

**TABLE 5.3-1
CHARACTERIZATION OF SIGNIFICANT LOCAL FAULTS**

Fault or Fault Segment	Style	Assumed Length (km)	Historic Earthquake Magnitude	Estimated Maximum Magnitude
Compton-Los Alamitos	Thrust or oblique	52	–	6¾
Newport-Inglewood	Right lateral	116	6.3 (1933)	7
Whittier System: East + West LA Thrust Whittier	Oblique	36	5.9 (1987)	7
	Oblique	47	4.2 (1976)	7
Elysian Park-Montebello Fault	Strike-slip	19	–	6½
Las Cienegas- Peralta Hills	Reverse	73	4.7 (1929)	7
Palos Verdes	Oblique	115	3.9 (1972)	7¼
Torrance-Wilmington	Thrust	40	–	6¾
Santa Monica-Raymond System	Oblique	79	5.2 (1930)	7
San Andreas (south-central portion)	Right lateral	300	7.8 (1857)	8

Source: *Master Environmental Impact Report: Los Angeles County Drainage Area* (Los Angeles County Department of Public Works 1994a)

Each of the faults summarized in Table 5.3-1 is capable of producing strong ground shaking which can affect project designs. Given the distribution of surface faults and buried faults, no one fault can dominate seismic design considerations. Based on current information the Verdugo, Santa Monica-Hollywood-Raymond (Hollywood segment) and the Newport-Inglewood fault zones (Figure 5.3-1) are the faults suspected of having surface fault rupture potential. Only the Cherry Hill branch of the Newport-Inglewood fault is in a designated Alquist-Priolo Earthquake Fault Zone. The so-called "blind" thrusts are not known to have reached the ground surface.

Earthquake shaking may produce secondary impacts such as liquefaction, differential compaction/seismic settlement, tsunami, seiches and flooding due to failures of dams and levees. Liquefaction is due to the sudden loss of shear strength in saturated cohesion less (predominantly sandy) deposits caused by severe ground shaking. The affects are greatest on heavy structures which tend to settle (possibly several feet) or overturn (Los Angeles County Department of Public Works 1994a). Liquefaction potential exists at several locations along the project length (Los Angeles County Department of Regional Planning, 1990, Plate 4) due to the presence of loose alluvial deposits and

groundwater within about 30 feet of the surface. Differential compaction/seismic settlement occurs in unsaturated low density deposits which can be densified during strong seismic shaking causing overlying materials and man-made structures to settle. The potential for this condition has not been mapped.

A tsunami (or seismic sea wave) is triggered by large submarine sea-floor displacements from offshore landslides, fault displacements or volcanic eruptions. The affects of tsunamis are along the coastal area, and can be devastating to structures and inhabitants (Los Angeles County Department of Public Works 1994a). Potential affects in the project area may extend along the River from Long Beach Harbor as far north as Willow Street in Long Beach (Los Angeles County Department of Regional Planning 1990 Plate 6). Seiches are earthquake generated standing waves formed in enclosed water bodies such as lakes, reservoirs or harbors. The "sloshing" affect of these waves can cause damage to reservoir retaining structures and to waterfront property/structures. For the project area this limits the potential affects to the areas within a few feet of sea level in Long Beach Harbor.

Seismically-induced flooding results from the failure of water retaining structures (dams and reservoirs) during an earthquake. The Los Angeles River drains water from several large flood control dams such as Hansen Dam, Sepulveda Dam and potentially Whittier Narrows Dam (Los Angeles County Department of Regional Planning 1990, Plate 6). Since these dams impound water only in the rainy season during unusually high precipitation periods, the opportunities for catastrophic flooding are limited. The further coincidence of a severe earthquake and subsequent rapid failure of the dams has a low probability of occurrence.

Other Geologic Hazards

Other geologic issues, from CDMG Note 46, considered for the project include slope stability, excessive erosion, land subsidence and volcanic hazards. Volcanic hazards are not a credible direct threat to the project. Land subsidence has occurred in the Wilmington-Long Beach coastal area due to oil withdrawal. This subsidence has been reversed due to fluid injection and formation pressurization so that this poses no credible threat to the project. Excessive erosion can be caused by the uncontrolled flow of surface waters over erosion-prone soils, alluvium or soft bedrock. This is a local phenomenon which is not mapped on a large scale. However, all of the alluvial and artificial fill materials affected by the project are erosion-prone; changes to local surface drainage can initiate erosion or exacerbate existing erosion features. Slope stability is also a local concern in the context of the proposed project improvements. All alluvial, soil and artificial fill materials are susceptible to local slumping and slope failures, either in their present conditions or if disturbed. The degree of susceptibility will depend on local conditions and the nature of the improvement.

5.3.3 Significance Threshold

The threshold for determining if significant impacts on geological issues would occur is based on Appendix G of the *California Environmental Quality Act Statutes and Guidelines*. The likelihood for significant impacts related to geologic, seismic and soil issues to occur was evaluated based on the potential for the proposed project to result in:

- Expose people or structure to major geologic hazards.
- Cause substantial flooding, erosion, or siltation

5.3.4 Impact Analysis

No habitable structures or critical facilities are proposed as part of the project. The project elements which will be susceptible to geologic, seismic and soils impacts are those which involve grading (excavation or filling) and involve creating foundation support for structures. These elements include construction of underpasses to continue the bike trail under streets and railroads (where an at-grade surface crossing is not available), river crossings (structures to extend a trail across the River at a new or existing location), crossing access (areas connecting trails to crossings), and pedestrian bridges (structures across the River). There are approximately 30 locations where such elements are planned along the project alignment.

