6.1 Purpose, Scope, and Content

The Circulation Element addresses Mojave’s anticipated future transportation and circulation needs. Circulation has always been a major component of the community’s growth and success, from the time of the 20 Mule Team, through development of the railroads, highways, and airport, and continuing today with the new SR-58 Freeway.

The Circulation Element addresses current and planned roadways, roadway access guidelines, bikeways, pedestrian facilities, the potential for future transit service, and the need for a number of railroad and roadway crossings throughout the Plan area. The Circulation Plan establishes a safe, efficient circulation system that supports land uses consistent with the Mojave Specific Plan Map and minimizes negative impacts on adjacent land uses.

6.2 Overview of Baseline (2001) Conditions

Within the Mojave area, the circulation system is composed of expressways, arterials, collectors, and local streets. State Route 14 (Sierra Highway) bisects the area, traveling north-south. This highway connects Mojave with the Antelope and Santa Clarita Valleys and Los Angeles County to the south, and Ridgecrest, Bishop and the Sierra Nevada mountain range to the north. State Route 58 (Mojave-Barstow Highway), a major east-west highway that connects Barstow to the east and Bakersfield to the west, also bisects the area. SR-58 serves as a primary truck route for long-haul vehicles transporting goods between California and areas in the east.

Arterial roads in Mojave generally coincide with survey section lines. Arterials have a 110-foot right-of-way. Collectors generally are located on mid-section lines, with a 90-foot right-of-way. A system of local roadways is also present in Mojave, and many dirt roads have been graded along section lines.

Public transportation in Mojave consists of fixed-route bus lines and demand-responsive services. Kern Regional Transit provides a single fixed route as well as dial-a-ride services. The system links Mojave to Bakersfield, Tehachapi, California City, Ridgecrest, Rosamond, Lancaster, and Palmdale. Greyhound provides intercity bus service to destinations throughout the United States. There are currently three northbound and four southbound Greyhound trips stopping in Mojave.
A major transportation facility is the Mojave Airport, Civilian Flight Test Center. The Mojave Airport centralizes cutting edge aviation, high-tech manufacturing, and light industrial companies. The airport currently (2001) has over 50 companies with employment of over 1,300 skilled technical personnel. Uses at the airport range from general aviation, short and long term storage of aircraft, maintenance and modification services, and experimental rocket, space, and aircraft development and testing.

Two rail lines traverse the Plan Area, and approximately 60 to 70 trains per day run through Mojave (operated by the Union Pacific Railroad (UPRR) and the Burlington Northern/Santa Fe Railway (BSNF)). No passenger service is provided on either rail line.

6.3 Planning Issues

Growth in the Mojave area will require construction of additional arterial, collector, and local streets to serve local needs. Given that existing roadways extending into and through future growth areas have been constructed to rural standards, developers will be required to upgrade/improve such facilities to support proposed development, and responsible government agencies will need to assess and adjust transit service needs over time in response to community growth.

To accommodate the level of urban development permitted by this Plan, new and substantially improved roadways are required. The circulation system needed to serve the area will consist of new arterial and secondary roadways traversing Mojave and connecting to existing roadways, SR-58, and SR-14. Bikeways and sidewalks are components of several of these roadways, as are potential future traffic signals and driveway access points. The bicycle has become a viable and attractive alternative mode to the automobile for many people, particularly for short and intermediate distance trips. Bicycle riding will be encouraged within Mojave through the provision of a safe, efficient network of bike paths and bike lanes, particularly in the newly developing areas. Promotion of biking as an alternative to auto travel offers many benefits to the community, including improved air quality.

Walking is often the fastest and most convenient mode of travel for short trips, particularly in the Central Mojave business district. Significant opportunities exist to plan Mojave in such a way as to minimize the need for and reliance upon automobiles for all trip-making needs. Walking is also an important travel mode that needs to be provided for in all new developments in the Mojave area. Additional connections between new components of the pedestrian system should be considered in those currently developed areas of Mojave that are without sidewalks. In residential areas, walking is often a recreational activity.

The south junction of SR-58 and SR-14 experiences significant congestion during peak travel times. Truck traffic, which comprises about 25 percent of the total traffic volume at this location, contributes substantially to traffic delays. One of the primary justifications for the SR-58 Freeway is to improve truck circulation through the Mojave
area. The extent to which the freeway is successful in diverting truck traffic will have a direct impact on level of service for the two main streets in Mojave: Sierra Highway and the Mojave-Barstow Highway. Both of these streets will carry the SR-58 Business Route designation following construction of the new freeway.

