management Plan Five-Year Review Report, October 2002

[20] County of San Bernardino Department of Public Works Solid Waste Management Division, 2002,"San Bernardino County Five-Year CIWMP Review Report," pg.20

Table 2-55. 15-Year Estimate of Refuse Generation for Disposal

	Year	Tons Disposed*	Cumulative Tons Disposed
1	2002	1,126,194	1,126,194
2	2003	1,156,601	2,282,795
3	2004	1,187,829	3,470,624
4	2005	1,219,901	4,690,525
5	2006	1,252,838	5,943,363
6	2007	1,286,665	7,230,028
7	2008	1,321,405	8,551,433
8	2009	1,357,083	9,908,516
9	2010	1,393,724	11,302,240
10	2011	1,431,354	12,733,594
11	2012	1,470,001	14,203,595
12	2013	1,509,691	15,713,286
13	2014	1,550,453	17,263,739
14	2015	1,592,315	18,856,054
15	2016	1,635,307	20,491,361
Estimated total tons disposed - 15 year period			20,491,361

* An annual growth rate of 2.7 percent is utilized based on growth projections by SANBAG

Source: Countywide Integrated Waste Management Plan Five-Year Review Report, October 2002

Table 2-56. Diminishing Capacity

	Year	Tons Disposed (1)	Cumulative Tons Disposed	Total Remaining Capacity (2)
	2001			48,180,707
1	2002	1,126,194	1,126,194	47,054,513
2	2003	1,156,601	2,282,795	45,897,912
3	2004	1,187,829	3,470,625	44,710,082
4	2005	1,219,901	4,690,526	43,490,181
5	2006	1,252,838	5,943,364	42,237,343
6	2007	1,286,665	7,230,029	40,950,678
7	2008	1,321,405	8,551,433	39,629,274
8	2009	1,357,083	9,908,516	38,272,191
9	2010	1,393,724	11,302,240	36,878,467
10	2011	1,431,354	12,733,594	35,447,113
11	2012	1,470,001	14,203,596	33,977,111
12	2013	1,509,691	15,713,287	32,467,420
13	2014	1,550,453	17,263,739	30,916,968
14	2015	1,592,315	18,856,054	29,324,653
15	2016	1,635,307	20,491,362	27,689,345
16	2017	1,679,461	22,170,823	26,009,884
17	2018	1,724,806	23,895,629	24,285,078
18	2019	1,771,376	25,667,005	22,513,702
19	2020	1,819,203	27,486,208	20,694,499
20	2021	1,868,322	29,354,529	18,826,178
21	2022	1,918,766	31,273,296	16,907,411
22	2023	1,970,573	33,243,869	14,936,838
23	2024	2,023,778	35,267,647	12,913,060
24	2025	2,078,420	37,346,068	10,834,639
25	2026	2,134,538	39,480,606	8,700,101
26	2027	2,192,170	41,672,776	6,507,931
27	2028	2,251,359	43,924,135	4,256,572
28	2029	2,312,146	46,236,280	1,944,427
29	2030	1,944,427	48,180,707	0
Total Systemwide Site Life				28.8 Years

(1) An annual growth rate of 2.7 percent is utilized based on growth projections by SANBAG

(2) Total Systemwide Capacity

Source: Countywide Integrated Waste Management Plan Five-Year Review Report, October 2002

Planned Disposal Capacity

The County of San Bernardino Solid Waste Management Division is currently working on the expansion of both the Barstow and Victorville Landfills. These landfill expansion projects will provide the County with an additional 59.7 million tons of solid waste disposal capacity (refer Table 2-54). All the necessary approvals for these expansion projects are expected to be obtained by 2008. Also, the city of Redlands is in the process of expanding the California Street Landfill by 4.6 million tons.

The combined effect of the additional disposal capacity from the Barstow and Victorville expansions, plus additional capacity from the expansion the City of Redlands has undertaken at the California Street Landfill, will give the County a minimum of 20 additional years of capacity beyond that shown in Table 2-56.[21]

Recycling Market Development Zones

The Recycling Market Development Zone program of CIWMB combines recycling with economic development to fuel new businesses, expand existing ones, create jobs, and divert waste from landfills. San Bernardino County has four Recycling Market Development Zones (RMDZ): the Agua Mansa Recycling Market Development Zone, the Chino Valley Recycling Market Development Zone, the Mojave Recycling Market Development Zone, and the San Bernardino County/Kaiser Recycling Market Development Zone. These RMDZs are briefly described below and more detailed information about each of the RMDZs is attached as Appendix B. Figure 2-22 shows the location of the four RMDZs.

Agua Mansa Recycling Market Development Zone

The Agua Mansa RMDZ is centrally located in the Western Riverside/San Bernardino County area. It is composed of a multi-jurisdictional team of San Bernardino and Riverside Counties and the cities of Colton, Rialto, and Riverside. This zone is also designated as an Enterprise Zone by the California State Department of Commerce.

Materials targeted within the RMDZ include mixed waste paper, glass, tires and rubber, plastic, yard waste, and inert solids (targeted for retention only). The goal of this RMDZ is to attract businesses that can process these materials within this zone. Incentives include tax credits, low-interest loans, and technical and marketing assistance. The zone designation for the Agua Mansa RMDZ expires in March 2003.

Chino Valley Recycling Market Development Zone

The Chino Valley RMDZ includes the industrial-zoned areas of the cities of Chino and Chino Hills, and is bordered by the counties of Riverside, Orange, and Los Angeles. This area is serviced by major highways and has ample industrial-zoned land. The Chino Valley RMDZ has targeted these materials for feedstock: plastics, wood, organics and yard waste, textiles, paper, and metal.

The Chino Valley RMDZ offers financial incentives, assistance with site selection, technical and general business assistance, and a streamlined permitting process to businesses in the zone. The zone designation for the Chino Valley RMDZ expires in March 2004.

[21] County of San Bernardino Department of Public Works Solid Waste Management Division, 2002,"San Bernardino County Five-Year CIWMP Review Report," pg.21

Figure 2-22. Recycling Market Development Zone (RMDZ)

Mojave Recycling Market Development Zone

The Mojave RMDZ includes the five high desert communities of Apple Valley, Barstow, Victorville, Twentynine Palms, and Yucca Valley. RMDZ activities are administered and coordinated by the Mojave Desert and Mountain Solid Waste Joint Powers Authority. The goal of the zone is to provide local and regional markets for diverted waste materials in the Mojave Desert. Targeted materials include recycled paper and compostables, glass, scrap tires, plastics, and inert solids.

Municipalities in the zone offer different incentives to attract business development, including permit assistance, no development fees, flexible air-quality and land-use standards, and even allow some businesses to operate outdoors. The zone designation for this RMDZ expires in May 2005.

San Bernardino County/Kaiser Recycling Market Development Zone

The San Bernardino/Kaiser RMDZ is a public/private partnership between San Bernardino County and Kaiser Resources, Inc. The RMDZ comprises all unincorporated areas of San Bernardino County often referred to as Fontana and is located in the West San Bernardino Valley. The RMDZ includes the former Kaiser Fontana Steel Mill. Parts of this RMDZ overlap with the Kaiser Commerce Center Specific Plan planning areas and the San Sevaine Redevelopment Project Area (refer section 1.3.7 of the Land Use Background Report). Targeted materials identified include newspaper, high grade and mixed paper, yard waste, metal, tires, and wood. Marketing, financing, and permitting assistance is available for new and expanding businesses within the RMDZ. The zone designation for the San Bernardino County/Kaiser RMDZ expires in March 2005.

County of San Bernardino Solid Waste Management Division

The County of San Bernardino Solid Waste Management Division (SWMD) is responsible for the operation and management of the County of San Bernardino's solid waste disposal system, which consists of six regional landfills, eight transfer stations and five community collection centers. The County contracts with Burrtec Waste Industries for disposal site operations and maintenance. The County is responsible for solid waste management in the unincorporated county areas.

The County has following waste disposal sites in the three regions:

1. Desert

High Desert

Apple Valley Community Collection Center
Baker Community Collection Center
Barstow Landfill
Daggett/Silver Valley Community Collection Center
Hesperia Community Collection Center
Lucerne Valley (Camp Rock) Transfer Station
Newberry Springs Transfer Station
Phelan (Sheep Creek) Transfer Station
Trona Argus Transfer Station
Victorville Landfill

Yermo Community Collection Center

East Desert

Landers Landfill
Trail's End Transfer Station
29 Palms Transfer Station

2. Mountain

Big Bear Transfer Station
Heaps Peak Transfer Station

3. Valley

Colton Landfill
Mid-Valley Landfill
San Timoteo Landfill

In addition, the Division administers the County's solid waste handling franchise program and the refuse collection permit program which authorizes and regulates trash collection by private haulers in the unincorporated area. Table 2-57 shows the waste haulers for unincorporated communities in the County:

Table 2-57. Waste Haulers for Unincorporated Communities

	Unincorporated Community	Hauler
Valley Region	*Redlands - Mentone - Angeles Oaks	Empire Disposal
	*Devore North Del Rosa East Highland	Jack's Disposal
	*Grand Terrace, Loma Linda	USA/Waste Management
	*Muscoy, San Bernardino	Cal Disposal Co
	*North Rialto	Burrtec Waste Industries
Mountain Region	Crestline/Running Springs/Lake Arrowhead	Mountain Disposal
	Barton Flats/Angeles Oaks/Forest Falls	Empire Disposal
	Big Bear	Big Bear Disposal
	*Wrightwood	CR&R
Desert Region	Unincorporated Community	Hauler
	*Hesperia area	Advance Disposal
	*Boron, Kramer Junction Trona	Benz Sanitation
	*Phelan, Pinion Hills	CR&R
	*Yucca Valley, Joshua Tree	Waste Management of the Desert
	*Apple Valley, Victorville, Adelanto Silver Lakes Lucerne Valley, Landers	AVCO
	Twentynine Palms	Sierra Environmental
	Yermo, Newberry Springs	Silver Valley Disposal

Source: www.co.san-bernardino.ca.us/wsd
* denotes communities that receive franchised collection service

2.3.2.6 LAW ENFORCEMENT

This section describes the incidence of crime in the County of San Bernardino, the existing law enforcement conditions, and the current law enforcement services available to combat the crime (see Figure 2-24A through Figure 2-24C). Primary data sources for this section were the San Bernardino County Sheriff's Department, Fedstats (official statistical information source for more than 100 Federal agencies), and the California Department of Justice.