Incorporation of the standard site preparation methods, design measures, and construction techniques for the proposed connections, crossings, bridges and access areas for the *Los Angeles River Master Plan* project should be sufficient to avoid exposing people and structures to significant impacts from major geologic hazards. Project design measures must be undertaken to avoid potentially significant impacts related to exposure of people to risk associated with fault rupture, seismic shaking, liquefaction, differential compaction/settlement, tsunami, seiche, seismically induced flooding, or landsliding.

The proposed project must comply with the provisions in the Safety Element of the Los Angeles County *General Plan* with regard to geologic and seismic hazard identification and remediation. All design and construction will be subject to the Los Angeles County Uniform Building Code (latest edition and revisions) with respect to grading, foundation support, site development and seismic design factors. All designs and construction with respect to grading, foundation support, site development and seismic design factors, will also be subject to the building code guidelines of appropriate local jurisdictions.

The project is located in a tectonically active area of Southern California. There are numerous active faults located along the projects length. There are three faults with the potential for surface rupture mapped within the proposed project site which are described in the County Safety Element. All project elements must be designed to reduce the potential for damage associated with the anticipated level of seismically induced groundshaking in conformance with the Los Angeles County Uniform Building Code.

Good engineering practices must be undertaken to avoid potentially significant impacts related to exposure of people or structures to unstable earth conditions from grading, erosion, or unstable soils. The proposed project is expected to require minimal earth grading activities. Only small volumes of material will be moved as a result of cut and fill activities, which likely will be balanced onsite. Generally, the removal of unsuitable soils and recompaction of soils as engineering fills is a standard practice to alleviate unstable soils hazards. The use of shoring and properly constructed slopes is standard practice to reduce local slope stability hazards. Proper grading and surface drainage devices are standard practice to prevent excessive erosion.

There are no anticipated cumulative impacts related to geologic, seismic and soil issues. The proposed Los Angeles River improvements when evaluated in conjunction with other approved and anticipated projects in nearby areas does not contribute to exposure of people or structures to risk from geologic hazards. Cut and fill material produced by grading in support of the improvements is expected to be balanced onsite. Therefore, there are no anticipated significant cumulative impacts related to grading or import or export of fill or cut material.

5.3.5 Mitigation Measures

There are no anticipated impacts that would expose people or structures to major geologic hazards or cause substantial flooding, erosion, or siltation; therefore, there are no recommended mitigation measures.

5.4 WATER

This section of the environmental analysis describes surface and ground water resources that are potential issues at the various project sites identified in the *Los Angeles River Master Plan Final Report/Los Angeles County Departments of Public Works, Parks and Recreation, regional Planning, National Park Service, Rivers, Trails, and Conservation Assistance Program and the Los Angeles River Advisory Committee*, 1996), including: regulatory framework; existing conditions; thresholds for determining significance; impacts; and, if necessary, mitigation measures.

5.4.1 Regulatory Framework

Federal

Section 404 of the Clean Water Act, which is administered by the U.S. Army Corps of Engineers (Corps), regulates the discharge of dredged and fill material in waters of the United States. The Corps has established a series of Nationwide Permits that authorize certain activities in waters of the United States, provided that the proposed activity can demonstrated compliance with the standard conditions. Activities not authorized by existing Nationwide Permits are subject to discretionary authority by the Corps.

State

A water quality certification is required by the State Water Resources Control Board (State Board) for an activity that requires a federal license or permit and may result in a discharge to a water body, such as use of a Nationwide Permit or individual permit pursuant to the federal Clean Water Act.

The Regional Water Quality Control Board has issued a National Pollution Discharge Elimination System Permit CA 061654 to the County of Los Angeles for grading projects that affect areas of 5 acres or smaller in size. The construction area for the individual projects in the Los Angeles River Master Plan are generally under 5 acres in size. Projects over 5 acres would be covered under the State Water Resources Control Board's "Water Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity" (General Permit No. CAS000002). Measures to avoid impacts on storm water quality must be undertaken in compliance with this permit.

County

The Conservation and Open Space Element of the County of Los Angeles *General Plan* (Los Angeles County Department of Regional Planning 1993 and 1980a) includes two policies that are relevant when evaluating the effects of the proposed projects on water: Protection of water quality; and Reducing the risk to life and property from flooding and erosion. The Flood Protection Policy Map (Los Angeles County Department of Regional Planning 1980c) of the County *General Plan* (Los Angeles County Department of Regional Planning 1993 and 1980a) indicates areas needing flood plain management and additional flood protection channels.

5.4.2 Existing Conditions

The Los Angeles River (River) and Tujunga Wash (Wash) are designated "Major Channelized Flood Facilities" on the County of Los Angeles Flood Protection Policy Map (County of Los Angeles Department of Regional Planning 1980c). Sepulveda Dam is a major flood control facility on the River. The River is formed at the confluence of Bell Creek and Calabasas Creek in the foothills of the Santa Monica Mountains.

Runoff from the project sites flows either directly toward the River, or to a storm drain system directly connected to the River. The Los Angeles County Drainage Area (LACDA) Study identified several locations where the River and the Wash were deficient in providing a safe level of flood protection in a 100-year storm. Those areas adjacent to the channel are: in Tujunga Wash from Roscoe Boulevard to the confluence with the Los Angeles River; Los Angeles River from Barham Boulevard in Burbank to Taylor Yard in Elysian Valley; Los Angeles River downstream of its confluence with Arroyo Seco to the Santa Monica (10) Freeway; and the lower Los Angeles River from its confluence with the Rio Hondo Channel in South Gate to its outlet at the Pacific Ocean in Long Beach. The LACDA Project will address the most immediate and severe flooding threat which exists along the lower Los Angeles River. The County will address the upper watershed deficiencies in the future. The LACDA project improvements are proposed to be constructed over a period of seven to nine years, beginning in 1996. Some areas proposed for site-specific project improvements will be subject to flood inundation hazards until flood control improvements are implemented. All projects recommended in the *Master Plan* are encouraged to include offsite storm water retention.