Central Mojave experiences unique traffic problems. The combination of heavy truck traffic, highway services, railroad corridors, and residential neighborhoods in a relatively confined space creates traffic congestion and encourages drivers to use residential streets as alternative routes to travel through the community. The extent to which the new SR-58 Freeway is successful in diverting truck traffic will have a direct impact on level of service for streets in Central Mojave. However, the problem of cut-through traffic on residential streets is likely to remain a significant issue.

The UPRR and BNSF railway lines traverse and divide the community and require motorists to travel some distances to cross the tracks. The safety and efficiency of the future circulation system depends on provision of safe and convenient railroad crossings at key locations throughout the Plan area. The Oak Creek Road overpass has improved the safety and convenience of railroad crossings, but is not adequate to support long-term circulation needs. Residential uses planned for the west side of the community must easily and safely connect to employment centers planned on the east side. Additional grade-separated roadway crossings are also necessary to improve and facilitate access and vehicle circulation over time.

The California Public Utilities Commission (PUC) regulates railroad crossings throughout the State. For public safety reasons, the PUC generally does not support construction of new at-grade railroad crossings. As a result, neither frontage road adjacent to the SR-58 Mojave Freeway crosses the Union Pacific Railroad, creating potential circulation impacts for warehousing and light industrial uses that may locate adjacent to the freeway. Similar impacts may be observed due to the lack of a BNSF crossing and lack of a grade-separated SR-14 crossing at Arroyo Avenue and Purdy Avenue.

Highway 58 will be redesignated as SR-58 Business Route following completion of the SR-58 Freeway. Benefits of this designation include specialized signage on the SR-58 Freeway announcing Mojave as a destination offering traveler services, and continued Caltrans administration of SR-58 where it coincides with Highway 14 through Mojave, otherwise, SR-58 will be maintained by Kern County. As the freeway will reduce travel time between Barstow and Bakersfield, Mojave will have to compete with other potential travel service centers. Easy and convenient access to businesses along SR-58 Business Route will be critical to maintaining the economic center of Mojave.

6.4 Element Goals

Circulation Element goals, objectives and policies focus on ensuring a safe, efficient, and comprehensive transportation system that serves residents and commercial and industrial businesses. The importance of promoting alternative transportation modes is highlighted to ensure a diversity of transportation options. Other key components
include improving physical road conditions in Central Mojave, supporting safe and convenient railroad crossings, and promoting the SR-58 Business Route for local businesses.

The following element goals will guide future circulation planning:

- Provide for adequate circulation to support future growth.
- Improve circulation in Central Mojave.
- Construct safe and convenient railroad and roadway crossings.
- Plan for the growth and success of the SR-58 Business Route.

6.5 Circulation Objectives and Policies

The following objectives and policies demonstrate the County’s commitment to providing regional and local circulation improvements in Mojave. These objectives and policies will be accomplished through timely completion of the implementation actions detailed in Chapter 10.

As the Mojave population grows and the area experiences more urban development, development of a circulation system that adequately serves residents and businesses is crucial. The following objectives and policies provide detail regarding the roadways and alternative transportation modes needed to serve the Mojave community.

Roadway System

To ensure that Mojave residents can move easily within the community and to regional travel routes, the roadway system has been sized to handle anticipated future traffic volumes. To determine these requirements, a forecasting technique was used in which the average number of daily vehicle trips generated by each land use was determined and assigned to the proposed roadway system. Adjustments to the circulation system were made until the system was considered capable of accommodating the peak traffic condition consistent with the County’s goal of achieving Level of Service “D” conditions.

Within the Plan area, the circulation system is composed of freeways, highways, expressways, arterials, collectors, and local streets. In addition, frontage roadways will be located parallel to freeway alignments of both SR-14 and SR-58 within the Plan area. As described in the Land Use Element, development is expected to occur throughout the Plan area. Based upon travel demand forecasts and the goal of maintaining a Level of Service “D” standard, Figure 6-1 identifies the Mojave Specific Plan street system and functional classifications.

Most roadways in the Specific Plan area conform to the County’s long-standing policy of developing arterials aligned to section lines and collectors aligned to mid-section lines. Where local conditions require deviation from that practice, a conceptual alignment is shown in Figure 6-1, and a Specific Plan line must be adopted.
Element Goal: Provide for adequate circulation to support future growth.

**Objective 6.1:** Provide adequate transportation facilities to serve area residents and commercial and industrial businesses.