The San Bernardino County Sheriff's Department, in collaboration with various cities and other agencies having jurisdiction in the County, provides law enforcement services to the incorporated and the unincorporated communities in the County. Many cities have contracted police protection services to the County Sheriff's Department. Table 2-58 presents crime statistics summary from the FBI Crime Index, and the California Crime Index for the County of San Bernardino. These statistics show that from 1992 to 2001 the numbers of incidents have decreased by more than 35,000 annually, a reduction of 34 percent. However, the pattern of crimes remains unchanged over the years with the majority of crimes throughout the County being property crimes and larceny theft, followed by incidents of violent crimes and arson (Source: California Department of Justice).

Table 2-58. FBI Crime Index and California Crime Index, San Bernardino County

Category/Crime	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Crimes										
FBI Crime Index	106,055.0	108,006.0	107,550.0	100,891.0	90,371.0	83,632.0	74,389.0	65,961.0	65,864.0	70,320.0
California Crime Index (CCI)	59,911.0	62,068.0	61,316.0	57,489.0	50,059.0	46,074.0	39,683.0	32,995.0	33,851.0	36,310.0
Violent Crimes	17,182.0	16,650.0	14,879.0	14,591.0	12,622.0	11,254.0	9,819.0	8,998.0	9,170.0	10,048.0
Property Crimes	42,729.0	45,418.0	46,437.0	42,898.0	37,437.0	34,820.0	29,864.0	23,997.0	24,681.0	26,262.0
Larceny Theft	45,408.0	45,319.0	45,484.0	42,665.0	39,520.0	36,840.0	34,010.0	32,295.0	31,325.0	33,239.0
Arson	736.0	619.0	750.0	737.0	7,921.0	718.0	696.0	671.0	688.0	771.0
Crime Rates (Per 100,000 Pop)										
FBI Crime Index	6,892.5	6,854.9	6,687.2	6,379.0	5,674.4	5,171.1	4,519.9	3,938.7	3,780.3	3,981.7
California Crime Index (CCI)	3,893.6	3,939.3	3,812.5	3,634.9	3,143.2	2,848.8	2,411.2	1,970.2	1,942.9	2,055.9
Violent Crimes	1,116.7	1,056.7	925.1	922.5	792.5	695.9	596.6	537.3	526.3	568.9
Property Crimes	2,777.0	2,882.6	2,887.3	2,712.3	2,350.7	2,153.0	1,814.6	1,432.9	1,416.6	1,487.0
Larceny Theft	2,951.1	2,876.3	2,828.1	2,697.6	2,481.5	2,277.9	2,066.5	1,928.4	1,797.9	1,882.1
Arson	47.8	39.3	46.6	46.6	49.7	44.4	42.3	40.1	39.5	43.7

Source: California Department of Justice (http://caag.state.ca.us/cjsc/)

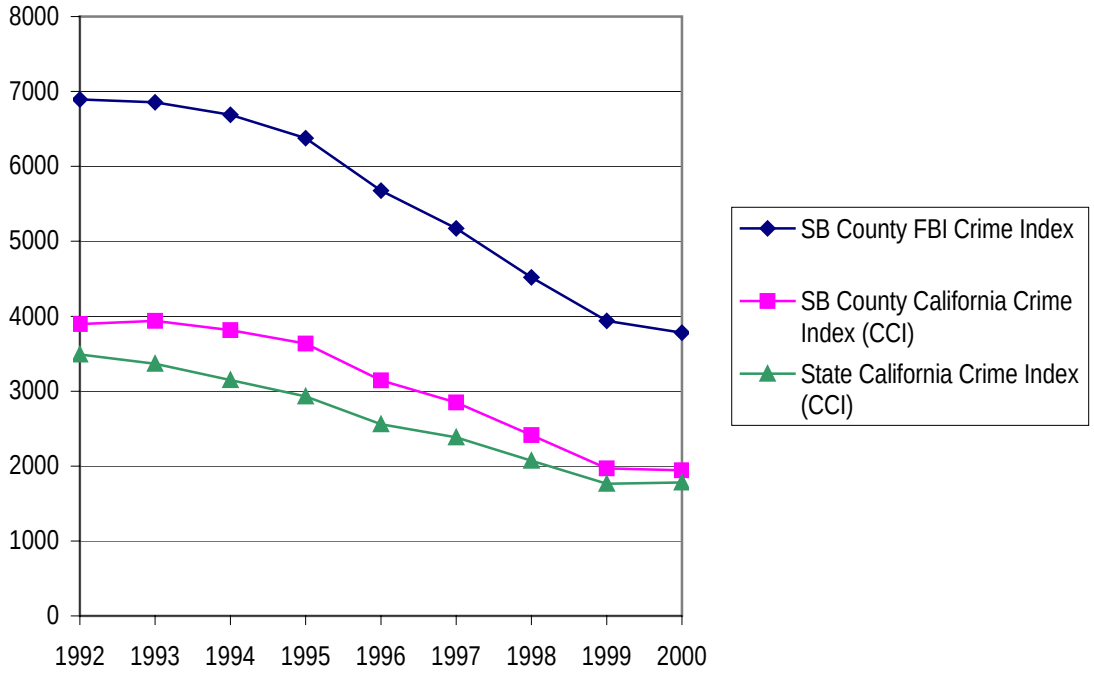
Table 2-59. FBI Crime Index and California Crime Index, San Bernardino County

Category/Crime	2000	%
Crimes		
FBI Crime Index	65,864.0	100.00
California Crime Index (CCI)	33,851.0	
Violent Crimes	9,170.0	13.92
Property Crimes	24,681.0	37.47
Larceny Theft	31,325.0	47.56
Arson	688.0	1.04
Crime Rates (Per 100,000 Pop)		
FBI Crime Index	3,780.3	
California Crime Index (CCI)	1,942.9	
Violent Crimes	526.3	
Property Crimes	1,416.6	
Larceny Theft	1,797.9	
Arson	39.5	

Source: California Department of Justice (http://caag.state.ca.us/cjsc/)

Figure 2-23 compares the County- California Crime Index with the State of California Crime Index to demonstrate that crime rate for San Bernardino County has reduced considerably from 1992 to 2000. Figure 2-19 further purports County has a higher crime rate than that of the state.

Figure 2-23. FBI Crime Index and California Crime Index, San Bernardino County and California



Source: California Department of Justice (http://caag.state.ca.us/cjsc/)

Data from the California Department of Justice (Table 2-60) show there were a total of 6,303 criminal justice personnel in San Bernardino County in 2001. Of the total of 6,303 criminal justice personnel, more than 4,500 personnel were employed specifically in law enforcement positions. These statistics report that the number of personnel in the criminal justice system has increased steadily from 1992 to 2001.

Table 2-60. Criminal Justice Full-time Personnel, San Bernardino County

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Law Enforcement	3,658	3,294	3,286	3,559	3,803	3,931	4,062	4,351	4,400	4,518
Sworn	2,338	2,316	1,993	2,234	2,317	2,416	2,457	2,655	2,664	2,770
Civilian	1,320	978	1,293	1,325	1,486	1,515	1,605	1,696	1,736	1,748
Police Dept	1,557	1,667	1,595	1,627	1,652	1,646	1,652	1,668	1,709	1,688
Sworn	1,033	1,121	1,071	1,094	1,111	1,142	1,131	1,159	1,158	1,139
Civilian	524	546	524	533	541	504	521	509	551	549
Sheriff's Dept	2,087	1,612	1,676	1,920	2,133	2,184	2,310	2,574	2,567	2,706
Sworn	1,295	1,186	912	1,128	1,193	1,227	1,279	1,443	1,454	1,575
Civilian	792	426	764	792	940	957	1,031	1,131	1,113	1,131
Other	14	15	15	12	18	101	100	109	124	124
Sworn	10	9	10	12	13	47	47	53	52	56
Civilian	4	6	5	0	5	54	53	56	72	68
Prosecution	460	403	792	665	576	657	712	740	1,060	411
Attorneys	133	119	120	157	158	166	171	194	209	189
Investigators	24	10	13	25	27	25	41	50	73	40
Clerical	202	166	225	279	242	266	284	296	397	135
Other	101	108	434	204	149	200	216	200	381	47
Public Defense	111	105	103	102	149	157	157	131	153	169
Attorneys	66	66	66	64	81	84	84	87	88	94
Investigators	9	8	9	9	17	23	23	10	17	21
Clerical	31	27	24	25	45	44	44	31	41	47
Other	5	4	4	4	6	6	6	3	7	7
Courts	66	68	72	68	68	70	70	70	70	74
Judges	58	58	62	58	58	60	60	60	60	63
Auxiliary	8	10	10	10	10	10	10	10	10	11
Custody/Supervision	646	653	634	597	616	748	801	851	903	1,131
Probation Dept	646	653	634	597	616	748	801	851	903	1,131
Prob Officers	208	215	211	220	232	257	280	293	314	390
Other	438	438	423	377	384	491	521	558	589	741
Grand Total	4,941	4,523	4,887	4,991	5,212	5,563	5,802	6,143	6,586	6,303

Source: California Department of Justice (http://caag.state.ca.us/cjsc/)

The personnel of the San Bernardino Sheriff's Department provide law enforcement services to the County's citizens through the 24 patrol stations, as summarized below in Table 2-61 and 13 specific divisions including an Aviation Division headquartered at Rialto Airport.