The Draft Water Quality Control Plan (Regional Water Quality Control Board, Los Angeles Region 1994) for the Los Angeles Basin (Basin Plan) notes that the major contributors to the impaired water quality in the Los Angeles River and its tributaries are urban runoff and illegal dumping (urban non-point sources). The contaminants found in typical urban runoff include bacteria, nutrients, petroleum hydrocarbons, heavy metals, sediment, trash, and debris. These contaminants enter the River during rain events by way of municipal storm drains. Point sources of discharges to surface waters include treatment facilities for municipal and industrial waste waters. Currently, about 77% of the total base flow in the River is from tertiary-treated effluent from the Tillman and Glendale Treatment Plants, (Los Angeles County Department of Public Works and Water Replenishment District of Southern California).

5.4.3 Significance Thresholds

The threshold for determining if significant impacts on water would occur is based on Appendix G of the *California Environmental Quality Act Statutes and Guidelines*. The likelihood for significant impacts on water to occur was evaluated bases on the potential for the proposed project to:

- Substantially degrade water quality;
- Contaminate a public water supply;
- Substantially degrade or deplete ground water resources;
- Interfere substantially with ground water recharge; or
- Cause substantial flooding, erosion, or siltation.

5.4.4 Impact Analysis

This section analyzes the potential for significant impacts on water that would occur from implementation of the *Los Angeles River Master Plan*. The projects proposed in the *Los Angeles River Master Plan* are not expected to result in any impacts on water related to exposure of people or property to water related hazards such as flooding; changes in the amount of surface water in any water body; changes in currents, or the course or direction of water movements; change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations, or through loss of ground water recharge capability; changes in the direction or rate of flow of ground water; impacts to ground water quality; or a substantial reduction in the amount of ground water otherwise available for public water supplies.

In an event that any earth moving activities related to construction extend beyond the high water mark at the Dominguez Gap Habitat Restoration area, the proposed project would be subject to jurisdiction of the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act. All projects proposed in the *Los Angeles River Master Plan* at Dominguez Gap Habitat Restoration Area are for biological enhancement and would result in a public benefit.

The construction and operation of the projects proposed in the *Los Angeles River Master Plan* are not expected to result in significant impacts on water related to degradation of water quality; changes in absorption rates, drainage patterns or the rate and amount of surface runoff. The projects listed in Table 5.4-1 may result in increased impervious areas which will potentially increase surface runoff and decrease absorption rates. Increased urban runoff can result in an increase in contaminants entering the River.

The potential for impacts associated with increased surface runoff, changes in absorption rates, and drainage patterns, and increases in contaminants in the surface runoff can be minimized through on-site retention. Compliance with all provisions of the National Pollutant Discharge Elimination System Permits is necessary to avoid impacts on storm water quality during and after construction. In addition, the proposed construction activities will be undertaken consistent with the provision of the State Water Resources control Board "Water Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity" (General Permit No. CAS000002). Completion of construction activities, especially any earth moving activities, during the non-rainy seasons would serve to minimize the risk of impacts related to erosion and siltation due to storm water.

Where construction activities must extend into the rainy season, incorporation of Best Management Practices consistent with the guidelines provided in the California Storm Water Best Management Practice Handbooks Construction Activities should be sufficient to avoid substantial flooding, erosion or siltation.

Supplemental erosion control measures to be implemented during the rainy season include:

- Mulching
- Geotextiles and Mats
- Earth Dikes
- Temporary Drains and Gulleys

- Silt Fence
- Straw Bale Barriers
- Sand Bag Barriers
- Brush or Rock Filter
- Sediment Trays
- Sediment Basins

5.4.5 Mitigation Measures

The projects proposed under the Los Angeles River Master Plan are not expected to substantially degrade water quality; contaminate a public water supply; substantially degrade or deplete ground water resources; interfere substantially with ground water recharge; or cause substantial flooding, erosion, or siltation. Therefore, there are no recommended mitigation measures.

**TABLE 5.4-1
WATER IMPACT SECTION**

Sheet Number	Description
Reach Number 1	
Sheet No. 15	Park/aesthetic improvement and skate/bike rental north of Artesia Blvd., east of LAR
Reach Number 2	
Sheet Nos. 24 and 25	Park/environmental restoration north of SPRR
Sheet No. 22	17-acre interpretive site north of confluence of LAR and Rio Hondo
Reach Number 3	
Sheet No. 36	Outdoor eating area north of 7th Street and east of LAR
Sheet No. 37	Economic redevelopment opportunity on park staging for trail on Santa Fe Avenue between 3rd and 4th Streets
Sheet No. 40	Downey playground expansion and economic development opportunity at Clover Street
Sheet No. 41	Park and scenic overlook at Broadway Street; potential park at corn fields
Reach Number 4	
Sheet Nos. 50, 51, 52, and 53	Demonstration project at proposed Los Feliz Riverwalk
Sheet No. 55	Interpretive site at confluence of Verdugo Wash and LAR, and economic development opportunity with existing City of Glendale maintenance yard
Sheet No. 58	Recreation and interpretive site at City of Los Angeles spreading grounds
Sheet No. 59	Economic development opportunity where LAR approaches Burbank Studios
Sheet No. 60	Economic development opportunity at Warner Studios on north side of LAR and near Forest Lawn Drive on south side of LAR
Reach Number 5	
Sheet No. 65	Commuter bike trail on south and west side of Tujunga Wash
Sheet No. 67	Economic development opportunity on south side of LAR
Sheet No. 69	Economic development opportunity on east side of Woodman Avenue at LAR
Sheet No. 70	Park south of LAR between Hazeltine Avenue and Murietta Avenue, and commercial improvement north of LAR between Calhoun Avenue and Hazeltine Avenue