**Policy 6.1.1** (F-1, F-5)
Provide and maintain a circulation system that supports the types and intensities of land use in Mojave.

**Policy 6.1.2** (A-1, A-3, F-1, K-6)
Provide a roadway network consistent with the County’s circulation grid policy. The network shall consist of arterials that are to be constructed on approximately one mile spacing and collectors that would be constructed on approximately half-mile spacing. The roadway network includes the following components:

- **Freeways** are high-speed facilities with full access control. Access and egress to freeways are provided by a system of ramps and interchanges. There are no at-grade intersections on freeways and no traffic control devices such as traffic signals. Right-of-way and cross-sections for freeways are determined by Caltrans on a case-by-case basis. The SR-58 Freeway and portions of SR-14 are freeways within the Specific Plan area.

- **Expressways** are high-speed facilities with access limited primarily to grade separations and at-grade intersections. These major highways carry high volumes of traffic from region to region and may serve local businesses directly as well. Right-of-way and cross-sections for expressways are determined by Caltrans on a case-by-case basis. Mojave-Barstow Highway, Sierra Highway, and SR-14 north of Central Mojave are expressways within the Specific Plan area.

- **Arterials** are major highways with at least partial control of access to improve traffic movement. Arterial roadways are generally divided by direction and have multiple through lanes with turn lanes. Arterials have limited access to adjacent land uses and provide a linkage between expressways, collectors, and local streets. Adjacent land uses should, where possible, avoid relying on arterials for parking. Arterials in Mojave are generally located on section lines and have a 110-foot right-of-way.

- **Collectors** are secondary highways providing multiple lanes (2 or 4) to improve traffic movement, and may have turn lanes. Collectors provide access to adjacent land uses and the local street system and generally will accommodate on-street parking. These roadways link arterials with local roads. Collectors are
designated in this Specific Plan as appropriate for bike lanes. Within the Specific Plan area, they are generally located on midsection lines with a 90-foot right-of-way.

**Local Streets** are designed exclusively for property access, typically with a single travel lane in each direction. They are intended to carry low volumes of traffic and support unrestricted on-street parking. Local streets are not shown on the Circulation Plan, and are not considered to be Circulation Element roadways. It is the policy of the County to limit commercial access to local streets to neighborhood commercial uses. Local streets in the Specific Plan area generally have a 60-foot right-of-way.

**Policy 6.1.3 (F-3)**
Alignments for the following roadways depicted in Figure 6-, or any other arterial or collector that deviates from section or midsection lines, respectively, shall require the adoption of a Specific Plan Line. Specific Plan lines: Rosewood Boulevard, United Street, and 5th Street. Subdivisions adjacent to Specific Plan lines must reserve and/or dedicate rights of way for these alignments.

**Policy 6.1.4 (A-1, A-3, F-2)**
With the exception of State highways, all roadways and rights-of-way shall be constructed to Kern County Development Standards. State highways shall be constructed to Caltrans standards.

**Policy 6.1.5 (A-1, A-3)**
Dedications for all arterial and collector streets associated with subdivision maps will be consistent with this Specific Plan.

**Policy 6.1.6 (F-2, F-4, K-6)**
Coordinate with developers for the improvement of local streets in conjunction with an approved phased development, subject to approval of the Roads Department in accordance with the Kern County Land Division Ordinance and Kern County Development Standards.

**Policy 6.1.7 (F-1, F-2)**
Design roadway capacities utilizing the Circulation Element hierarchy of streets to adequately support planned land uses.

**Policy 6.1.8 (F-5, F-12)**
Maintain a minimum service level of “D” or better on Circulation Element roadways. Maintain a minimum service level of “C” or better on Caltrans roadways.

**Policy 6.1.9 (F-4, F-12, K-6)**
Require new development to contribute to the financing of roadway improvements, including, lighting, roadway, railroad crossings, and traffic signals required to meet the demand generated by the project.
Policy 6.1.10  (F-12)

Pursue transportation funding from regional, state, and federal sources for future circulation improvements.

Policy 6.1.11  (F-1)

Interchanges or grade separations at the SR-58 Freeway at the intersection of historic 20 Mule Team Road and the Rosewood area, as well as at Purdy Road and SR-14, should be studied. A southern bypass connecting SR-58 to SR-14 through the southeast portion of the Specific Plan Area should also be evaluated in the future.