Table 2-61. San Bernardino County Sheriff's Department Patrol Stations

	Station	Details
1	Adelanto Police Department	Contract with County Sheriff's Department since 2002 Population Served - 18,130 Strength – 23 Officers
2	Apple Valley Police Department	Contract with County Sheriff's Department since 1988 Strength – 38 Officers
3	Barstow Station	Communities Served - Baker, Daggett, Hinkley, Lenwood, Ludlow, Newberry Springs, Sandy Valley, Yermo, Red Mountain, and Trona Substations – Baker and Trona Service Area - 10,000 square miles
4	Big Bear Lake Police Department	Communities Served – City of Big Bear Lake Population Served – 6,500 Visitor Population _ 100,000
5	Big Bear Station	Communities Served – Bear Valley and the City of Big Bear Lake
6	Central Station	Communities Served - Unincorporated areas of the San Bernardino Central Valley, and the cities of Grand Terrace and Loma Linda Population Served – 75,000 Visitor Population – 300,000 annually
7	Chino Hills Police Department	Contract with County Sheriff's Department since 1991 Communities Served – City of Chino Hills Population Served – 70,000
8	Chino Hills Station	Communities Served - Unincorporated areas of Upland, Montclair, Ontario and Chino (the station interfaces with Los Angeles, Orange and Riverside counties) Service Area - 300 square miles
9	Colorado River Station	Communities served - City of Needles Substations - Big River and Parker Dam, Havasu Landing, and Park Moabi Regional Park
10	Fontana Station	Population served - 62,000 people Service Area - 89 square miles
11	Grand Terrace Police Department	Population Served - 14,000 Strength – 18
12	Hesperia Police Department	Contract with County Sheriff's Department Population Served- 63,000
13	Highland Police Department	Contract with County Sheriff's Department Population Served - 45,000 people Service Area - 18 square mile
14	Loma Linda Police Department	Contract with County Sheriff's Department Population Served - 22,000 people
15	Morongo Basin Station	N/A
16	Needles Police Department	Contract with County Sheriff's Department since December, 1989

	Station	Details
17	Rancho Cucamonga Police Department	Contract with County Sheriff's Department Population Served - 125,585 people. Strength - 131 Service Area - 38 square miles.
18	Twentynine Palms Police Department	Contract with County Sheriff's Department since July, 1988 Strength - 13
19	Twin Peaks Station	Population - 35,000 Visitor Population - 85,000 Strength – 30d
20	Victor Valley Station	Communities Served - Helendale, Oro Grande, Silver Lakes, El Mirage and Spring Valley Lake, as well as the unincorporated areas of the Victor Valley High Desert area not serviced by the cities of Adelanto, Hesperia, Victorville, and the town of Apple Valley. Population Served – 56,720 Strength – 23
21	Victorville Police Department	Contract with County Sheriff's Department Population - 65,000 Service Area - 99 square miles Strength – 71
22	Yucaipa Police Department	Contract with County Sheriff's Department
23	Yucaipa Station	Communities Served - Mentone, Oak Glen, Mountain Home Village, Forest Falls, Angelus Oaks, Barton Flats and the City of Yucaipa
24	Yucca Valley Police Department	Contract with County Sheriff's Department since 1992

Source: San Bernardino County Sheriff's Department

The San Bernardino Sheriff's Department maintains three correctional facilities, the West Valley Detention Center in Rancho Cucamonga; the Glen Helen Rehabilitation Center, a two-unit, male and female-inmate facility in Devore; and, the Central Rehabilitation Center that houses federal inmates for the United States Marshall Service located in the city of San Bernardino. Additionally, the County of San Bernardino has 11 Superior Court jurisdictions, including:

- Barstow
- Big Bear
- Chino
- Fontana
- Joshua Tree
- Juvenile Courts (Rancho Cucamonga and San Bernardino)
- Needles
- Rancho Cucamonga
- Redlands
- San Bernardino
- Twin Peaks

- Victorville

The County of San Bernardino Superior Court has jurisdiction over misdemeanor and felony criminal charges. Each of these locations extend their schedules to provide Night Court to the County's citizens (Source: San Bernardino County Sheriff's Department).

Table 2-62 summarizes the total criminal justice expenditure by fiscal year for San Bernardino County. In 2001, the County spent more than 50 percent of the total expenditure ($327,620 of $588,283) on law enforcement services. Over the decade, the expenditure on law enforcement has increased by approximately 36 percent.

Table 2-62. Criminal Justice Fiscal Year Expenditures, San Bernardino County

	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00
Law Enforcement	$240,330	$250,807	$260,607	$273,532	$290,986	$301,205	$319,749	$329,196	$327,620
Police Dept	$151,591	$164,816	$177,987	$177,416	$189,447	$192,184	$198,889	$205,547	$198,116
Sheriff's Dept	$88,739	$85,991	$82,620	$96,116	$101,539	$109,021	$120,860	$123,649	$129,504
Prosecution	$23,595	$24,590	$26,121	$30,120	$36,555	$46,965	$43,045	$51,793	$58,704
Public Defense	$14,712	$14,850	$15,400	$17,077	$17,234	$18,398	$20,410	$21,623	$21,917
Judicial	$57,680	$22,728	$49,630	$53,894	$53,089	$56,228	$54,011	$51,435	$50,520
Custody/Supervision	$86,749	$83,135	$81,725	$77,124	$79,572	$87,113	$93,635	$108,244	$129,522
Grand Total	$423,066	$396,110	$433,483	$451,747	$477,436	$509,909	$530,850	$562,291	$588,283

Source: California Department of Justice (http://caag.state.ca.us/cjsc/)

Figure 2-24A. Law Enforcement – Valley Region

Figure 2-24B. Law Enforcement – Mountain Region

Figure 2-24C. Law Enforcement – Desert Region

2.3.2.7 FIRE PROTECTION[22]

This section discusses fire protection facilities and where new or additional facilities, and expansion, renovation, and modernization of existing facilities are anticipated. Fire Department services are described in the Safety Element.

California Department of Forestry

During the early 1930s, the California Department of Forestry (State) and the County of San Bernardino (Fire Department) jointly operated from four different locations in San Bernardino, Yucaipa, Alta Loma, and Summit Lookout. In 1936, the County of San Bernardino's first fire stations were built in Yucaipa, Etiwanda, and headquarters in San Bernardino. Since then, the San Bernardino Headquarters has been expanded and modernized, Yucaipa has moved to a new site, while Etiwanda remains in the same location. During the years of World War II, four fire stations were added to the County's number of fire stations. The Loma Linda and San Antonio Heights stations were built, the Highland station was leased, and Mentone was opened. By 1953, State-funded fire stations were constructed across the Desert Planning area: Hesperia in 1953, Yucca Valley in 1962, and Lucerne Valley in 1965.

The California Department of Forestry has 12 fire stations located at the following locations:

- Chino
- Chino Hills
- Crestline
- Devore
- Hesperia
- Highland (Station 541 and 542)
- Lucerne Valley
- Phelan
- Yucaipa (Crafton Hills and Station 551)
- Yucca Valley

County of San Bernardino Fire Department

From the early days of the State and County of San Bernardino Fire Department jointly operating from only a few stations, the County of San Bernardino's fire protection facility numbers have grown to 63 fire stations. Today, the San Bernardino County Fire Department provides services through these 63 fire stations located throughout the four divisions of the department: Mountain, North Desert, South Desert, and Valley Division, as shown in Table 2-63:

[22] More details on fire protection can be found in the Fire Hazard Section of the Safety Background Report.

Table 2-63. San Bernardino County Fire Department Divisions

Mountain Division	District	3rd
	Square Mileage	682
	Population Served	18,900
	Fire Stations	10
	Communities Served: Angelus Oaks, Blue Jay, Cedar Glen, Crest Park, Fawnskin, Forest Falls, Green Valley Lake, Lake Arrowhead, Mentone, Mountain Home Village, Sky Forest, Twin Peaks	
North Desert Division	District	1st
	Square Mileage	10,884
	Population Served	150,000
	Fire Stations	23
	Communities Served: Baker, Baldy Mesa, El Mirage, Harvard, Helendale, Hinkley, Lucerne Valley, Mt. View Acres, Oak Hills, Oro Grande, Phelan, Pinon Hills, Red Mountain, Searles Valley, Spring Valley Lake, Summit Valley, Windy Acres, Wrightwood; Cities Served: Adelanto	
South Desert Division	District	1st 3rd
	Square Mileage	7,968
	Population Served	49,648
	Fire Stations	17
	Communities Served: Big River, Earp, Havasu Landing, Johnson Valley, Joshua Tree, Landers, Pioneer Town, Wonder Valley; Cities Served: Needles, Yucca Valley	
Valley Division	District	2nd 5th
	Square Mileage	572
	Population Served	155,850
	Fire Stations	13
	Communities Served: Bloomington, Devore, Lytle Creek, Mt. Baldy, Muscoy, San Antonio Heights; Cities Served: Fontana, Grand Terrace	

Source:www.sbcfire.org

Figure 2-25A through Figure 2-25C show location of County as well as non-County fire stations within the three planning regions: Valley, Mountain, and Desert.

Fire Districts and County Service Areas (CSAs)

The following tables are a listing of the six County governed fire protection districts and 24 CSAs with fire protection authority. These help makeup the overall County fire districts.

Fire Protection Districts

1	Central Valley Fire Protection District
2	Forest Falls Fire Protection District
3	Lake Arrowhead Fire Protection District
4	Monte Vista Fire Protection District
5	San Bernardino County Consolidated Fire District 70
6	Yucca Valley Fire Protection District

County Service Areas

	County Service Areas (CSA)
1	CSA 20 (Joshua Tree)
2	CSA 29 (Lucerne Valley)
3	CSA 30 (Red Mountain) (Contract with Kern County)
4	CSA 38 (Consolidated Fire Service)
5	CSA 38-D (Victorville)
6	CSA 38-H (Colton)
7	CSA 38-J (Big River)
8	CSA 38-K (Spring Valley Lake)
9	CSA 38-L (Highland – Paramedic)
10	CSA 38-M (Yucaipa – Paramedic)
11	CSA 38-N (El Mirage)
12	CSA 53 (Big Bear)
13	CSA 53-B (Fawnskin)
14	CSA 56 (Wrightwood)
15	CSA 56 F-1 (Pinon Hills)
16	CSA 70 (Countywide)
17	CSA 70 FP-1 (Windy Acres)
18	CSA 70 – HI (Havasu Lake)
19	CSA 70 - M (Wonder Valley)
20	CSA 70 – PM1 (Lake Arrowhead – Paramedics)
21	CSA 70 – W (Hinkley)
22	CSA 79 (Green Valley Lake)
23	CSA 82 (Searles Valley)

Figure 2-25A. Fire Stations – Valley Region

Figure 2-25B. Fire Stations – Mountain Region

Figure 2-25C. Fire Stations – Desert Region

Independent Fire Departments

Additionally, nearly 25 other fire departments and fire protection districts serve other unincorporated County areas and cities. These facilities are provided in the unincorporated areas of the County via numerous Community Service Districts, Fire Protection Districts.

