CIRCULATION ELEMENT INTENT

The intent of the Circulation Element of the General Plan is to provide for the efficient transportation of people and goods throughout the Red Bluff Sphere of Influence. To that aim, the Circulation Element contains goals, objective, policies, and programs designed to maintain and improve circulation. In addition, it contains an assessment of the current circulation conditions in the area and provides recommendations for improvements to the transportation systems anticipated as being required based on the Land Use map included in the General Plan.

It is also the intent of this element to be integrated with the overall General Plan, as other elements must be considered as having strong interrelationships with circulation. Vehicular, rail and air traffic are significant generators of noise in the Red Bluff area. For this reason, noise considerations are part of this Circulation Element.

Land use and circulation are interlinked by the primary need for circulation results from disparate locations of needed land uses. To illustrate, if one lived adjacent to close place of work and in close proximity to shopping, then one's demand for circulation is significantly reduced. Mixed and integrated land uses are considered mitigations for circulation impacts. For this reason, housing is included in the Circulation Elements.

Housing is also interrelated with circulation. The location, density, and build-out volumes are prime factors in determining circulation system needs. Accurate determination of housing needs, coupled with the intelligent location of such, can minimize demands on a circulation system. For this reason, housing is included in the Circulation Element.

Safety is another element vitally linked to circulation. Safety services, such as police, fire, and ambulance, require a circulation system adequate to

gain access to victims or put out fires, wherever they may be. Likewise, hazardous substances are transported on circulation systems and must be considered. For these reasons, safety is addressed in the Circulation Element.

EXISTING CONDITIONS

The City of Red Bluff is served by an extensive network of various types of roadways, as defined by the 1985 Highway Capacity Manual. These include:

FREEWAY: Characterized by high speed and limited and controlled access, freeways primarily serve regional and long distance travel.

RURAL HIGHWAY: Rural highways are generally higher speed, medium capacity two-lane roadways with one lane for travel in each direction. Passing of slower vehicles requires the use of the opposing lane where traffic gaps allow. Undivided multi-line highways without full control of access as found in freeways may also be classified as rural highways.

ARTERIAL: Major: These streets are generally higher speed, higher capacity transportation corridors that link the community with highways and freeways.

Minor: Medium speed and medium capacity, these roads are principally for travel between larger land uses within the community.

COLLECTOR: Relatively low speed and low capacity; collector streets are generally two lanes connecting neighborhoods with other neighborhoods as well as with the arterial system.

LOCAL STREET: Local streets are low speed; low capacity streets that provide direct access to adjacent land uses and are typically meant only for local, as opposed to through, traffic.

Source: Highway Capacity Manual (1985), p. 8-2.

Table 1 shows the designations for all freeway, rural highway, arterial, and collector roadways in the Red Bluff area. A graphic illustration of the roadway system is shown in Figure 1.

TABLE 1

ROADWAY CATEGORIES

CITY OF RED BLUFF

GENERAL PLAN AMENDMENT N. 18

1991 CIRCULATION ELEMENT

The circulation system of Red Bluff encompasses a great many transportation methods and facilities. The facilities hierarchy includes: Interstate 5, state highways, local roadways, intersections and parking; while other circulation methods include: rail, truck, public, bicycle and air transportation.

INTERSTATE 5

It connects Red Bluff north to the regional center of Redding and south to the major metropolitan area of Sacramento. There are four points of access to the interstate from Red Bluff (see figure 2):

- The South Red Bluff Interchange and Diamond Avenue separation is located south of the city center east of the airport, is configured in two parts due to a Southern Pacific Railroad underpass along the freeway. This interchange allows northbound traffic to exit Interstate 5 onto Old Highway 99 and southbound traffic to exit Interstate 5 either onto Diamond Avenue or onto Old Highway 99. Entering the freeway, it is possible to travel north or southbound from Old Highway 99 but only northbound from Diamond Avenue. This interchange is significant for traffic destined for the industrial and commercial areas in the southern portion of the City.
- The East Red Bluff Interchange is located just east of the downtown area, is the main interchange in Red Bluff. It is a full cloverleaf configuration, allowing traffic to enter and exit the freeway in any combination of origin and destination. This interchange is heavily used by traffic originating or destined for the downtown as well as most residential area. It further provides interconnection between State Route 36, State Route 99, and Interstate 5 for interregional transit.