Sheet Number	Description
Sheet No. 73	Economic development opportunity north of LAR and east of San Diego Freeway
Sheet No. 81	Create park south of LAR and west of Corbin Avenue
Sheet No. 82	Create park north of LAR and west of Oso Avenue
Sheet No. 83	Economic development opportunity south of Van Buren Street and west of Mason
Sheet No. 84	Economic development opportunity—open-air markets on Canoga Avenue
Reach Number 6	
Sheet No. 92	Mini-park between Tujunga Wash and strip mall market with skate/bike rentals and sidewalk vendors
Sheet No. 93	Staging area/parking/access between Alton Avenue and Tujunga Wash north of Sherman Way.

5.5 AIR QUALITY

The environmental analysis of the potential for impacts on air quality has been prepared in accordance with the methodologies provided by the South Coast Air Quality Management District (SCAQMD) in *CEQA Air Quality Handbook* (South Coast Air Quality Management District 1993). This section on air quality describes: federal, state, and local regulatory framework; ambient conditions; impacts; significant impacts on air quality; and SCAQMD thresholds for requiring mitigation of impacts on air quality.

5.5.1 Regulatory Framework

Air quality in the basin is regulated by federal, state, and regional control authorities.

Federal

The U.S. Environmental Protection Agency (EPA) is involved in local air quality planning through the federal Clean Air Act. The goal of the Clean Air Act is to protect and enhance the nation's air resources. The federal Clean Air Act is relevant for the evaluation of air quality issues for the proposed project. The goal of Title 1 is to attain federal air quality standard for six criteria pollutants: ozone (O₃), carbon monoxide (CO), fine particulate (PM₁₀), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead (P_b) by specified deadlines. The EPA has established ambient air quality standards which are presented in Table 5.5-1.

State

The State of California Clean Air Act requires all air districts in the State to endeavor to achieve and maintain state ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide by the earliest practicable date. California's standards for ambient air quality are generally more stringent than corresponding national standards. California has also established its own standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are presented in Table 5.5-1.

Regional Air Quality Planning Requirements

The SCAQMD regulates stationary sources of pollution throughout the Basin and has authority under the California Clean Air Act to manage transportation activities at indirect sources, which are facilities that do not directly emit substantial amounts of pollution but attract large numbers of mobile sources of pollution. Direct emissions from motor vehicles are regulated by the California Air Resources Board.

Both the California and federal Clean Air Acts require designated agencies in the South Coast Air Basin, which is the state's and nation's only "extreme" ozone non-attainment area, to prepare plans documenting actions to meet air quality standards. The SCAQMD and the Southern California Association of Governments (SCAG 1995) are the designated planning agencies. As required by the California Clean Air Act, the SCAQMD revised the regions' Air Quality Management Plan (AQMP) in 1991 to address measures needed to attain state standards. The 1991 AQMP also included measures to reduce toxic emissions and compounds which contribute to global warming.

The federal attainment deadlines in this region are the year 2010 for ozone, 2000 for carbon monoxide, and 2001 for PM10. A plan addressing federal requirements for ozone and carbon monoxide attainment was adopted in September 1994. The 1994 plan, which also revised the 1991 plan for attaining the state standards, will be revised in 1997. It will also address strategies for PM10 attainment.

County

The County of Los Angeles *General Plan* (Los Angeles County Department of Regional Planning 1993 and 1980a) contains policies related to air quality in both its Conservation and Open Space Element and the Land Use Element. The Conservation and Open Space Element has the goal of supporting local efforts to improve air quality. The Land Use Element includes the goal of fostering compatible land use arrangements that contribute to reduced energy consumption and improved air quality.

5.5.2 Existing Conditions

The Los Angeles River watershed is in Los Angeles County, which is part of the South Coast Air Basin under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). Los Angeles County is a non-attainment area for state and national ozone, carbon monoxide and PM10 standards. Although the county now meets the national air quality standard for nitrogen dioxide, it is still designated a non-attainment area for the national standard for this pollutant, as well as for the state one-hour nitrogen dioxide standard. State and national ambient air standards are shown in Table 5.5-1.

**TABLE 5.5-1
AMBIENT AIR QUALITY STANDARDS**

Air Pollutant	State	National	
	Standard	Primary	Secondary
Ozone	> 0.09 ppm, 1-hr avg.	> 0.12 ppm, 1-hr avg.	0.12 ppm, 1-hr avg.
Carbon Monoxide	≥ 9.1 ppm, 8-hr. avg. > 20 ppm, 1-hr. avg.	≥ 9.5 ppm, 8-hr. avg. > 35 ppm, 1-hr. avg.	≥ 9.5 ppm, 8-hr. avg. > 35 ppm, 1-hr. avg.
Nitrogen Dioxide	> 0.25 ppm, 1-hr. avg.	> 0.053 ppm, annual avg.	> 0.053 ppm, annual avg.
Sulfur Dioxide	> .25 ppm 1-hr ≥ 0.05 ppm, 24-hr avg. with ≥ 0.10 ozone or with 24-hr TSP ≥ 100 ug/m ³	> 0.03 ppm, annual avg. > 0.14 ppm, 24-hr. avg.	> 0.50 ppm, 3-hr. avg.
Suspended Particulate Matter (PM 10)	> 50 ug/m ³ , 24-hr. avg. > 30 ug/m ³ annual geometric mean	> 150 ug/m ³ , 24-hr avg. > 50 ug/m ³ annual arithmetic mean	> 150 ug/m ³ , 24-hr avg.; > 50 ug/m ³ annual arithmetic mean
Sulfates	≥ 25 ug/m ³ , 24-hr avg.		