Community Service Districts (Independent)

1	Baker Community Service District
2	Big Bear City Community Service District
3	Daggett Community Service District
4	Morongo Valley Community Service District
5	Newberry Springs Community Service District
6	Yermo Community Service District

Fire Protection Districts (Independent)

1	Apple Valley Fire Protection District
2	Barstow Fire Protection District
3	Big Bear Lake Fire Protection District
4	Chino Valley Independent Fire District
5	Crest Forest Fire Protection District
6	Hesperia Fire Protection District
7	Rancho Cucamonga Fire Protection District
8	Victorville Fire Protection District

City Fire Departments

1	Colton
2	Highland
3	Loma Linda
4	Montclair
5	Ontario
6	Redlands
7	Rialto
8	San Bernardino
9	Twentynine Palms
10	Upland
11	Yucaipa

Future Fire Protection Facilities

The Fire Department currently has eight fire stations either funded and under construction, or pending funding and approval. Three new fire stations are currently in the development stage:

- Fontana San Savine Redevelopment Station #79;
- Fontana Hunters Ridge Stations #80; and,
- Lytle Creek Central Valley FPD Station #81.

The Muscoy Central Valley FPD Station #75 is a new Fire Department station under construction. It will replace the existing Muscoy station. Community of Baker Station #53 and Community of Oak Hills Station #40, are currently pending approval of funding for a new fire station facility and remodeling/replacement of the existing facility, respectively. An I-40 Corridor Ludlow/Amboy fire station is currently in the planning phase, with no property or funds currently acquired. Additionally, the Phelan/Wrightwood/Pinion Hills fire station also has plans to replace the existing fire station, but no property or funds have been acquired.

2.3.2.8 NATURAL GAS

This section depicts the general characteristics of the existing natural gas system in the county. It also describes the proposed natural gas projects in the County. Data for this section was collected from the California Public Utilities Commission, the California Energy Commission, Southern California Gas Company, Kern River Gas Transmission Company, and other major oil and natural gas providers in the County.

Electricity generation has driven the demand for natural gas throughout California. Due to County's very limited fossil fuel resources, and to accommodate the increasing demand for natural resources from within the growing County, other suppliers must import the majority of natural gas, gasoline and oil. Interstate pipelines transport natural gas from the Southwest, Rocky Mountains, and Canada.

The Southern California Gas Company (SCG) provides natural gas service to the Valley area, the Morongo Basin, and portions of the Mountains area. According to SCG, the service provider supplied approximately six percent more gas over the past ten years, mostly from an increase in demand from industrial users within the County. Southwest Gas Corporation (Southwest) provides natural gas service to the High Desert area, Victor Valley, Barstow, portions of the North Desert area, and the Bear Valley communities. Southwest reports natural gas supplied to the County increased by approximately 50 percent from 1993 to 2002, mostly from an increase in demand from the transportation sector.

Figure 2-26 shows that SCG, PG&E, Kern River, Mojave, and Kern Mojave are the major natural gas pipelines serving the San Bernardino County, although SCG provides the natural gas services to San Bernardino County. The figure also shows the service areas of the major gas pipelines.

Figure 2-26. Natural Gas Pipelines and Service Areas

Proposed Projects

Increased drilling activity in Northern California, the availability of supplies from the Elk Hills reserve in Kern County, and expansion of the Kern River pipeline from the Rocky Mountains, have increased prospects for California production and pipeline capacity. Small amounts of oil and natural gas are produced from two oil field located the County of San Bernardino, in the Chino Hills and Prado Basin areas. The quantities represented by the Chino-Soquel and Mahala Oil Fields, however, represent an insignificant portion of the total production in California, in particular the County of San Bernardino. Additionally, there are no refineries located in the County.

Appendix C illustrates the natural gas infrastructure projects completed since 2001 and the pending natural gas infrastructure projects in California. This data shows that projects completed in San Bernardino County since 2001 have added a capacity of 532 million cubic feet per day (MMcf/d). Eleven statewide projects are pending and are scheduled to complete between 2004 and 2008. Estimates for natural gas consumption and capacity are not available for San Bernardino County; however, these estimates are available for the entire state.

2.3.2.9 ELECTRICITY

This section describes the existing electricity system, electricity consumption, and the type of electricity customers in San Bernardino County. Data was collected from the California Public Utilities Commission, California Energy Commission, Southern California Edison (SCE), Bear Valley Electric Service, Colton Public Utilities, and the City of Needles.

The Legislature has passed various Senate Bills creating the Renewables Portfolio Standard (RPS) and adding further requirements, in order to respond to the impact the energy crisis had on renewable development and to further the expansion of renewable energy in the state. The RPS requires that certain retail sellers of electricity increase their sales of electricity from renewable energy by at least 1 percent per year achieving 20 percent by 2017 at the latest. Since passage of the bill, the Energy Action Plan establishes a target of 20 percent renewable energy by 2010. (CEC Renewable Resources Report, 2003)

Existing Power Resources

The most promising form of power resources are those from renewable energy sources. Over the past two decades, California has developed one of the largest and most diverse renewable generation industries in the world. In the year 2002, California had over 7,000 megawatts (MW) of renewable energy capacity, including solid-fuel biomass, geothermal, wind, small hydroelectric (30 MW or less), concentrating solar power (CSP), photovoltaic systems (PV), landfill gas, digester gas, and municipal solid waste (MSW) facilities. The California Energy Commission estimates that these facilities produced about 28,900 gigawatt-hours (GWh) in 2002, representing about 11 percent of the electricity used in California. (CEC Renewable Resources Report, 2003)

Currently, San Bernardino County is a corridor for seven kV transmission lines, five of which are owned by LADWP and two by SCE, to sources of generation in Nevada.

There are many power resources available to San Bernardino County including Wind, Geothermal, Biomass, Solar and LFG. Wind and solar are the two renewable energy resources identified by the CEC for San Bernardino County. A breakdown of current, proposed and technical potential for online GWh per year is provided in the following table.

Table 2-64. Potential Energy Sources

	Wind	Geothermal	Total Biomass	Other Biomass	LFG, Dairy and Swine and Sewage	Solar Thermal	Solar PV	Small Hydro	Biomass	Digestor Gas	LFG	MSW/Tire	Biofuel	Total
Existing	-	-	-	-	-	482	-	123	-	-	-	-	-	606
Proposed	279	-	139	11	129	263	-	-	11	-	129	-	-	681
Technical Potential*	5,812	489	368	270	99	52,871	627	15	-	-	-	-	-	60,182
Remaining Potential	5,533	489	259	259	-30	52,126	627	-108	-	-	-	-	-	59,033

* Source: California Energy Commission's Public Interest Energy Research (PIER) and the Regional Economic Research, Inc. (RER)

San Bernardino County is home to most of the CSP plants currently installed in California. These plants are located in one general area — the Southeast desert. The proposed concentrating solar power projects are also located in San Bernardino County. There are few other existing renewable sources of power in the County at this time, but there are many proposed projects.

Current Facilities

The following information is a list of the installed renewable capacity locations in San Bernardino County.

Renewable Capacity in San Bernardino County (MW) Total

	Biomass	Digestor gas	Geothermal	Hydro	Landfill gas	MSW	Solar	Wind	Total
San Bernardino County	-	-	-	40	-	-	204	-	244

The Hydroelectric Sites located in San Bernardino County include:

- San Bernardino MWD Sites 2100, 1913 and 1720
- WFA Station 1
- Ontario 2
- Sierra
- Lytle Creek
- Ontario 1
- Mill Creek 1
- Monte Vista WD
- Fontana
- Mill Creek 3
- Santa Ana 3
- Santa Ana 1Etiwanda

Solar

- SEGS I, II, IX and VIII (Sunray Energy Inc and Luz Solar Partners Ltd.)

RPS Requirements

Smaller investor-owned utilities may have difficulty meeting the statewide RPS requirement. The circumstances facing Bear Valley Electric Service (part of Southern California Water Company) provide an example. First, existing long-term commitments meet Bear Valley Electric's long-term energy needs. Second, 20 percent of retail sales for Bear Valley Electric is 3.5 MW. The utility believes that procuring an amount this small may be difficult. Third, Bear Valley Electric pays access charges for transmission. These charges have increased by more than 50 percent since 2002. Bear Valley believes that transmission projects associated with the RPS will further increase the access charges and argues that such projects should be weighed against cost effective alternatives to projects requiring upgrades to transmission. (Keith Switzer, Southern California Water Company, October 7, 2003, "Renewable Resources Development Report: Comments of Southern California Water Company." Filed with the California Energy Commission, Docket No. 02-REN-1038 and 02-IEP-1.)

Proposed Projects

According to the published documents, in San Bernardino County, the following projects are proposed as future power sources:

- Biomass Station - Chino
- Landfill gas - Colton (2 projects), Mid- Valley, Milliken, and MM San Bernardino Energy (Colton – 3 projects), Ontario and Rialto
- Solar Thermal – Daggett and Harper Lake
- Wind – San Bernardino and San Gorgonio

Specifics of these projects were not published.

Reviewing the potential sources for the County as shown in the *Potential Energy Source* table above, there are many more possible projects that could be developed which would provide efficient resources for the County. The CPUC published report entitled "Electric Transmission Plan for Renewable Resources in California," identifies the New "Mountain Pass 2" substation and the new 38-mile 115 kV transmission line between "Mountain Pass 2" and Eldorado, as transmission facilities that may be required to interconnect up to 50 MW of wind generation in the Mountain Pass area. Additionally, the CEC previously identified the prospective of a 24,500 MW of additional solar potential within San Bernardino County. The project has not yet been researched in depth to specify the exact scope of the potential, most likely the large solar facility will require an interstate DC transmission network and facilities

Existing Electricity Transmission System

Multiple entities are involved in each step of planning for adequate and reliable electricity. Under the Federal Energy Regulatory Commission (FERC), North American Energy Reliability Council (NERC), the Western Electricity Coordinating Council (WECC), and California State regulations, transmission systems must have sufficient capacity to maintain reliable and adequate service to customers. The reliability of the system must be maintained not only under normal conditions, when all lines are in service, but under contingencies, during routine line maintenance outages or line outages which cannot be predicted or controlled.