FIGURE 2

INTERSTATE 5 INTERCHANGES

- The North Red Bluff Interchange is located to the north of the city center at the north end of Main Street. This interchange provides only southbound exit off the freeway and only northbound entrance onto the freeway, each from Main Street. The interchange is significant for commercial and industrial traffic destined for sites in the northern sectors, as well as connecting Highway 36W to Interstate 5.
- The Wilcox Golf Road Interchange is located at the northern edge of the Red Bluff City Limits several miles north of the city center at the intersection of Wilcox Road and Wilcox Golf Road. This interchange features full access to the freeway in both north and southbound directions. The interchange provides access to residential, commercial, and recreational site in the far northern portions of Red Bluff.
- Interstate 5 bisects Red Bluff to the east of the downtown area. The main east west access over the freeway and river is via the four-lane over-crossing and interchange at Antelope Boulevard (State Highway 36). In addition, the Adobe Road separation provides an overpass without entrance or exit onto the freeway.

SACRAMENTO RIVER

The Sacramento River also bisects the city, running in a roughly southwest direction north of the city and subsequently curving to the southeast direction. The river is located to the east of the downtown area. While the river is navigable, no commercial shipping exists in the area although there is extensive recreational use emanating from boat ramps at River Park and at the south end of Sale Lane.

STATE HIGHWAYS

State Highway 36 is the major thoroughfare serving the mountain communities of Susanville, Chester, and Mount Lassen to the east; and providing a route over the mountains to State Highway 101 to the west. Highway 36 enters the Red Bluff Sphere of Influence from the eastern edge of the Red Bluff City Limits. It runs west on the entirety of Antelope Boulevard and then turns north onto Main Street. At the northern edge of the city limits, the highway turns west on Beegum Road and exits the area. Along Antelope Boulevard and Main Street in the downtown area, State Highway 36 comprises the most heavily congested route in the city, as a result of regional through travel as well as local downtown traffic.

Sate Highway 99 links Red Bluff with the regional center of Chico to the south. Highway 99 enters the Red Bluff area from the southeast, connecting the Highway 36 at the eastern edge of the Red Bluff City Limits. Highway 99 runs west along Antelope Boulevard, and terminates at its intersection with Interstate 5.

LOCAL ROADWAYS AND INTERSECTIONS

Significant local roadways in the Red Bluff area include South Jackson Street, Luther Street, South Main Street, Monroe Street, and Walnut Street. These roadways provide the major intercity routes from access to work, shopping, and home trips.

Major intersections in the Red Bluff area are generally controlled by traffic signals; these also represent the most crowded area. The most

significant intersections in the area include Antelope Boulevard at Belle Mill Road, and Walnut Street at Main Street. Other intersections, such as South Jackson Street at Luther Road, are also utilized in peak hours.

PARKING

Parking facilities are available in all areas of Red Bluff. Red Bluff has adopted City Ordinance 828, governing parking requirements for various parking uses. This ordinance provides specific parking requirement formulas for specific residential, commercial, and industrial uses. For example, the ordinance requires two off-street parking places per unit for residences. Most commercial uses require off-street parking at a ratio of 1 space per 350 square feet. Residential areas have uncontrolled, on-street parking.[1]

Parking demand is most intense in the downtown area. Metered on-street parking is available along Main Street, Walnut Street, Pine Street, Oak Street, Washington Street, and Jefferson Street. The City also maintains metered parking lots at the northeast corner of Washington Street at Pine Street, and at the southeast corner of Rio and Hickory Streets. Timed, unmetered on-street parking predominates the remainder of available parking in the downtown area.[2] Current figures show an inventory of 2385 parking spaces in the downtown area. 1396 of these spaces are on-street, with 177 in city lots, and remainder in private lots. The overall occupancy rate for parking in the downtown area, as well as for on-street parking, is approximately 48%, while the occupancy rate for city parking lots is only 20%.[3]

RAIL TRANSPORTATION

The Southern Pacific Railroad tracks split the city, running along State Highway 36 north of the city, along Madison Street in the area west of the downtown area, intersecting with South Main Street in an overpass just north of Luther Road, and exiting the area to the south along Old Highway 99. Rail traffic is chiefly long distance freight; an average of twelve such trains traverse the city daily, generally between hours through the city, Southern pacific Railroad officials estimate that the average traffic delay causes by freight train to be two minutes. Two Amtrak passenger trains run through the city daily, one in each direction, between 2:00 a.m. and 4:00 a.m. There is no passenger stop at Red Bluff. The nearest boarding facilities are at Redding and Chico.[4] There are currently no provisions regarding rail transported toxic or hazardous waste through the Red Bluff area.[5]

TRUCK TRANSPORTATION

Red Bluff streets host a relatively high number of heavy trucks, especially in the downtown area, due to regional through traffic on State Highways 36 and 99 and local destinations. No formal truck route exists at present, although there is an informal route designation from Interstate 5 at the Antelope Boulevard, south of Main Street past Luther Road down to the South Red Bluff Interchange at Interstate 5, and west along Luther Road to the airport industrial area. There are currently no provisions regarding truck transported toxic or hazardous waste through the Red Bluff area.[6]

This page left blank intentionally.