State		National	
Air Pollutant	Standard	Primary	Secondary
Lead	≥1.5 ug/m ³ , monthly avg.	> 1.5 ug/m ³ , calendar quarter	> 1.5 ug/m ³
Hydrogen Sulfide	≥0.03 ppm, 1-hr avg.		
Vinyl Chloride	≥0.010 ppm, 24-hr avg.		
Visibility-Reducing Particles	In sufficient amount to reduce prevailing visibility to less than 10 miles at relative humidity less than 70%, 1 observation		

Note: ppm = parts per million by volume ≥ = greater than or equal to
 ug/m³ = micrograms per cubic meter Source: South Coast Air Quality Management District 1994
 > = greater than

The Los Angeles River flows through South Coast Air Quality Management District Source Receptor Areas 4 (South Coastal); 12 (South Central Los Angeles); 5 (Southeast Los Angeles); 1 (Central Los Angeles); 7 (East San Fernando Valley), and 6 (West San Fernando Valley). Local air quality for each source receptor area is measured at the SCAQMD's monitoring station for that area and reported on annually by the SCAQMD. In 1994, the most recent year for which the SCAQMD has issued a full year's data, peak readings in all the source receptor areas traversed by the River were lower than the peak Basin-wide reading for ozone, nitrogen dioxide and PM10. However, the Basin's peak carbon monoxide concentrations for both one hour and eight hours occurred in Source Receptor Area 12, as has been the pattern for more than five years. Readings at this station are the highest in the nation, and substantially exceed state and national ambient air standards. The Basin's peak concentration of sulfur dioxide occurred in Source Receptor Area 4, but all concentrations were below state and national standards.

Peak ozone, nitrogen dioxide and carbon monoxide concentrations have declined in recent years throughout the Basin. Readings of all pollutants will vary from year to year, depending on meteorological conditions. However, there is little change each year in the locations where high concentrations of each pollutant occur. Therefore, the amount of pollution in one source receptor area relative to another changes very little and can be demonstrated by one year of data. Peak concentrations in 1994 of each pollutant for which Los Angeles County is designated a federal non-attainment area are shown for each of the affected source-receptor areas in Table 5.5-2.

**TABLE 5.5-2
SUMMARY OF 1994 AIR QUALITY DATA*
AT PROJECT-IMPACTED SOURCE RECEPTOR AREAS**

Pollutant Standards	SCAQMD SOURCE RECEPTOR AREA					
	4	12	5*	1	7	6
Ozone (O₃)						
Maximum concentration (ppm)	0.16	0.12	0.19	0.19	0.17	0.14
Number of days state standard exceeded	1	0	12	14	18	7
Number of days national standard exceeded	6	2	47	49	56	51
Carbon Monoxide (CO)						
Maximum concentration 1-hr period (ppm)	12.0	25	8	11	13	14
Maximum concentration 8-hr period (ppm)	8.9	18.1	5.9	8.4	10.7	10.8
Number of days state 1-hr standard exceeded	0	1	0	0	0	0
Number of days national 1-hr standard exceeded	0	0	0	0	0	0
Number of days state 8-hr standard exceeded	0	26	0	0	6	4
Number of days national 8-hr standard exceeded	0	22	0	0	5	4
Nitrogen Dioxide (NO₂)						
Maximum 1-hr concentration (ppm)	0.20	0.20	0.20	0.21	0.18	0.22
Annual average mean (ppm)	0.034	0.049	0.037	0.033	0.04	0.03
Number of days state standard exceeded	6	9	6	2	97	39
Percent national standard exceeded	0	0	0	0	0	0
	0	0	0	0	0	0
Suspended Particulates (PM₁₀)^b						
Maximum 24-hr concentration	97	NM	NM	122	114	NM
Percent samples exceeding state standard	18.3			33.3	18.3	
Percent samples exceeding national standard	0			0	0	

* 1993 data. The monitoring station (Whittier) for Source Receptor Area 5 was closed by the SCAQMD in 1994.

AAM = Annual Arithmetic Mean

ug/m³ = micrograms per cubic meter

ppm = parts per million

NM = Not Monitored

^a Pollutants shown are those for which the South Coast Air Basin is designated as a federal non-attainment area

^b Los Angeles Air Monitoring Station

Source: South Coast Air Quality Management District Air Quality Data—1988 through 1992

5.5.3 Significance Thresholds

The threshold for determining if significant impact on air quality would occur is based on Appendix G of the *California Environmental Quality Act Statutes and Guidelines*. The likelihood for significant impacts on air quality to occur was evaluated on the potential for the proposed project to:

- cause an exceedance of any air quality standard
- substantially increase an existing or projected exceedance
- expose sensitive receptors to substantial pollutant concentrations

The SCAQMD has established emission thresholds of significance to assist lead agencies in determining what constitutes a substantial increase in an existing or projected exceedance of a standard. There are separate standards for construction and operation and these are listed below.