The major electricity service provider to San Bernardino County is the SCE which contains electrical facilities (both transmission lines and substations) owned by both SCE and LADWP. SCE is part of the Pacific Intertie system (Figure 2-27). The Pacific Intertie system generates electricity throughout ten western states and supplies electricity to the County, and distributes electricity generated by the County anywhere throughout the system. SCE provides electricity service to almost all of San Bernardino County, except for a few small pockets of County land. SCE's transmission system include 500 kV and 230 kV facilities that operate as a network and have been transferred to the ISO for operational control. Although a limited number of SCE's 115 kV, 66 kV, and 55 kV submission facilities also operate as a network and have been transferred to the ISO, most of these facilities are radial in nature and remain outside the ISO's operational control. Transmission and subtransmission lines feed into the distribution network serving businesses, homes, and other electric power consumers. The distribution facilities encompass lines below 55 kV. The 115-12 kV and 66-12kV substations provide a source for distribution lines and the smaller 12-4kV substations. The electric power is distributed from the substations to individual customers through 33 kV and lower voltage distribution lines.

There are two types of transmission substations located within San Bernardino County, those that are utility-owned (i.e. network facilities) and those who are owned by generation plants and whose function is to step up generated power to transmission-level voltages for interconnection into the utility-owned transmission network. The following table is a summary about existing SCE-owned facilities in San Bernardino County:

Existing SCE-Owned Facilities in San Bernardino County (greater than 200kV)

Substations	500-kV 220-kV	2 10
500-kV Transmission Lines	Number of Lines Circuit Miles (approximate)	9 575
220-kV Transmission Lines	Number of Lines Circuit Miles	27 920

"East of Lugo" Area

The electrical hub of SCE's transmission network in San Bernardino County is Lugo Substation, to which terminate a total of eight 500-kV and six 220-kV transmission lines. From this substation two 500-kV and two 220-kV transmission lines run east 177 miles to the El Dorado Substation in Nevada. These lines, which run parallel to five additional 500-kV lines owned by LADWP, provide access to generation resources in Nevada to help serve Los Angeles and San Bernardino County area loads.

"North of Lugo" Area

As mentioned above, the electrical hub of SCE's transmission network in San Bernardino County is Lugo Substation, to which terminate a total of eight 500-kV and six 220-kV transmission lines. From Lugo substation four 220-kV transmission lines run north to Victor and Kramer substations. These lines serve as the collection point for the extensive system of 55-kV lines that reach as far north as Mono county. This system provides access to generation resources in Mono, Inyo, and Kern Counties as well as northern and central San Bernardino County. This system also provides service to load in these areas.

Mira Loma Area (Southwestern San Bernardino County)

The existing Mira Loma substation is a substation to which terminates a total of three 500-kV and nine 220-kV transmission lines. The 500-kV lines are components of the network of 500-kV transmission facilities extending throughout Los Angeles, Orange, and San Bernardino counties.

The 220-kV lines are components of the extensive 220-kV network that helps serve the major load center located in the southwestern portion of San Bernardino county. The 220-kV lines also play a part in helping provide access to power generated both in Arizona and in northern Riverside County (for example, wind generation in the San Gorgonio Pass.)

The City of Needles, Bear Valley Electric Service, and the City of Colton are the electricity service providers to the pockets of County land SCE does not service (Figure 2-23). The City of Needles provides electricity service to more than 4,000 customers. Eighty-seven percent of these customers are residential, and the remaining 13 percent are non-residential. The City of Needles provides a total of more than 79,000 MWh of electricity to its customers. The Bear Valley Electric Service provides electric power to more than 20,000 customers in the communities surrounding Big Bear

Lake. These communities are City of Big Bear Lake, Big Bear City, Fawnskin, Erwin Lake, Moonridge, Sugarloaf, Lake Williams, Baldwin Lake, and Camp Radford.

Figure 2-27. Electric Utilities

The City of Colton provides electricity service to more than 17,500 customers. Eighty-eight percent of these customers are residential, while the remaining 12 percent are non residential. The City of Colton supplied approximately 299,000 MWh of electricity to its customers in the year 2001. Other electricity utilities for the County of San Bernardino include Southern California Water and Electric, the Los Angeles Department of Water and Power.

Transmission Additions

Transmission additions are required to accommodate San Bernardino County's renewable resource generation through 2017. To address the need for reliability and to support future growth, SCE has established a process of identifying electrical facilities and those needing renovation, that are researched in an expansion plan process, submitted to CAISO for approval. This is done through an annual review of SCE's Bulk Power (generally 230 kV and up) facilities, and by locating new energy facility sites based on their ability to maximize the benefits to the electrical system while minimizing their local impacts. According to a corporate real estate representative for SCE, typical substation acreage requirements, typical transmission right-of-way widths, and typical transmission tower/pole heights are as follows:

Typical Substation Sizes:	
500 kV Substation	80 acres
230 kV Substation	12 acres
115/66 kV Substation	2.5 acres
Distribution Substation	<2 acres

Typical Right-of-Way Widths	
500 kV R/W	200' wide
230 kV R/W	125' wide
115 kV R/W (single pole)	30' wide
115 kV R/W (H-frame)	75' wide
66 kV R/W (single pole)	25' wide
Less than 50 kV	10' wide

Typical Pole/Tower Heights	
Double Circuit 500 kV Tower	230' high
Single Circuit 500 kV Tower	140' high
Double Circuit 230 kV Tower	140' high
Single Circuit 230 kV Tower	100' high
66 and 115 kV poles	70'

According to SCE's Transmission & Interconnection Planning Group, the 2005-2017 expected additions and renovations consist of, but are not limited to:

- Rancho Vista: new "AA" Substation
  500 kV to 230 kV Substation located adjacent to the existing Etiwanda substation.
  Anticipated service date: 2009
- Etiwanda-Mira Loma: existing facility
  230 kV Reconductoring Project
  Anticipated completion date: June 2005.

SCE anticipates that the tremendous amount of current and anticipated growth in and around San Bernardino County may likely drive additional transmission needs beyond those included in the list.

Electricity Consumption and Customers

Rapid growth in the County of San Bernardino County has resulted in an increase in the demand for and development of energy services. Table 2-65 shows the electricity consumption for San Bernardino County in the year 2000. Residential customer accounts form approximately 90 percent of the customer base, while non-residential customers form the remaining 10 percent. However, non-residential customers consume 70 percent of the total supplied electricity and residential customers consume 30 percent of electricity.

Table 2-65. 2000 Electricity Consumption, San Bernardino County

Customer Type	Number of Accounts	%	Annual Average Kilowatt Hours (million)	%
Residential	547,654	89.1	3,774	31.8
Non-Residential	67,131	10.9	8,093	68.2
Total	614,785	100.0	11,867	100.0

Source: California Energy Commission, www.energy.ca.gov

Table 2-66 shows electricity sales by SCE in San Bernardino County in 2002. The majority of the sales are to commercial customers (43%) followed by residential (32%) and industrial (16%) customers.

Table 2-66. 2002 Electricity Sales in San Bernardino County by SCE

Customer Type	Annual Average Kilowatt Hours (million)	%
Residential	3,631,203,058	31.5
Agricultural	160,325,009	1.4
Commercial	4,928,015,558	42.7
Industrial	1,815,522,175	15.7
Other*	996,793,775	8.6
Total	11,531,859,575	100.0

* Includes industrial temporary construction, public authorities, public street and highway lighting, and railroads and railways

Source: Southern California Edison (conversation with SCE personnel)

Planned Infrastructure and Growth

SCE's Transmission Interconnection Plan provides long-term development goals for a 10-year projection. At the time of writing, the 2005 plan was near completion. Through correspondence with SCE staff, it is understood that there are several new transmission, sub-transmission and substation projects planned for SCE in San Bernardino County. Through correspondence with SCE staff, it is understood that there may be only one new project, Rancho Vista: new "AA" Substation, for SCE in San Bernardino County. Other proposed projects will focus on existing substations and transmission sites.

In the planning process, identifying needs for facilities includes connecting new generation and increasing reliability as well as serving the growing electrical demand. Additionally, identifying electrical alternatives to meet generation need starts with changes to the existing substations and lines. Evaluation of electrical alternatives including technical and cost considerations are also major considerations in infrastructure development and growth. Infrastructure and growth costs that are shared by all rate payers include application preparation and filing, property acquisition, overhead construction costs, in addition to any environmental mitigation. Costs that are shared with the community, include under-grounding, if any is required.

Additionally, environmental and other considerations will be analyzed to identify feasible site and route options and identify potential mitigation measures. Significance criteria for assessing environmental impacts will be developed as appropriate. Project impacts may be minimized where feasible by incorporating the following into project siting and routing:

- Where feasible, utilize existing ROW or franchise
- Where feasible, minimize construction on steep slopes, scenic areas, road crossings at major intersections, high points on ridges or roads
- Where feasible, minimize construction within open expanses of water or marshland that is potentially used by migratory birds, wildlife habitats, and nesting areas
- Where feasible, maintain consistency with applicable land use plans and policies.

2.3.2.10 HEALTH CARE

California State Law and County Code has assigned the County of San Bernardino Department of Public Health (the Department) the responsibility of protecting the health of the County's citizens. As the primary agency in charge of its residents' health, the County of San Bernardino Department of Public Health carries out a wide-ranging, yet comprehensive, public health programs including traditional public health services mandated by the State of California, but also a substantial range of personal health services provided at the request of its residents, and triaged as priority by the County Board of Supervisors and County-mandated regulatory services. The Department operates more than 30 major programs dedicated to specific public health activities. Specific public health related services include control of communicable diseases, epidemiology, veterinary services, the Public Health Laboratory, child and adolescent health programs, the California Children Services Program, family planning and maternal health services, nutrition services, including the Women, Infants, and Children (WIC) program, preventive health services for the aging, school health, control of chronic

disease, public health nursing services, food protection, safe drinking water programs, waste management, animal care and control services, education programs, registration of vital events, and public health data collection and analysis. The Department operates 33 major programs.[23] A list of the Department programs and services is attached as Appendix D.