WATER TRANSPORTATION

While the Sacramento River is technically navigable, no commercial shipping or ferries are currently operating in the area. There is, however, extensive recreational use emanating from boat ramps at River Park and at the south end of Sale Lane. There are various creeks and sloughs that flow into the Sacramento River, Reeds Creek being the largest of these, but none of which are navigable.[7]

PUBLIC TRANSPORTATION

Regional public transportation is available in Red Bluff. Intercity bus transportation is provided by Greyhound Bus Lines, which dispatches an average of seven express and local buses in both the northbound and southbound direction daily.[8] Cascade Trailways, which operates through the Greyhound Bus facilities, also has one bus daily in each direction, northbound and southbound. Mount Lassen Motor Transit connects Red Bluff with the mountain communities of Mineral, Chester, and Susanville on one daily run six days per week.[9] There is currently no commercial passenger service from Red Bluff Airport; the nearest commercial flights are available at Chico or Redding Airports.[10] [11] While two Amtrak passenger trains run daily through Red Bluff, citizens must embark at Amtrak's nearest boarding stops at Chico and Redding.[12]

Intracity transportation is available for all populations. The Red Bluff Taxi Service is a 24-hour service with two vehicles; ridership averages 80 riders per day with a maximum demand of 120 persons. [13] Special populations within Red Bluff City Limits have been served by the VanTrans system since 1982. Operated by a private, non-profit agency, it provides local dial-a-ride van services to the elderly and disabled members of the community though a

contact with Mount Lassen Motor Transit. The VanTrans system is financed through state and local funding, and patrons pay $1.50 per ride. The system operated Monday through Friday from 8:00 a.m. to 6:00 p.m. In response to concerns regarding limited service hours, VanTrans has supplemented their services by contracting with the local taxi service to provide subsidized taxi rides to the elderly and disabled during the hours VanTrans does not run, specifically 6:00 a.m. to 8:00 a.m., 6:00 p.m. to 11:00 p.m., and on weekends. Patrons pay $2.00 per ride for the taxi, and VanTrans picks up the other #3.00 of the $5.00 negotiated flat rate fee.[14]

The Volunteer emergency Transportation Service (VETS) serves the needs of the elderly and disabled in Red Bluff and in rural areas of Tehama County. Eligible persons needing transportation to medical or other appointments call ahead to the VanTrans Office; their needs are coordinated with the schedules of volunteers who provide transportation by private automobile. The volunteers are reimbursed $.25 per mile for the use of their car through separate state and local funding.[15]

BICYCLE TRANSPORTATION

Bicycling is the common means of transportation for many who cannot afford an automobile or a recreational alternative for those who enjoy the health and environmental benefits of bicycling. A large percentage of those who depend on bicycles are children riding to and from school.

Bicycle route designations, denoting type and quality, are enumerated in Table 2.

TABLE 2

BICYCLE PATHWAY DESIGNATIONS

CLASS I bicycle pathways are fully separated from any traffic lames, either in a setback landscaped corridor adjacent to the road, or in a totally separated corridor apart from the street.

CLASS II bicycle pathways are within the right-of-way of streets, usually collectors and arterials. The lanes are up to seven feet wide, located adjacent to the travel lanes with signage and a stripe on the pavement demarking the lane.

CLASS III bicycle pathways are shared usage of streets with no specific separation of different modes of traffic. Street signage is often used to designate a roadway as a bicycle route.

Source: Time Saver Standards for Site Planning, p.626-628.

A bicycle route was designated through the Red Bluff Sphere of Influence in the 1974 Red Bluff Park System General Plan, utilizing both Class I and Class III bicycle path; there are not Class II bicycle paths in the area. None of the Class I bicycle routes are developed as yet and much of the routes within the designation are in rough terrain, such as creekbeds and obscure trails. This bicycle route is roughly circular, extending along the area creeks and rivers, and connecting several major destinations such as schools, parks, and the downtown area 16 (see Figure 4).

The 1990 Regional Transportation Plan for Tehama County shows a more current bikeways system comprised solely of unsigned Class III bicycle routes (figure 5). Although overlapping the 1974 plan routes slightly, the 1990 version includes many more area of the city. In addition, portions of local streets Douglass Street, Cedar Street, Franklin Street, First Street, Washington Street, Orange Street, Sacramento Avenue, Madison Street, Sycamore Street, Riverside Way, Ash Street, Kaer Avenue, Paynes Creek Road, Mulberry Avenue, and Berrendos Avenue are included.[17]

While the large bicycle route system in the Red Bluff area extends to most shopping, work, and school applications, significant care is required to use the Class III bicycle lanes in many area of the city. There are no bicycle route signs erected to alert drivers to the presence of bicyclists. Moreover, bicycle route users must struggle with a number of obstacles and hazards, such as parked cars, heavy trucks, and narrow lanes of congested traffic, especially on major arterial streets such as Main Street and Antelope Boulevard.