5.5.4 Impact Analysis

Construction

The SCAQMD has determined that the following construction emissions constitute a significant air quality impact.

**TABLE 5.5-3
SCAQMD CONSTRUCTION THRESHOLDS OF SIGNIFICANCE**

Pollutant	Carbon Monoxide (CO)	Nitrogen Oxides (NOx)	Reactive Organic Compounds (ROC)	Sulfur Oxides (SOx)	PM10
Construction Threshold of Significance	24.75 tons/quarter or 550 pounds on individual day	2.5 tons/quarter or 100 pounds on individual day	2.5 tons/quarter or 75 pounds on individual day	6.75 tons/quarter or 150 pounds on individual day	6.75 tons/quarter or 150 pounds on individual day

Construction of the project sites will require only very limited grading and surface preparation. PM10 impacts would occur primarily for hiking and bicycle trail improvements. The greatest potential for PM10 impacts would occur on Reaches 1, 3, and 5. The U.S. EPA estimates that each acre graded or exposed will release 26.4 pounds a day of PM10. Assuming that no more than 5.5 acres are under active grading or exposed at any one time, total daily PM10 emissions from grading and excavation would be less than significant without additional mitigation. If the mitigation measures listed below are employed, which reduce PM10 emissions from grading by 50% are employed, 11 acres may be simultaneously exposed. Quarterly emissions will also be below SCAQMD thresholds, assuming construction occurs on over an 8-hour day, 5 days a week.

Typical construction for similar park projects may require the following equipment: two rubber-tired loaders, 1 skip loader, and one back hoe. Assuming under worst case conditions that all equipment is in use simultaneously for 8 hours each day, equipment emissions are as follows: 16 pounds/day of CO, 6 pounds/day of ROC, 51 pounds/day of NOx, 5 pounds/day of SOx, and 4 pounds/day of PM10.

No off-site soil export is anticipated because soil is redistributed on site; therefore, no trucks are required to transport this dirt. However, additional emissions would occur if soil is temporarily stockpiled on site. These emissions can be reduced to near zero if piles are covered.

In accordance with the typical construction scenario outlined above, ten construction workers are assumed to travel in individual vehicles for a distance of ten miles each way to and from the site each day during the two-week period. Using SCAQMD emission factors for the year 1996, maximum emissions would be 5 (4.93) pounds/day of carbon monoxide. Emissions of all other pollutants would be less than 1 pound/day.

Emissions of all pollutants except PM10 would be below SCAQMD thresholds and would not require mitigation. However, to further reduce potential PM10 emissions, equipment emissions will be reduced below the peak estimates through turning engines off when they are not in use. This will reduce equipment emissions by 10%.

Operation

The SCAQMD has determined that the emission thresholds shown in Table 5.5-4 constitute a significant operational impact.

**TABLE 5.5-4
SCAQMD OPERATIONAL THRESHOLDS OF SIGNIFICANCE**

Pollutants	Carbon Monoxide (CO)	Nitrogen Oxides (NOx)	Reactive Organic Compounds (ROC)	Sulfur Oxides (SOx)	PM10
Operational Thresholds of Significance	550 pounds/day and/or an increase of 1 ppm or .45 ppm that would increase an existing exceedance of state and national 1-hour and 8-hour CO standards, respectively	55 pounds/day	55 pounds/day	150 pounds/day	150 pounds/day
	Source: South Coast Air Quality Management District. <u>CEQA Air Quality Handbook</u> , November, 1993.				

Emissions from implementing the Los Angeles River Plan will not be significant. Trail improvements will attract some hikers and cyclists who will come to the staging area in automobiles. As noted under construction emissions, it would require at least 55 vehicle round trips of 10 miles each way to achieve the lowest thresholds of 55 pounds/day of reactive organic compound or nitrogen oxide emissions. However, actual project use will be non-polluting. Cycling and hiking may substitute for other vehicular-dependent recreational activities, therefore resulting in an overall decrease in vehicle emissions.

There will be a net decrease in PM10 emissions as a result of the project. This improvement will occur because of tree planting and landscaping, which will serve to prevent wind-blown erosion and to trap airborne particulates from both on- and off-site sources.

5.5.5 Mitigation Measures

At a minimum, the following mitigation measures will be employed for all project construction:

1. Prior to beginning construction, all contractors shall identify to the lead agency the actions they will take to comply with SCAQMD Rule 402, which requires that there be no dust impacts offsite sufficient to cause a nuisance, and SCAQMD Rule 403, which restricts visible emissions from construction. Specific measures will include moistening soil prior to grading, daily watering of exposed surfaces or treating with soil conditioner to stabilize the soil; washing truck tires and covering loads of dirt transported offsite; ceasing grading during periods of high winds (over 20 miles per hour); and paving, coating or seeding graded areas at the earliest possible time after soil disturbance.
2. Maintain all construction equipment in peak operating condition so as to reduce operational emissions.
3. Use low-sulfur diesel fuel in all equipment.
4. Turn off equipment when it is not in use.

Where preliminary studies indicate that PM10 emissions, after mitigation, would approach SCAQMD significance thresholds, additional mitigation measures would be employed to further reduce PM10 emissions for a total of a 70% reduction. These measures include additional watering before commencing grading as necessary to compact soil and at least twice daily watering of exposed surfaces to insure a constant surface crust in order to prevent wind erosion.

The combination of mitigation measures and limits on the acreage under construction will reduce all construction emissions to less than significant.

Emissions from implementing the Los Angeles River Plan will not be significant, therefore no mitigation measures are necessary.