There are approximately 24 hospitals in the overall County area. There is one County hospital – Arrowhead Regional Medical Center that is a full service acute care hospital. Arrowhead also has the only burn treatment facility for both San Bernardino and Riverside counties. There are approximately 283 beds in this County facility. There are also 17 private hospitals that are considered "general acute care" facilities. Of these 17 facilities, 15 have basic emergency services with a physician on duty. The remaining two facilities have basic emergency services with a physician on stand-by. There is one "rural general acute care" hospital located in the Lake Arrowhead area. There are also two major acute psychiatric hospitals in the County. The California Institution for Men also has a hospital onsite. There are approximately 3,269 beds combined for the County's hospitals.

Facility	Care	Beds
Arrowhead Regional Medical Center	General Acute Care	283
Barstow Community Hospital	General Acute Care	56
Bear Valley Community Hospital	General Acute Care	30
California Institute for Men, Chino	General Acute Care	80
Canyon Ridge Hospital	Acute Psychiatric	59
Chino Valley Medical Center	General Acute Care	126
Community Hospital of San Bernardino	General Acute Care	291
Desert Valley Hospital	General Acute Care	83
Fontana Medical Center – Kaiser Permanente	General Acute Care	435
Hi-Desert Medical Center	General Acute Care	55
Loma Linda University Behavioral Medical Center	Acute Psychiatric	89
Loma Linda University Community Medical Center	General Acute Care	120
Loma Linda University Medical Center	General Acute Care	671
Mountains Community Hospital	General Acute Care	35
Needles-Desert Community Hospital	General Acute Care	53
Redlands Community Hospital	General Acute Care	177
Robert H. Ballard Rehabilitation Hospital	General Acute Care	60
San Antonio Community Hospital	General Acute Care	332
San Bernardino County Medical Center	General Acute Care	296
St. Bernardine Medical Center	General Acute Care	441
St. Mary Regional Medical Center	General Acute Care	195
U.S. Family Care Medical Center	General Acute Care	102
Vencor Hospital - Ontario	General Acute Care	91
Victor Valley Medical Center	General Acute Care	110

Source: www.geocities.com/californiastateinfo/cahost-z.html

[23] http://www.co.san-bernardino.ca.us/pubhlth/misc/mission.htm

The County also maintains a list of healthcare facilities (public and private) on the County of San Bernardino Human Services System Resource Directory. A list of these healthcare facilities by the three planning areas is attached as Appendix E.

2.3.2.11 TELECOMMUNICATIONS

The purpose of the telecommunications section is to provide baseline information to enable the County to plan for proper telecommunication use and development. Rapid growth in San Bernardino County and technological advances in the telecommunication industry have resulted in an increase in the demand and development of these services.

San Bernardino County has oversight for landline telephone service providers through an application process that is required prior to approval. Based on information from the San Bernardino County Planning department, major telecommunication facilities currently serving San Bernardino County include the following (personal communication 2003):

- Air Touch Cellular
- American Tower Corp.
- AT&T
- Cingular Wireless
- Cox Communications
- MCI
- Nextel Communications
- Sprint Wireless
- Verizon Wireless

Agency Oversight

Development of wireless telecommunication facilities such as towers and antennas, within the County must be designed and approved pursuant to San Bernardino County's Title 8 Development Code (County Development Code Title 8, Division 8, Chapter 11). The Federal Communications Commission (FCC), established by the Communications Act of 1934, is an independent United States government agency, directly responsible to Congress, that is charged with regulating interstate and international communications by radio, television, wire, satellite and cable; while the California Public Utilities Commission (CPUC) provides agency oversight and regulates privately owned telecommunications, as well as, electric, natural gas, water, railroad, rail transit, and passenger transportation companies, within San Bernardino County. Additionally, the CPUC is responsible for assuring California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud, and promoting the health of California's economy.

The CPUC's Telecommunications Division assists the Commission in developing and implementing policies and procedures to facilitate competition in all telecommunications markets, and to address regulatory changes required by state and federal legislation (Source: http://www.cpuc.ca.gov/).

2.3.2.12 LIBRARIES

The San Bernardino County Library was established by resolution of the Board of Supervisors on July 14, 1913. Today, 28 of the buildings are branch libraries located throughout the vast county, while the Administration building in the city of San Bernardino, is considered the 29th branch (see Figure 2-28). Bookmobile service operates from the Administration building and the Needles Library. The 28 branch facilities have a combined 177,925 square feet of library space, providing one library for every 714 square miles, an equivalent of 0.21 square feet per person[24] residing in a library's service area.

The San Bernardino County Library system (the System) currently serves approximately 1,100,000 people in 18 cities and all San Bernardino County's unincorporated areas through the 29 facilities and two bookmobiles. Demographic trends project an increase in library use, of 19,000 annually; indicative of a more than 807,000 increase in new library users over the next 20 years. Incorporating these numbers into the infrastructure needs of San Bernardino County, the needs of the System can be accomplished by adding the equivalent of one additional facility of approximately 8,000 square feet annually.

The oldest of these branches is the Running Springs library built in 1958, the youngest is the Kaiser Branch Library located on a high school site in Fontana, opened in 1999. The average age of a San Bernardino County library is 25.46 years.

The 29 library branches are located in the following communities:

1. Adelanto
2. Apple Valley
3. Barstow
4. Big Bear
5. Bloomington
6. Chino
7. Chino Hills
8. Crestline
9. Fontana
10. Grand Terrace
11. Hesperia
12. Highland
13. Joshua Tree
14. Kaiser/Fontana High School
15. Lake Arrowhead
16. Loma Linda
17. Lucerne Valley
18. Mentone
19. Montclair
20. Needles
21. Rialto
22. Running Springs
23. Serrano High School/Phelan
24. Trona
25. Twentynine Palms
26. Victorville
27. Wrightwood
28. Yucaipa
29. Yucca Valley

[24] Desirable space for public libraries is 0.5-0.6 square feet per capita for a community of population between 35,000-100,000 persons. Source: Joseph L Wheeler and Herbert Goldhor, Practical Administration of Public Libraries (New York: Harper and Row, 1962) p. 554

Figure 2-28. San Bernardino County Library Branches

San Bernardino County Library – Facilities Master Plan

The San Bernardino County Library Facilities Master Plan presents the library's need for new facilities over the next twenty years. The Facilities Master Plan establishes three levels of facilities priorities, encompassing renovation, expansion, and replacement of the 29 facilities. The Facilities Master Plan will serve as a major analytical tool for the library's applications for funds from the Library Bond Act of 2000 (Proposition 14). The plan will result in a total of 666,556 SF of space, or 0.36 SF per capita for an approximate service area population of 1,866,146.

2.3.2.13 EDUCATION

This section describes the general characteristics of educational facilities in San Bernardino County. It also provides a general overview of students, staff, and the type of schools in the county. Data for this section was collected from the San Bernardino County Superintendent of Schools, the California Department of Education, and the California Post Secondary Education Commission.

With a countywide K-12 student population of an approximate 420,000 students attending more than 480 schools, the San Bernardino County Superintendent of Schools (SBCSS) office is a regional agency. The SBCSS provide vital and necessary service, leadership and advocacy to the 34 K-12 districts in the County (Source: California Department of Education, California Basic Education Data System, Various Years). Table 2-67 provides the location and enrollment levels, while Table 2-68 offers schools by type, for the District's 2002-03 school year. The County has 13 colleges: California State University at San Bernardino, six community colleges, four state-approved institutions, and two Western Association of Schools and Colleges accredited non-public institutions. Table 2-69 shows the location and enrollment levels of these colleges. The County also has six Special Education Local Plan Areas (SELPA) consisting of Desert/Mountain; East Valley; Fontana Unified School District; Morongo Unified School District; San Bernardino City Unified School District; and West End SELPA, and three regional occupational programs (ROP) including Baldy View; Colton-Redlands-Yucaipa; and County Schools ROP.

Table 2-67. School Districts, 2002-03

	School District	City	Enrollment
1	Adelanto School District (elem)	Adelanto	5,548
2	Alta Loma School District (elem)	Alta Loma	7,609
3	Apple Valley Unified School District	Apple Valley	13,850
4	Baker Valley Unified School District	Baker	213
5	Barstow Unified School District	Barstow	6,816
6	Bear Valley Unified School District	Big Bear Lake	3,390
7	Central School District (elem)	Rancho Cucamonga	5,231
8	Chaffey Joint Union High SD	Ontario	21,981
9	Chino Valley Unified School District	Chino	32,916
10	Colton Joint Unified School District	Colton	24,018
11	Cucamonga School District (elem)	Rancho Cucamonga	2,892
12	Etiwanda School District (elem)	Etiwanda	10,287
13	Fontana Unified School District	Fontana	40,168
14	Helendale School District (elem)	Helendale	603
15	Hesperia Unified School District	Hesperia	16,195
16	Lucerne Valley Unified School District	Lucerne Valley	1,005
17	Morongo Unified School District	Twentynine Palms	9,467
18	Mountain View School District (elem)	Ontario	3,439
19	Mt. Baldy Joint School District (elem)	Mt. Baldy	80
20	Needles Unified School District	Needles	1,190
21	Ontario-Montclair School District (elem)	Ontario	27,270
22	Oro Grande School District (elem(	Oro Grande	2,846
23	Redlands Unified School District	Redlands	20,285
24	Rialto Unified School District	Rialto	30,172
25	Rim of the World Unified School District	Lake Arrowhead	5,780
26	San Bernardino City Unified School District	San Bernardino	56,096
27	San Bernardino Co. Off. Of Education	San Bernardino	3,223
28	Silver Valley Unified School District	Yermo	2,670
29	Snowline Joint Unified School District	Phelan	8,785
30	Trona Joint Unified School District	Trona	350
31	Upland Unified School District	Upland	13,237
32	Victor Elementary School District	Victorville	9,442
33	Victor Valley Union High School District	Victorville	10,424
34	Yucaipa-Calimesa Joint Unified School District	Yucaipa	9,242
	Total		406,720