Figure 4

BIKEWAY PATHS

RED BLUFF PARK SYSTEM

GENERAL PLAN – 1974

FIGURE 5

BIKEWAY PATHS

1990 REGIONAL

TRANSPORTATION PLAN

AIR TRANSPORTATION

Red Bluff Municipal Airport is located southwest of the city center south of Luther Road between South Jackson Street and Paskenta Road. As an FAA Flight Service Station [18] with a 6,000-foot runway, the airport is capable of handling all small aircraft up to and including jets. There is no scheduled commercial air service at the airport. It is the intent for the airport to accommodate local and private business traffic and there are no plans to further expansion to attract commercial airline traffic.[19]

LEVEL OF SERVICE (LOS)

The level of Service, or LOS, indicated the relative congestion and quality of operating conditions of an intersection based on the ratio of traffic volume to capacity. LOS ratings range from best to worst: specifically, from LOS A, which is a volume to capacity ratio of less than 60%, to the LOS F, which indicates a volume to capacity ratio of 100% or more. Table 3 gives a full explanation of each LOS and volume to capacity ratio.

TABLE 3

LEVEL OF SERVICE DEFINITIONS

Level of Service "A" represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. Intersection delays are very short, less than 5 seconds. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.

Level of Service "B" is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. Intersection delays are somewhat increased, to between 5 and 15 seconds. The level of comfort and convenience provided is somewhat less that at LOS A because the presence of others in the traffic stream begins to affect individual behavior.

Level of Service "C" is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. Intersection delays are in the range of 15 to 25 seconds. The general level of comfort and convenience declines noticeably at this level.

Level of Service "D" represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Intersection delays are between 25 and 40 seconds. Small increases in traffic flow will generally cause operational problems at this level.

Level of Service "E" represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to 'give way' to accommodate such maneuvers. Intersection delays range between 40 to 60 seconds. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow and minor perturbations within the traffic stream will cause breakdowns.

Level of Service "F" is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can transverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Intersection delays are greater

than 60 seconds. Level-of-service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases, operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow, which causes the queue to form, and level-of-service F is an appropriate designation for such points.

Source: Highway Capacity Manual (1985).

VOLUME TO CAPACITY RATIOS OF LEVELS OF SERVICE

LOS	V/C RATIO
A	0.00 – 0.60
B	0.61 – 0.70
C	0.71 – 0.80
D	0.81 – 0.90
E	0.91 – 1.00
F	>1.00

Source: Highway Capacity Manual (1985).

In addition to traffic volume, level of service may be affected by a variety of 'friction' factors. These may include large amounts of on-street parking, driveways or access points to the roadway, truck volumes, pedestrian activity, lack of left-turn lanes, traffic signals, and low driver familiarity with the area. Presence of these factors may significantly reduce LOS below the actual vehicle volume to capacity ratio. This is the case in the downtown Red Bluff, which has on-street parking, may access points, and a large volume of trucks. LOS of the key Red Bluff roadways and intersections are operating at or above LOS C. Deficient roadways are listed in Table 4.

TABLE 4

ROADWAYS AND INTERSECTIONS BELOW

LOS “C’ AT PEAK HOUR

Intersection	LOS
Antelope Boulevard at Main Street	F
Walnut Street at Main Street	D
Antelope Boulevard at Belle Mill Road	E
South Jackson Street at Oak Street	D

Roadway	
Main Street between Oak Street and Walnut Street	F
Antelope Boulevard between Sale Lane and Belle Mill Road	D
Antelope Boulevard between Belle Mill Road and Main Street	E

DAILY TRAFFIC VOLUMES

Existing traffic volumes were measured in June 1990 through February 1991 at 19 key roadways and intersections throughout the city. Using the peak hour method in accordance with the 1985 Highway Capacity Manual, counts were made between 7:00 a.m. Monday morning and 6:00 p.m. Thursday evening to obtain representative samples and to include commuter traffic from outlying areas such as Redding and Chico. The traffic volumes obtained are comparable to available CalTrans figures. The summary of the results are shown in Table 5 and illustrated in Figures 6 and 7.