5.6 TRANSPORTATION/CIRCULATION

This portion of the environmental analysis describes: applicable general plan policies related to transportation and circulation for the proposed elements; existing transportation and circulation systems within the surrounding areas of the proposed project elements; thresholds of significance for transportation and circulation issues; an assessment of the potential for the proposed project to result in significant impacts on the proposed project; and if necessary, mitigation measures.

5.6.1. Regulatory Framework

State

Any mitigation in State right-of-way will require a Caltrans Encroachment Permit. Mitigation in excess of \$300,000.00 will require a Caltrans Project Study Report.

County

The County of Los Angeles *General Plan* (Los Angeles County Department of Regional Planning 1993 and 1980a) includes the following pertinent policies related to traffic and circulation: plan and develop bicycle routes and pedestrian walkways; and encourage greater use of public transit to special-purpose centers and recreational facilities. The *Highway Policy* map of the County of Los Angeles *General Plan* (Los Angeles County Department of Regional Planning 1991c) indicates existing and potential routes, highways, and expressways intended to serve urban and urban-related areas. The *Transportation Policy* map of the County of Los Angeles *General Plan* (Los Angeles County Department of Regional Planning 1984d) shows existing and potential routes of travel including: freeways, transit ways, commuter rail line, railway line, airports, and harbors. The *Plan of Bikeways* map of the County of Los Angeles *General Plan* (Los Angeles County Department of Regional Planning 1984a) includes existing and future bikeways and Park and Ride Lots.

Local

Local jurisdictions, including the Cities of Long Beach, Carson, Los Angeles, Vernon, Maywood, Bell Gardens, Bell, Commerce, Cudahy, South Gate, Downey, Lynwood, Paramount, Compton, Glendale, and Burbank, have their own circulation element goals and objectives that the proposed project must follow when falling within the particular jurisdiction.

5.6.2 Existing Conditions

Existing conditions for traffic and circulation are described from the data base compiled for the Transportation Analysis contained in the *Master Environmental Impact Report for the Los Angeles County Drainage Area Project* (Los Angeles County Department of Public Works 1994). Projects included in the *Los Angeles River Master Plan* are associated with the enhancement of the river aesthetically, economically, and environmentally. These projects are located on properties immediately adjacent to the rights of way of the Los Angeles River and Tujunga Wash or within a short distance of it. The properties either are existing park/recreational facilities, are in an undeveloped state,

are in use as major utility corridors, or are blighted properties designated for redevelopment. All of the projects considered in the *Los Angeles River Master Plan* are in developed areas, with existing transportation routes. A summary of the project reaches under consideration for site-specific economic and recreation development activities that have the potential to result in the generation of vehicle trips area summarized in Table 5.6-1, *Existing Traffic Conditions*.

The study area for the transportation and circulation analysis was delineated as the nearest major intersection to a proposed project element involving site specific economic development or recreation activities that have the potential to generate additional vehicle trips. Economic development includes opportunities to improve business development to support recreational uses along the Los Angeles River. Bike/skate and equipment rental facilities, food concessions, and open-air markets are specific examples of such economic opportunities. Other proposed project elements that have a potential to have an affect on transportation and circulation are development of local parks and bicycle staging areas.

Major arterial intersections in the vicinity of the proposed improvements range from Level of Service (LOS) A, equivalent volume to capacity ratio of 0.00 to 0.60 down to LOS C, equivalent volume to capacity ratio of 0.71 to 0.80. None of the nearest major intersections identified in the vicinity of the proposed economic and recreation improvements were identified as currently being at LOS E or F. Most of these intersections experience peak traffic conditions in the early morning and late evening.

TABLE 5.6-1 EXISTING TRAFFIC CONDITIONS

Location (Sheet No.)	Site Specific Project Recommendations	Access	Nearest Major Intersection	Existing Nearby Parking
SOUTHERN CITIES – REACH NO. 1				
Sheet No. 1 Long Beach	Bike Rental or Food Concessions	Existing access is provided via Golden Shore Ave., W. Shoreline Dr., and Queens Way.	Intersection of Ocean Blvd. and I-710.	Existing nearby public parking available.
Sheet No. 15 Long Beach	Skate/Bike Rentals north of Artesia Blvd. Park improvements north of Artesia Blvd.	Existing access is provided via Artesia Blvd. and 67th Street.	Intersection of Atlantic Blvd. and SR-91.	Existing public parking is available at Coolidge Park to the west of the Los Angeles River and at David Starr Jordan School.
MID-CITIES – REACH NO. 2				
Sheet No. 18 Paramount	Bike/Skate Rentals at Ralph Dills Park	Existing access is provided via Compton Blvd. to San Luis St. and San Antonio Ave.	Intersection of Compton Blvd. and Orange Avenue.	Existing public parking is available at Ralph Dills Park, Compton Par 3 golf Course and Dominguez High School.
Sheet No. 20 South Gate	Bike/Skate Rentals at Hollydale Park	Existing access is provided via Garfield Ave. to Monroe Ave.	Intersection of Garfield Avenue and E. Imperial Highway	Existing public parking is available at Hollydale Park.