Source: San Bernardino County Superintendent of Schools (www.sbcss.k12.ca.us) California Department of Education (www.cde.ca.gov), and California Post Secondary Education Commission (www.cpec.ca.gov)

Table 2-68. Schools by Type, 2002-03

	Number of Schools
Elementary	296
Middle	73
Junior High	2
High School	50
K-12	5
Alternative	11
Special Education	6
Continuation	24
Community Day	12
Juvenile Court	2
Calif. Youth Authority	1
Total	482

Source: California Department of Education, Educational Demographics Unit – CBEDS

Table 2-69. Colleges, San Bernardino County

	College District	Location	Enrollment
	California State University		
1	California State University, San Bernardino	San Bernardino, CA	16,341
	California Community Colleges		
2	Barstow College	Barstow, CA	3,349
3	Chaffey Community College	Rancho Cucamonga, CA	19,984
4	Copper Mountain College	Joshua Tree, CA	2,158
5	Crafton Hills College	Yucaipa, CA	5,519
6	San Bernardino Valley College	San Bernardino, CA	14,273
7	Victor Valley College	Victorville, CA	11,793
	State-Approved Institutions		
8	Community Christian College	Redlands, CA	N/A
9	Everest College	Rancho Cucamonga, CA	N/A
10	Inland Valley College	Upland, CA	N/A
11	International School of Theology	Fontana, CA	89
	WASC-Accredited Non-public Institutions		
12	Loma Linda University	Loma Linda, CA	3,297
13	University of Redlands	Redlands, CA	4,297
	Total		81,100

Source: California Post Secondary Education Commission (http://www.cpec.ca.gov/)

Comparison of the County enrollment trend with that of the state revealed that increases and decreases in the County enrollment levels have followed the same trend as that of the state. Enrollment numbers were generally higher in school years1992-93 and 1996-97, although a percentage decline in the enrollment rate was experienced through school year 2000-01 (Source: California Department of Education, Educational Demographics Unit) (see Figure 2-29).

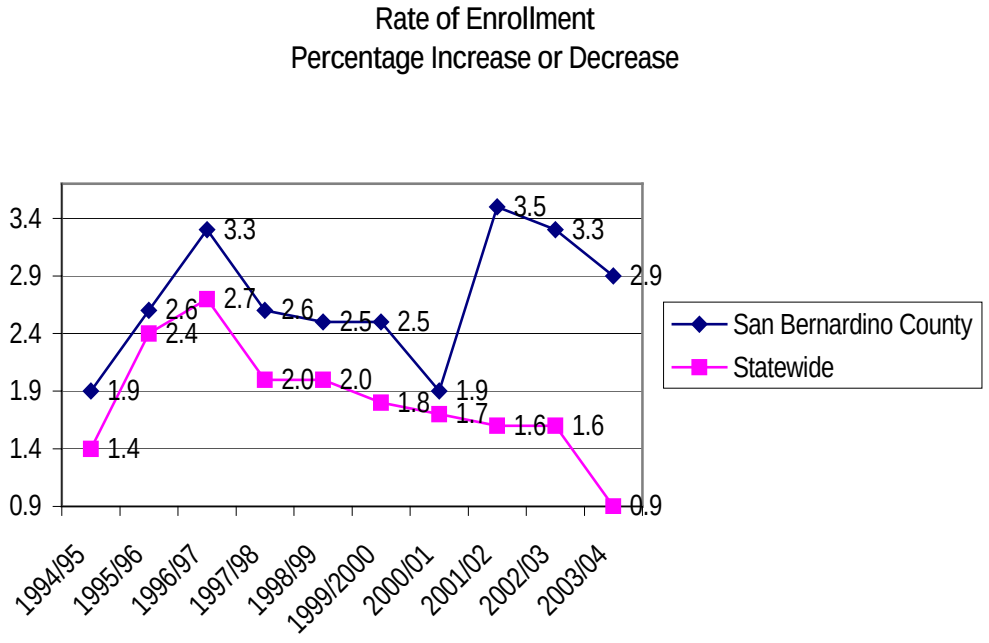
Table 2-70. Enrollment for San Bernardino County and California

	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04
San Bernardino County	314,754	321,316	327,528	335,978	347,061	356,204	364,942	373,896	380,830	39,496	407,228	419,084
Percent Change		2.10%	1.90%	2.60%	3.30%	2.60%	2.50%	2.50%	1.90%	3.50%	3.30%	2.90%
Statewide	5,195,777	5,267,277	5,341,025	5,467,224	5,612,965	5,727,303	5,844,111	5,951,612	6,050,895	6,147,365	6,224,403	6,298,769
Percent Change		1.40%	1.40%	2.40%	2.70%	2%	2%	1.80%	1.70%	1.60%	1.60%	0.90%

Source: California Department of Education, Educational Demographics Unit – CBEDS

School years 2001-02 through 2003-04 revealed a continued increase in enrollment numbers, but again a consistent decrease in the enrollment percentage rate was experienced district wide (Source: San Bernardino County Superintendent of Schools). The pace of enrollment is projected to level off in the middle of this decade. The rate of enrollment by school districts in the three planning regions is shown in Figure 2-30A through Figure 2-30C.

Figure 2-29. Rate of Enrollment



Source: California Department of Education, Educational Demographics Unit – CBEDS

Figure 2-30A. School District Rate of Enrollment – Valley Region

Figure 2-30B. School District Rate of Enrollment – Mountain Region

Figure 2-30C. School District Rate of Enrollment – Desert Region

2.4 CRITICAL ISSUES TO BE ADDRESSED

2.4.1 CIRCULATION

2.4.1.1 ROADWAY SYSTEM

Continued maintenance and development of a comprehensive roadway system is a critical issue facing San Bernardino County. Existing roadways are experiencing increasing traffic volumes due to continuing growth in the County's residential sector. In addition, a large portion of this growth are residents who must commute outside the County for employment. As traffic volumes continue to increase, portions of the roadway system will begin to experience substantial delays and possibly gridlock.

2.4.1.2 PUBLIC TRANSIT

Local transportation agencies seek to increase transit usage and provide more and better alternatives to single occupancy trips. The identification of future source of funding for needed improvements in public transit is also a critical issue.

2.4.1.3 RAILROADS

With the number of trains traveling through San Bernardino County expected to nearly triple over the next 20 years, the interaction between roadway and rail traffic is a crucial issue for the County to evaluate. The completion of the Alameda Corridor project and the continuing work on both the Alameda Corridor East and ONTrac projects will only increase the amount of rail traffic occurring in the County. Overall rail capacity and safety are issues that transportation planning agencies throughout the county must address.

2.4.1.4 AVIATION

The aviation industry is on the leading edge of a major expansion in San Bernardino County. Ontario and San Bernardino International Airports are beginning to establish a footholds in both passenger and freight markets and the Southern California Logistics Airport is slated to become one of the busiest intermodal facilities in the country. These increases in aviation traffic will result in the need to improve access and circulation to and within these facilities for passengers and commercial vehicles.

2.4.1.5 GOODS MOVEMENT

The amount of freight traveling through San Bernardino County is expected to significantly increase over the next 20 years. This increase will create severe stress on the existing rail and roadway infrastructure if improvements are not made. Not only will this increase in freight traffic result in greater congestion but also create potential safety issues at rail crossings and along high-volume roadways. Transportation planning agencies within the county must develop a comprehensive plan

to address the needed improvements and to identify potential funding sources to implement these improvements.

2.4.1.6 TRANSPORTATION DEMAND MEASURES

To ensure the quality of life for residents currently living in or potentially moving into the County, planning agencies throughout the County must work to develop methods through which traffic congestion and pollution can be alleviated. The development of new Park & Ride facilities along congested corridors and the implementation of a comprehensive non-motorized transportation plan to encourage greater use of bicycle and pedestrian facilities are two primary areas of focus.

2.4.1.7 FUNDING SOURCES

The most critical issue facing transportation agencies within San Bernardino County is the need to identification and secure funding sources to address all the other critical issues contained within this section. As the State of California struggles to overcome the current budget deficit, new evaluation techniques and processes must be developed to allow the County a more efficient method of prioritizing projects to ensure the greatest benefit. If conditions are allowed to worsen due to a lack of funding, traffic congestion will result in substantial economic loss in terms of productivity and continued growth. Potential health and safety issues may also occur if roadways are allowed to increase in usage without capacity and safety improvements.

2.4.2 INFRASTRUCTURE

2.4.1.8 WATER AND WATER QUALITY

Water Supply

The critical water resource issues facing the County of San Bernardino, as a whole, are a reflection of those facing each individual water agency, albeit in varying degrees. These issues, as listed below, will only intensify as the County's population increases. In an effort to address the following critical issues as well as the public concerns, the County could develop a regional water supply integrated resources plan that incorporates short- and long-term planning goals. Short-term plans could include an evaluation of existing resources complemented by an aggressive conservation program. Long-term plans could include further conservation measures, reclaimed wastewater from various sources, and development of additional local resources, such as groundwater remediation, and stormwater capture, storage and reuse.

- **Groundwater Management Plans** – Water wholesalers in conjunction with their retail subagencies and private well owners, are developing cooperative groundwater management plans to optimize and protect the use of groundwater. In general, these plans also discuss a decreased dependence on imported water. Advances in technology now allows for massive data consolidation that will allow for better analysis and planning.
- **Seasonal Storage, Dry Year Supply, and Conjunctive Use** – The water wholesalers and their retail subagencies have developed and are implementing plans to recharge local

groundwater basins with imported water during hydrologic "wet years." The intent is to ultimately expand the programs to levels that allow significant reliability improvements through in-lieu use of stored imported water during periods of drought. One important tenet is the significant link between utilizing recycled water, imported water, and captured stormwater for basin recharge purposes.