TABLE 5

PARK HOUR INTERSECTION AND ROADWAY VOLUMES
AND LEVELS OF SERVICE

Intersection	Peak Hr Volume	LOS
Antelope Blvd / Main Street	2244	F
Walnut Street / Main Street	1696	D
Antelope Blvd / Highway 36E	724	A
Walnut Street at Dumosa	1036	A
Main Street at Adobe Road	976	A
South Jackson Street at Luther Road	1516	C
Luther Road At Main Street	1686	B
Antelope Blvd at Belle Mill Road	2444	E
South Jackson Street at Oak Street	980	D
Roadway	**Peak Hr Volume**	**LOS**
Main Street between:		
Adobe Road / Walnut Street	896	A
Walnut Street / Oak Street	1088	F
Oak Street / Luther Street	1496	B
Antelope Boulevard between:		
Highway 36E / Sale Lane	620	B
Sale Lane / Belle Mill Road	1804	D
Belle Mill Road / Main Street	2052	E
Main Street / South Jackson Street	748	C
Luther Road between:		
Main Street / South Jackson Street	1145	B
Walnut Street between:		
Main Street / Dumosa Avenue	996	C
South Jackson Street between:		
Oak Street / Luther Road	776	C

Figure 6
PEAK HOUR
INTERSECTION
VOLUMES

Figure 7
PEAK HOUR
INTERSECTION
VOLUMES

Higher traffic volume locations pinpoint some of the stress points in the circulation system. These include the intersections of Antelope Boulevard at Main Street, Antelope Boulevard at Belle Mille Road, and Walnut Street at Main Street, as well as roadways such as Antelope Boulevard and Main Street.

FUTURE CONDITIONS

In order to forecast future traffic volumes and Levels of Service, the QRS II traffic projection model was employed. Using the build-out of all land uses and roadway networks shown in the General Plan, along with scheduled improvements, the computer model calculates projected traffic volumes. The traffic volumes are distributed onto the roadway system by the complex modeling formulas set forth in the national cooperative Highway Research Program Report No. 187, Quick-Response Urban Travel Estimation Techniques and Transferable Parameters, and projects the logical route choices of residents. The route choices are determined by several factors, such as speed, capacities, travel times, distances, and avoidance of congested area. The output of the program is the average daily traffic (ADT's) and peak hour volumes of roadways and intersections at buildout. Using this data, intersections and roadways that may require improvement or alternative routes in order to maintain adequate ease of circulation are spotlighted. These figures are shown in Table 6.

TABLE 6

PROJECTED INTERSECTION AND

ROADWAY VOLUMES AT BUILDOUT

Intersection	Peak Hour Volume
Antelope Boulevard / Main Street	2318
Walnut Street / Main Street	1846
Antelope Boulevard / Highway 36E	958
Walnut Street / Dumosa	2012
Main Street / Abode Road	1528
South Jackson Street / Luther Road	2246
Luther Road / Main Street	2198
Antelope Boulevard / Belle Mill Road	2472
South Jackson Street / Oak Street	1248
South Jackson Street / Aloha Street	1367

Intersection	Peak Hour Volume
Main Street between:	
Adobe Road / Walnut Street	1120
Walnut Street / Oak Street	1156
Oak Street / Luther Road	1869
Antelope Boulevard between:	
Highway 36E / Sale Lane	804
Sale Lane / Belle Mill Road	2036
Belle Mill Road / Main Street	2345
Main Street / South Jackson Street	874
Luther Road between:	
Main Street / South Jackson Street	1859
Walnut Street between:	
Main Street / South Jackson Street	1901
South Jackson Street between:	
Oak Street / Luther Road	1416
Aloha Street between:	
Paskenta Road / South Jackson Street	723
Monroe Street between:	
Walnut Street / Highway 36W	1184
Paskenta Raod between:	
Walnut Street / Luther Road	985

The anticipated future traffic conditions in Red Bluff at buildout includes increasing traffic on minor arterials and collectors. South Jackson Street and Monroe Street will experience levels of service degradation generated by increased development in the north and south sectors of the city, as well as drivers attempting to avoid the gridlock of the downtown area. The construction of a bridge over Reeds Creek will facilitate increased traffic on Paskenta Road between Walnut Street and Luther Road. South Jackson Street from Walnut Street to Luther Road will also realize increased traffic as a result of the new east-west linkage of Willow Street to Aloha Street, which will create a major intersection that will require signalization. Additionally, aloha street will have expanded use as a link to developments in the west.

The overriding circulation concern for the Red Bluff area, both currently and in the future, is the downtown area of Antelope Boulevard form Sale Lane to Main Street, and Main Street from Antelope Boulevard to Walnut Street. Because Antelope Boulevard is the only east-west link from the outlying eastern area to the city core over the Sacramento River and Interstate 5, all east-west traffic must use this roadway. As a consequence, it is virtually required that the intersection of Antelope Boulevard and Main Street, Antelope Boulevard and Rio Street, Antelope Boulevard and Belle Mill Road, and Antelope Boulevard and Sale Lane be used to gain this cross-town access. With greater numbers of access roads, lower density, and higher speeds, traffic dissipates easily on Antelope Boulevard east of Sale Lane. On the west side of Antelope Boulevard, at Rio Street and Main Street, limited access and high density create gridlock. While these areas are currently at unacceptable levels of service, the problems that have created this gridlock

are not anticipated to change. The situation will, therefore, continue to degrade as development occurs.