TABLE 5.6-1 EXISTING TRAFFIC CONDITIONS

Location (Sheet No.)	Site Specific Project Recommendations	Access	Nearest Major Intersection	Existing Nearby Parking
Sheet No. 25 Cudahy	Bike and skate rentals at Cudahy Park	Existing access provided via Santa Ana St. to Park Ave..	Intersection of Santa Ana St. and Atlantic Ave.	Public parking provided at Cudahy Neighborhood Park.
Sheet No. 26 Bell	Bike and skate rentals and food concession at Parking Lot at Florence Ave..	Existing access provided via Florence Ave..	Intersection of Florence Ave. and I-710.	Parking would be included in the proposed location, parking lot at Florence Ave..
Sheet No. 29 Maywood	Bike and skate rentals at Maywood Park. Recreation area.	Existing access provided via Heliotrope Ave..	Intersection of Atlantic Blvd. and Slauson Ave..	Public parking provided at Maywood Park.
DOWNTOWN – REACH NO. 3				
Sheet No. 40 Los Angeles	Downey playground expansion.	Existing access provided via Broadway to Ave. 18.	Intersection of N. Broadway and I-5.	Public parking provided at Downey Playground.
Sheet No. 41 Los Angeles	Open-air markets at Broadway Park and River overlook at Broadway St.. Park at Cornfields.	Existing access provided via N. Broadway St..	Intersection of Broadway St. and Spring St.	Public parking provided at Downey Playground and Elysian Park.

TABLE 5.6-1 EXISTING TRAFFIC CONDITIONS

Location (Sheet No.)	Site Specific Project Recommendations	Access	Nearest Major Intersection	Existing Nearby Parking
GLENDALE NARROWS – REACH NO. 4				
Sheet No. 50 Los Angeles	Bike and skate rentals at existing commercial area at Los Feliz Golf Course.	Existing access provided via Los Feliz Blvd..	Intersection of Los Feliz Blvd. and I-5.	Public parking at Los Feliz Golf Course.
Sheet No. 58/85 Los Angeles	Par course on east side of Tujunga Wash.	Existing access provided via Moorpark St..	Intersection of Moorpark St. and Laurel Canyon Blvd.	Limited public parking is available on local streets.
SAN FERNANDO VALLEY – REACH NO. 5				
Sheet No. 66/67 Los Angeles	Open air market and bike and skate rentals on existing vacant 0.5 acre lot. Riverside Park.	Existing access via Ventura Blvd.	Intersection of Ventura Blvd. and Laurel Canyon Blvd. Intersection Ventura Blvd. and Whitsett Ave.	Limited public parking is available on local streets.
Sheet No. 84 Los Angeles	Open air market on Canoga Ave.	Existing access via Jordan St.	Intersection of Owensmouth Ave. and Vanowen St.	Public parking is available at the Park n' Ride lot located north of the Topanga Mall.

TABLE 5.6-1 EXISTING TRAFFIC CONDITIONS

Location (Sheet No.)	Site Specific Project Recommendations	Access	Nearest Major Intersection	Existing Nearby Parking
TUJUNGA WASH – REACH NO. 6				
Sheet No. 92 Los Angeles	Skate/bike rentals/sidewalk vendors. Mini-Park between Tujunga Wash and strip mall market.	Existing access via Victory Blvd.	Intersection of Victory Blvd. and Coldwater Canyon Blvd.	Public parking is available at the Victory Plaza parking lot.
Sheet No. 96 Los Angeles	Open air market/staging for trails/ bike and skate rentals.	Existing access at Roscoe Blvd.	Intersection of Roscoe Blvd. and Ventura Canyon.	Public parking available at the existing church parking lot.

5.6.3 Significance Thresholds

The threshold for determining if significant impacts on transportation and circulation would occur is based on Appendix G of the *California Environmental Quality Act Statutes and Guidelines*. The likelihood for significant impacts on transportation and circulation to occur was evaluated based on the potential for the proposed project to result in:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.

The *County of Los Angeles Traffic/Access Guidelines* defines an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system as one which causes the 0.85 volume-to capacity threshold to be exceeded.

5.6.4 Impact Analysis

Precise trip generation numbers are unavailable for the economic development projects as a result of not having specific design plans outlined in the *Los Angeles River Master Plan*. However, as a result of the proposed project elements located in an existing developed area, the small-scale improvements of the *Los Angeles River Master Plan*, are not expected to cause a substantial increase in traffic in relation to the existing traffic load and capacity of the street system.

The number of new trips that will be generated by the proposed bike/skate rental project element is modeled after the Long Beach/Belmont Shores program. As trip generation is unavailable for this land use through standard sources, WILTEC, Inc., a traffic survey and engineering firm, contacted an operator of 14 similar shops located in Long Beach. The proprietor of these bike/skate rental shops, noted that the majority of the business took place over a 90-day period, especially between Memorial Day in May and Labor Day in September. Hours of operation for these shops were open from 9:00 m - 4:00 pm daily, with most business occurring over the weekends. All shops have approximate 1,500 square feet of floor area.

The average weekday volume is 25 rentals, with no rentals occurring during the 7:00 am to 9:00 am morning on-street peak period. There is an average of 2 rental returns during the 4:00 m to 6:00 pm on-street evening peak period. The Saturday peak period for rentals is 11:00 am to 12:00 pm, with an average of 10 rentals occurring at this time. In order to use these numbers as a trip generation, WILTEC assumed the worst case scenario, in which each patron drove their vehicle to the project element sites.

The bike/skate rental shops are considered to have an insignificant impact on local traffic. The peak traffic volume generated is during the Saturday peak period. A total of 10 additional vehicles could be added to the existing traffic volumes. In calculating a volume to capacity ratio, and using worst case scenarios, (i.e. all traffic is in the highest volume critical movement), the change in the volume to capacity ratio would only be 10/1600 or 0.00625, less than one percent. The calculated increases are below the significance threshold for requiring mitigation.

5.6.4 Mitigation

There are no anticipated increases in traffic that are substantial in relation to the existing traffic load and capacity of the street system that would result in significant impacts on traffic and circulation. Therefore, there are no recommended mitigation measures.