- **Desalination Programs** – Concerns about the salt content, expressed as Total Dissolved Solids (TDS), of wastewater and in treated wastewater have grown with the expansion of water recycling programs. Salt accumulates in the different watersheds faster than it is removed. Achieving salt-balance is a principal long-term goal. Without constructing the necessary desalting facilities and brine line improvements to accomplish salt balance, water quality will only continue to degrade. It is anticipated that within 50 years water regulations will require each groundwater basin to be in salt balance in order to protect and maintain water quality. Other chemicals of concern in wastewater include pharmaceuticals, household chemicals and pesticides, perchlorate, and disinfection by-products. Water quality concerns are further discussed in the Water Quality section of the Conservation Element.
- **Desalt Brackish Groundwater** - Water agencies have developed and are implementing plans to desalt brackish groundwater as a means of reducing dependence on imported water supplies and protecting existing high quality groundwater.

Most of the water supply in San Bernardino County is from groundwater and the relationship of water supply with water quality is understated by most.

Water Quality

Concerns about the salt content, expressed as Total Dissolved Solids (TDS), of wastewater and in treated wastewater have grown with the expansion of water recycling programs. Salt accumulates in the different watersheds faster than it is removed. Achieving salt-balance is a principal long-term goal. Without constructing the necessary desalting facilities and brineline improvements to accomplish salt balance, water quality will only continue to degrade. It is anticipated that within 50 years water regulations will require each groundwater basin to be in salt balance in order to protect and maintain water quality. Other chemicals of concern in wastewater include pharmaceuticals, household chemicals and pesticides, perchlorate, and disinfection by-products. State and Regional Water Quality Control Boards will continue to increase regulations for Urban Runoff for municipal, industrial, commercial and residential discharges. Regulations in the San Bernardino County region may begin to focus on regional treatment process that may require large land areas and significant planning and construction. Water quality concerns are further discussed in the Water Quality section of the Conservation Element.

Biosolids

As recycled water production grows, so will the production of biosolids. This by-product of reused wastewater presents a significant challenge to wastewater agencies within the County. The reason for this is that the conventional and convenient disposal methods, such as land application, landfill disposal, and exportation are likely to become less and less available in the future due to increasingly stringent restrictions.

CMOM

The proposed CMOM regulations will require all wastewater collection systems within the County to identify a strategy for compliance and identify necessary management tools. As a minimum, EPA has established four attributes of a CMOM Program Plan. The attributes require that the plan must be written, be implemented by trained personnel, contain goals and performance measures, and be evaluated and updated periodically.

County's Role in Regional Water Supply and Land Use Planning Efforts

Land use planning in the unincorporated area, which is the responsibility of the County, should be coordinated with wastewater system planning, which is the responsibility of the facility providers. The County may wish to establish mechanisms to work closely with the appropriate wastewater district provider during the community and subregional plan update process, and during the review of general plan amendments and rezones, to obtain their input on the impact of all proposed changes in the density or intensity of land uses on their ability to provide the service.

In an effort to coordinate land use planning with the planning of the wastewater provision system, the County should encourage the preparation of wastewater master plans that are coordinated with the provisions of community and subregional plans. Furthermore, the County should match planned build-out capacity with wastewater that are reasonably expected to be available concurrent with need. The County should also phase development based on the extension/expansion of wastewater facilities. In order to encourage and support the development of wastewater master plans, the County should provide data to the wastewater facility providers about development planned for an area, particularly for those areas of the County approaching existing water facility capacities.

2.4.1.9 WASTEWATER

On a County-wide basis there are a number of critical issues related to the collection and treatment of wastewater. These include:

- Biosolids,
- Compliance with the Capacity Management Operations and Maintenance (CMOM) regulations,
- Infrastructure,
- On-site treatment (Septic Systems),
- Water Quality, and
- Water Recycling.

2.4.1.10 SOLID WASTE

The provision and management of solid waste services entails a few critical issues listed below:

- Solid waste management is essential for the County because, if mismanaged, it can have damaging environmental effects on ground water, air quality, and public health.

- An analysis of the diversion rates of the jurisdictions within San Bernardino County reveals that the unincorporated county area is the only area where diversion rates decreased from 1995 to 2000. The unincorporated county area has a board-approved time extension from February 2003 to July 2004 to meet the AB 939 goals. (AB 939 mandates reduction of wastes being disposed: jurisdictions were required to meet diversion goals of 25% by 1995 and 50% by the year 2000.)
- The waste inflow and outflow analysis for San Bernardino County shows that the County has a net outflow of 40 percent of its waste to the surrounding counties and/or out of state. The outflow for San Bernardino County is much higher than that of the surrounding counties that dispose off approximately 90 to 98 percent of their waste within the county. Moreover, trends of waste disposal for the past few years show that increasingly San Bernardino County is disposing its waste outside the county. Over the past eight years, the amount of waste disposed in the County as a percentage of the total waste produced has decreased from 86% in 1995 to 72% in 2000.
- The per capita waste generation (10.8ppd - pounds per person per day or "ppd") for San Bernardino County is approximately 35 percent higher than the statewide per capita waste generation of 8ppd.
- Estimates show that San Bernardino County has sufficient disposal capacity for the next 29 years. The County can further optimize on this capacity by increasing its diversion rate and reducing the per capita waste generation.

2.4.1.11 LAW ENFORCEMENT

As expressed is the community meetings, crime is one of the main concerns for the San Bernardino County residents. San Bernardino County has higher crime rate than the state average. However, the County crime rate is lower than the crime rates for Los Angeles and Riverside counties.

2.4.1.12 FIRE PROTECTION

(Critical issues relating to fire protection are discussed in the Fire Hazard section of the Safety Background Report.)

2.4.1.13 NATURAL GAS

Natural gas service providers did not express any concerns relating to provision of their services in San Bernardino County.

2.4.1.14 ELECTRICITY

Electricity service providers did not express any concerns relating to provision of their services in San Bernardino County.

2.4.1.15 TELECOMMUNICATIONS

San Bernardino County staff did not indicate any critical issues regarding telecommunication planning or oversight.

2.4.1.16 LIBRARIES

The San Bernardino County Library system intends to expand, but like many other County Departments, it faces the financial challenges because of the state's budget crisis.

2.4.1.17 EDUCATION

The budget cuts for schools and community colleges due to the state's economic difficulties during the last two years is the most critical issue faced by San Bernardino County education system. The proposed fee increases and enrollment freezes in the state budget will affect the total enrollment in colleges. Another concern for schools is the decreasing rate of enrollments within the school districts.

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2.5.4 GLOSSARY

Class I Bicycle Path: Provides a completely separated right-of-way of the exclusive use of bicycles and pedestrians with crossflow minimized.

Class II Bicycle Path: Provides a striped lane for one-way bike travel on a street or highway.

Class III Bicycle Path: Provides for shared use with pedestrian or motor vehicle traffic.

Composting: The biological decomposition of organic materials such as leaves, grass clippings, brush, and food waste into a soil amendment.

Recycling: The process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new or reconstituted products which meet the quality standards necessary to be used in the marketplace.

Reuse: To use something over again in it's current form, i.e., without breaking it down into a raw material.

Telecommunications: Telecommunications includes distant communication through the use of wireline and wireless telephone; broadcast via television and cable; radio; satellite; and the Internet.

Waste Diversion: The combined efforts of waste prevention, reuse, recycling, and composting practices.

Waste Minimization: Refers to eliminating, reducing, and recycling of hazardous waste.

Xeriscaping: The practice of landscaping with slow-growing, drought-tolerant plants.

2.5.5 ACRONYMS

A	Advisory
AADT	Annual Average Daily Traffic

ADT	Average Daily Traffic
BAT	Barstow Area Transit
BBARWA	Big Bear Area Regional Waste Water Authority
BG	Board Governed
BNSF	Burlington Northern Santa Fe
BVES	Bear Valley Electric Service
CCI	California Crime Index
CEC	California Energy Commission
CIWMB	California Integrated Waste Management Board
CL	California Legal
CLAWA	Crestline-Lake Arrowhead Water Agency
CMOM	Capacity, Management, Operations, and Management
CPUC	California Public Utilities Commission
CPUC	California Public Utilities Commission
CSA	County Service Area
DRS	Disposal Reporting System
DWR	Department of Water Resources
EIR	Environmental Impact Report
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FCC	Federal Communications Commission
FTA	Federal Transit Agency
FTIP	Federal Transportation Improvement Program
GPAC	General Plan Advisory Committee
I	Interstate
IEOC	Inland Empire Orange County
IEUA	Inland Empire Utilities Agency
IOS	Initial Operating Segment
ITS	Intelligent Transportation Systems
LAUPT	Los Angeles Union Passenger Terminal
LAX	Los Angeles International Airport
LOS	Level of service
MARTA	Mountain Area Regional Transit Authority
MBTA	Morongo Basin Transit Authority
MGT	Million Gross Tons
MGT-M/M	Million gross ton –mile per mile
MMcf/d	Million cubic feet per day
MWA	Mojave Water Agency
MWD	Metropolitan Water District
MWh	Megawatt Hour
NAT	Needles Area Transit
NN	National Network
ONT	Ontario International Airport
ppd	Pounds per person per day
R	Restricted

RCTC	Riverside County Transportation Commission
RMDZ	Recycling Market Development Zone
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SANBAG	San Bernardino Associated Governments
SBVMWD	San Bernardino Valley Municipal Water District
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCRRA	Southern California Regional Rail Authority
SCWC	Southern California Water Company
SG	Self Governed
SGPWA	San Gorgonio Pass Water Agency
Sq. Ft.	Square Feet
SR	State Route
SSO	Sewer Spill Overflow
STIP	State Transportation Improvement Program
STWMA	San Timoteo Watershed Management Authority
SWMD	Solid Waste Management Division
SWP	State Water Project
SWRCB	State Water Resource Control Board
TA	Terminal Access
TCRP	Traffic Congestion Relief Program
TDS	Total Dissolved Solids
TEA	Transportation Equity Act
UP	Union Pacific
V/C	Volume-to-Capacity
VVTA	Victor Valley Transit Authority
VVWRA	Victor Valley Wastewater Reclamation Authority
WASC	Western Association of Schools and Colleges
WMA	Watershed Management Area

Appendix A
Disposal and Non-Disposal Sites, San Bernardino County

Appendix B
Recycling Market Development Zone (RMDZ), San Bernardino County

Appendix C
Completed and Pending Natural Gas Infrastructure Projects, California

Appendix D
List of Programs,
San Bernardino County Department of Public Health

Appendix E
Healthcare Facilities by Planning Area, San Bernardino County