The traffic problems of the main downtown intersections (Antelope Boulevard and Rio Street, Antelope Boulevard and Main Street, and Main Street and Walnut Street) were studied by traffic engineering consultant Joseph Holland in 1986. The report, entitled "Traffic Analysis: Antelope Blvd. & Rio Street, Red Bluff, California" provides valid alternatives to reduce downtown congestion:

1. Remove some on-street parking and restripe portions of Main Street, Antelope Boulevard, and Walnut Street to increase the number of lanes, thereby increasing traffic capacity and LOS. The resulting decrease in parking in an area already perceived as having insufficient parking proved quite unpopular.
2. Signalize the intersection of Rio Street and Antelope Boulevard to shift some of the traffic from Main Street onto Rio Street. Further analysis of this alternative indicated there would be notable improvement in traffic conditions at the Antelope Boulevard/Main Street intersection with a slight improvement a the Walnut Street/Main Street intersection. The negative impact, however, would include greater traffic volumes on Rio Street, longer delays in turning onto Antelope Boulevard from Main Street necessitated by the coordination of the two sets of traffic signals, potential peak hour blockage of the Rio Street intersection from backup of westbound traffic from the Antelope Boulevard/Main Street intersection, and significant cost of signal installation. The report goes on to state that while the traffic situation would improve in spots,

the overall delay for through traffic would actually increase as a result of the signalization of the Antelope Boulevard/Rio Street intersection.

3. Restrict left turns from Rio Street onto Antelope Boulevard during peak hours. This course of action would improve traffic volumes on Rio Street, eliminate the significant left-turn delay from Rio Street, and be of minimal cost. In terms of downtown congestion, the results would be minor: left-turn traffic would be diverted from Rio Street to Main Street, but overall delays would be virtually unchanged.[20] This alternative was the one chosen by CalTrans and the City of Red Bluff for implementation, expanding the prohibition of left turns from peak hours to 24 hours per day.

Another possible solution to the downtown traffic congestion not suggested in Holland's report is the conversion of Main Street and Rio Street between Sycamore Street and Cedar Street to a one-way street couplet. Additional signalization would be needed at several sites, including Rio Street at Antelope Boulevard, Rio Street at Walnut Street, and Main Street at Sycamore, to facilitate this change. The chief advantage would be the significant reduction in intersection delays, thus increasing the capacity and LOS. On the other hand, signalization costs would be significant, and funding for such would be difficult to obtain. Further, the reeducation of the driving public may be slow, as residents accustomed to the current configuration may take a long time to readjust their driving habits and use the one-way streets correctly. The City has noted significant opposition to this alternative when suggested in the past, and there is no indication that public sentiment has significantly changed.

Recognizing that a new overpass of Interstate 5 and the Sacramento River would be prohibitive on both financial and environmental grounds, the addition of an interchange at the existing overpass of Interstate 5 at Adobe Road is being explored. The object would be to provide eastbound access via the freeway thereby bypassing Main Street and alleviating downtown congestion created by through traffic on Highway 36. Future plans include possible extension of Adobe Road to connect, via freeway, with Antelope Boulevard. The project may include the addition of a frontage road along the west side of Interstate 5 and ramp interchanges providing southbound entrance to and northbound exit from the freeway, or may include the realignment of Adobe Road to Walton Avenue. This alternative appears popular amongst residents, as well as being of low cost to the City. Discussions between the City and CalTrans are currently ongoing, and initial projections calculate the ramp construction to begin no sooner than 1997, and most likely will commence after the year 2000.

The final alternative is to do nothing about the downtown congestion. Current LOS is at unacceptable levels. Future development will only exacerbate the situation, as there are no convenient alternative routes in crossing to the east side of the City. Doing nothing may be quite costly in terms of driver frustration, delays, and increasing complaints to the City.[21]

Another perceived problem in downtown circulation is availability of parking. With many destinations, such as banks, shops, and restaurants along Main Street, Oak Street, and Walnut Street, competition for on-street parking on these streets is most intense. There is, however, an abundance of parking generally available within one or two blocks of these destinations, on Washington, Jefferson, and Rio Streets. While distribution of parking may

not be optimal convenience for users in terms of proximity to destinations, in sum, parking availability in the downtown area is sufficient.

GOALS, OBJECTIVES, POLICIES, AND PROGRAMS

I. GOAL

Problem-free circulation throughout Red Bluff

A. OBJECTIVE: Provide convenient access to all areas of the city.

1. POLICY: Level of Service (LOS) should not deteriorate below a Level "C" On city streets during peak traffic hours.

a. Program: Monitoring of LOS at key intersections shall assist to determine when and if traffic levels approach degradation of LOS.