Signalized Intersections

The Mojave Specific Plan Circulation Map illustrates proposed future signalized intersection locations based on estimated future traffic volumes. The need for traffic signalization at these and additional intersections will be determined as growth occurs in the Mojave area. The Kern County Roads Department utilizes traffic signal warrants to determine the need for the installation of a traffic signal. Traffic signal warrants are met at an intersection when certain predetermined traffic volume and delay thresholds are met.

Policy 6.1.12  (F-10, F-12)

The decision to install a traffic signal at any location identified on the Circulation Map shall be based upon meeting warrants described in the Caltrans Traffic Manual and constructed on an as needed basis, as administered on a case-by-case basis by the Kern County Roads Department. This process shall be administered through Policy 6.1.9 and related implementation.

Driveway Access

In order to maintain the highest level of service standards possible, the following driveway access policies shall apply to new roadways.

Policy 6.1.13  (F-1)

Roadways for new development shall be developed in accordance with Kern County Development Standards.

Policy 6.1.14  (F-3)

Final driveway access locations and design shall be determined through acquisition of an encroachment permit from the Kern County Roads Department at the time development occurs.

Objective 6.2: Expand alternative transportation modes.

Bikeways

The planned bicycle facilities network is shown in Figure 6-2. Caltrans has developed statewide standards and definitions for the planning, design, and implementation of bicycle facilities. Kern County implements these bikeway standards through the Roads Department.
As Figure 6-2 shows, a mix of Class I, Class II, and Class III facilities is proposed. A Class I facility is proposed between Arroyo Avenue and Purdy Avenue. This facility would be placed between Sierra Highway and the Union Pacific Railroad right-of-way. There is a service road adjacent to the railroad tracks. The land between this service road and Sierra Highway is generally undeveloped and ranges from about 65 feet to 85 feet in width. This Class I facility would provide connectivity with the east and west side of Mojave and the commercial core of Central Mojave off Sierra Highway. To construct this bikeway, the County would need to acquire the right-of-way through fee or easement.

Several Class II facilities are proposed which will tie the residential areas of Mojave to schools, parks, commercial and employment centers. The Class II facilities would be located on secondary arterials and would be designed according to Kern County and Caltrans standards.

**Policy 6.2.1 (F-8)**

Improve the biking environment by providing safe and attractive bike lanes and bike paths.

**Policy 6.2.2 (F-8)**

Caltrans bicycle facility standards, as administered by the Kern County Roads Department, are hereby incorporated by reference. These standards describe the following three types of bicycle facilities, as illustrated on Figure 6-2:

- **Class I Bike Paths** provide a complete separated facility designed for the exclusive use of bicycles and pedestrians with minimal crossflows by motorists. Caltrans standards call for Class I bikeways to have 8 feet of pavement with 2 foot graded shoulders on either side, for a total right-of-way of 12 feet. These bikeways must also be at least 5 feet from the edge of a paved roadway.

- **Class II Bike Lanes** provide a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted. Caltrans standards generally require a 4 foot bike lane with a 6 inch white strip separating the roadway from the bike lane.

- **Class III Bike Routes** provide a right-of-way designated by signs or permanent markings and shared with pedestrians and motorists. Roadways designated as Class III bike routes should have sufficient width to accommodate motorists, bicyclists, and pedestrians. Other than a street sign, there are no special markings required for a Class III bike route.

**Policy 6.2.3 (F-8)**

Encourage new commercial developments to include provisions for bicycle parking and storage, including bicycle racks and/or stands adjacent to both public and private parking lots.
LEGEND

Specific Plan Area
Railroad
Proposed Bike Path (Class I)
Proposed Bike Lane (Class II)
Proposed Bike Route (Class III)
School/College Location
Bicycle Parking Facilities

Figure 6-2
Bicycle Facilities
Pedestrian Facilities

Development of the Mojave circulation network should also provide a safe, convenient, and amenable pedestrian environment.

Policy 6.2.4 (F-8, F-12, N-2) Provide adequate sidewalks, pedestrian traffic signals at busy traffic locations, and pedestrian paths and connections consistent with the requirements of this Specific Plan, Kern County Land Division Ordinance, and Kern County Development Standards.

Policy 6.2.5 (F-8, N-2) Promote the role of pedestrian facilities as a design component of new residential developments, commercial centers, and the industrial park area, including connections between pedestrian pathways in new residential developments and pedestrian plazas in new employment centers.

Policy 6.2.6 (F-8, F-9) Coordinate pedestrian improvements with transit service at existing and proposed transit stops.

Future Transit Service

As Mojave continues to develop, transit service expansion will be actively pursued to provide an alternative means of travel to the automobile.

Policy 6.2.7 (F-9) Support efforts of Kern Regional Transit (KRT) to provide mass transit service and other alternative transportation modes to Mojave residents. Work with Kern Regional Transit to develop additional routes and services linking residential areas in the western portion of the Specific Plan area with newly developing job centers in the eastern portions. This may include the establishment of an assessment district to fund expansions.

Policy 6.2.8 (F-9) Investigate potential future transit service within the following corridors: Rosewood Avenue, Purdy Avenue, Holt Street, 40th Street West, Dominion Street, Sierra Highway, Mojave-Barstow Highway, and 20th Street East.

Policy 6.2.9 (F-9) Work with Kern Regional Transit to evaluate the need and potential for expanding existing transit service connecting Mojave with Bakersfield, California City, Tehachapi and the Antelope Valley.

Policy 6.2.10 (F-9) Require new development projects, when appropriate, to incorporate transit access and facilities in their design and layout.
Element Goal: Improve circulation in Central Mojave.

Objective 6.3: Improve physical road and traffic conditions in Central Mojave.

Policy 6.3.1 (F-1, F-6)
Continue efforts to reduce adverse impacts of truck traffic in Central Mojave while recognizing the community’s economic dependence on trucking.

Railroad and Roadway Crossings

The Specific Plan promotes construction of several additional railroad crossings and grade-separated roadway crossings, as illustrated in Figure 6-1. These improvements include primarily at-grade rail crossings, although a number of grade-separated rail crossings are also proposed. The determination as to whether an at-grade or grade-separated crossing is required is based on a variety of factors, including the number of trains per day, potential improvements to circulation system performance, and the regulatory process governing approval of at-grade rail crossings.

Three of the proposed grade separations are over the railroad, including a new overcrossing of the Union Pacific Railroad (UPRR) mainline adjacent to Sierra Highway, and two new overcrossings of the Burlington Northern Santa Fe (BNSF) mainline south of Mojave-Barstow Highway. Two additional at-grade crossings are proposed on each of the SR-58 Freeway frontage roads at the UPRR spur.

Ten roadway grade separations are also proposed as part of the Specific Plan circulation system. Eight are located on SR-58 at Sierra Highway (North Business 58), SR-14, Rosewood Boulevard, Benton Avenue, Arroyo Avenue, Twin Butte Avenue, Denise Avenue and Altus Avenue (South Business 58). Three of these separations at Sierra Highway (North Business 58) will be constructed as part of the Mojave Freeway project. They will provide east-west connectivity across the SR-58 Freeway and frontage roads.

In order to best serve growth and development in the southern portion of the Specific Plan area, a new grade separated interchange is proposed on SR-14 at Purdy Avenue. Without this and the grade separation projects noted above, future travel will be severely constrained and ineffective.

Element Goal: Construct safe and convenient railroad and roadway crossings.

Objective 6.4: Provide safe and convenient railroad crossings.

Policy 6.4.1 (F-7)
Continue to work with the Public Utilities Commission (PUC) to permit new railroad crossings for the frontage roads adjacent to the SR-58 Freeway, at Purdy Avenue, at Arroyo Avenue and the BNSF railway, and at other locations specified on Figure 6-1.
Objective 6.5  Provide safe and convenient roadway crossings.

Policy 6.5.1 (F-7, G-1) Establish and monitor thresholds for roadway grade separations that benefit development in the Specific Plan area. Coordinate with Caltrans to complete the roadway grade separations between State routes and County roads specified on the Mojave Specific Plan Circulation Map as development thresholds are met.

Policy 6.5.2 (F-4, F-10, F-12) Monitor potential traffic hazards at intersections within residentially designated areas.


Objective 6.6: Retain the SR-58 Business Route as a key travel corridor for visitors.

Policy 6.6.1 (H-3) Develop a unique landscape and urban design theme for the SR-58 Business Route. Provide for consistent, attractive design that emphasizes Mojave’s small-town history and the role of the Airport and railways in the historic development of the community.

Policy 6.6.2 (I-5) Work with Caltrans, the County Roads Department, and the Kern County Economic Development Corporation to provide signage and landscaping for the SR-58 Business Route. Maintenance of landscaping along the Route shall be the sole responsibility of adjoining property owners or a private landscape maintenance entity.

Policy 6.6.3 (B-2) Encourage continued development of travel-related commercial businesses and services along the SR-58 Business Route through the community of Mojave. Strip commercial will not be encouraged along this route, especially outside the community area.
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