2. POLICY: Development and roadway improvements should be phased such that LOS does not deteriorate significantly.

a. Program: Approval of development proposals that may result in a degradation of LOS may be postponed until roadway improvements are made.

3. POLICY: Traffic improvement priority shall be given to improve city streets LOS to level "C" or better, where feasible.

4. POLICY: Use of existing transportation facilities and mediums shall be maximized.

5. POLICY: Strip commercial and "drive-in" land uses shall be discouraged, except where specifically designated, due to the friction of the traffic generated.

a. Program: Site-specific traffic impact studies may be required of any vehicle-intensive use.

6. POLICY: Turning lanes shall be incorporated wherever appropriate to direct channel traffic.

a. Program: The City should identify arterial and collector streets that require median strips and consider for their funding in Capital Improvement Fund.

7. POLICY: New developments shall be required to pay a fair share percentage of necessary traffic improvements.

a. Program: The City should develop a system to determine appropriate traffic impact fees for residential and commercial development.

B. OBJECTIVE: Improve east-west accessibility over the north-south roadway barriers, such as the Sacramento River, Interstate 5, and the Southern Pacific railroad tracks.

1. POLICY: Continue to seek other ways to improve existing east-west routes.

2. POLICY: Continue to develop additional avenues of crossing.

a. Program: Preserve rights-of-way needed for potential east-west accessibility.

b. Program: Encourage and cooperate with state and federal transportation officials for additional interchange at Interstate 5 and Adobe Road.

c. Program: Identify, evaluate, and prioritize potential east-west routes and develop plans for improvement.

d. Program: Investigate alternative financing mechanisms for east-west circulation improvements, such as assessment districts.

C. OBJECTIVE: Reduce traffic congestion in the downtown area.

1. POLICY: Develop alternate through-routes in downtown area.

a. Program: Encourage and cooperate with state and federal transportation officials for additional interchange at Interstate 5 and Adobe Road to alleviate traffic congestion in the downtown area.

b. Program: Continue development of transportation model initiated herein using the QRS II to evaluate downtown traffic and parking alternatives.

2. POLICY: Non-local and commercial through truck traffic shall be discouraged from utilizing residential and downtown areas.

a. Program: The City should plan, develop, and adopt a truck route, which discourages truck traffic from the downtown as well as residential areas.

b. Program: The City should coordinate with involved agencies to develop alternative truck routes.

D. OBJECTIVE: Adequate parking for commercial and residential applications.

1. POLICY: Enforce and enhance City planning ordinances pertaining to the provision of adequate parking for commercial and residential developments.

2. POLICY: The City shall coordinate involved agencies to manage traffic and parking in the downtown area.

a. Program: Alternative off-street parking possibilities for large semi-trucks should be investigated by the City.

b. Program: Develop ordinance to restrict parking large semi-trucks on city streets.

II. GOAL

Quiet Vehicular transit in residential areas.

A. OBJECTIVE: Minimize traffic/transit impacts on residential areas.

1. POLICY: New single-family residences shall not front directly onto State Route 36 or major or minor arterial streets.

a. Program: Any new single-family residence on an arterial may be required to provide a buffer strip for separation of property from the roadway.

B. OBJECTIVE: Designate truck routes that minimize residential impacts.

1. POLICY: Restrict truck traffic to deliveries on all city streets other than those specifically designated as a truck route.

a. Program: The City should plan, develop, and adopt a truck route, which discourages truck traffic from the downtown as well as residential areas.

III. GOAL

High degree of safety in all transportation modes.

A. OBJECTIVE: Insure public safety from transported toxic substances.

1. POLICY: Transit of toxic substances shall be restricted from residential areas in compliance with existing law.

a. Program: The City should cooperate with CalTrans and state emergency response officials to enforce toxic waste spill response plans.

B. OBJECTIVE: Adequate emergency vehicle through access to all new developments.

1. POLICY: Fire lanes in residential and commercial building complexes shall be designed to adequately accommodate emergency vehicles.

a. Program: Each subdivision or development must have at least two points of access to collector streets to ensure adequate access, unless approved by the City's Technical Advisory Committee.

2. POLICY: Cul-de-sacs shall be designed to accommodate emergency vehicle parking and turnaround.

a. Program: Cul-de-sacs greater than 300 feet deep should be discouraged.

3. POLICY: Through street shall be encouraged.

a. Program: Utilize continuous, rather than segmented, street design on arterials and collectors.

b. Program: Modify local streets design to discourage interneighborhood traffic on local streets.

C. OBJECTIVE: Promote the safety of pedestrians and cyclists on streets and roadways.

1. POLICY: Separation of bicycle and pedestrian traffic from vehicular traffic shall be encouraged.

a. Program: Consider separate bicycle and pedestrian lances in each direction on any new arterial or collector street.

2. POLICY: Bicycle lanes shall be considered in construction or upgrade of roads, overpasses, and bridges.

a. Program: Require new development and redevelopment to include bicycle routes.

b. Program: The City may assess and collect impact fees for maintenance and construction of bicycle lanes on new development and redevelopment.

3. POLICY: New bicycle lanes shall be connected with existing bikeway system wherever feasible.

a. Program: The City shall update the existing bicycle route plan when appropriate..

4. POLICY: Existing bicycle facilities should be maintained and upgraded, and new ones added as needed.

a. Program: The City shall consider standards for the provision of bicycle parking facilities for public and private development as part of a Transportation Systems Management (TSM) program.

D. OBJECTIVE: Vehicular traffic safety shall be promoted.

1. POLICY: Allocate funds sufficient to maintain traffic safety programs.

IV. GOAL

Increase use of alternative transportation modes.

A. OBJECTIVE: Encourage commercial and industrial land uses that allow alternative transportation access.

1. POLICY: Designate high intensity non-residential uses along arterials and/or within walking distance of residential concentrations.

2. POLICY: Encourage employers to advocate employee use of fuel-efficient transportation.

a. Program: Consider Transportation System Management (TSM) provisions to promote flex-time, vanpools, bicycling, and other alternative transportation methods to employment destinations.

B. OBJECTIVE: Reduce Average Daily Traffic (ADT) trips.

1. POLICY: Promote use of bicycling and walking as an alternative to automobile use.

a. Program: Develop and adopt a TSM ordinance with provisions to promote bicycling and walking as methods of transportation.

b. Program: Identify and consider development of new bicycle and pedestrian trails, especially in areas connecting residential areas to schools, shopping area, and employment centers.

2. POLICY: The City shall make every effort to insure the provision of transportation for those who need it.

a. Program: Support the continued operation of the VanTrans and Volunteer Emergency Transportation Systems (VETS) transportation systems.

b. Program: Support expansion of the existing public transit system when population and demand are sufficient for such.

3. POLICY: Promote the use of car and van pooling.

a. Program: Alter requirements for commercial and industrial developments permitting reduced parking areas for companies developing and participating in car and van pool programs.

b. Program: Assist state officials to identify and develop potential locations of park-and-ride lots, especially near Interstate 5, Highway 36E, and Highway 99.

V. GOAL

Adopt land use policies that promote a sound and compatible circulation system.

A. OBJECTIVE: Design and regulate city streets to minimize traffic impacts on adjacent land uses.

1. POLICY: Traffic impacts must be considered in land use decisions and vice versa.

   a. Program: Land uses that have a high incidence of auto traffic, such as drive-ins, convenience stores, fast-food outlets, shopping centers, and large subdivisions, shall be required to submit a site-specific traffic impact report prior to construction or expansion of such facilities.

2. POLICY: Provide setbacks, landscaping, sound walls, and other barriers to protect adjacent land uses from noise, air pollution, and safety impacts from traffic and improve appearance where appropriate (see land development policies).

   a. Program: Develop and adopt local noise standards for residential and commercial development.

   b. Program: Landscaping of exposed unpaved graded surfaces in right-of-ways and frontage should be required.

Appendix A pages 50 - 58

ENDNOTES

[1] City of Red Bluff. Ordinance 828, Article XXI: Parking and Loading Standards. (1984), 10-14.

[2] D. Jackson Faustmann, "Parking Conditions Study, City of Red Bluff, October 1977". (Red Bluff, CA: City of Red Bluff Community Development Department, 1990). 1-12.

[3] City of Red Bluff, "Parking Study 1990". (Red Bluff, CA: City of Red Bluff community Development Department, 1990), 1-4.

[4] Mark Sullivan of Southern Pacific Railroad Administration Office in Dunsmuir CA, interview by author, 23 January 1990, by telephone.

[5] City of Red Bluff Community Development Director, Chuck Hayden, interview by author, 5 February 1991, by telephone.

[6] Chuck Hayden, 12 December 1990.

[7] City of Red Bluff Public Work Director, Harlan Warwick, interview by author, 26 June 1990, Red Bluff, CA.

[8] Representative Lisa Stevens of Greyhound Bus Lines of Red Bluff, interview by author, 8 February 1991, by telephone.

[9] "Regional Transportation Plan for Tehama County" (Red Bluff, CA: Tehama County Transportation Commission, 1988), 9-10.

[10] "Regional Transportation Plan for Tehama County", 1988, 14.

[11] Shasta Skyhawk service identified in the "Regional Transportation Plan for Tehama County", 1988, 11, which provided the transportation between the Sacramento and Redding Airports, ceased operating in 1990.

[12] Mark Sullivan, 28 January 1991.

[13] "Regional Transportation Plan for Tehama County", 1988, 11.

[14] Coordinator Pauli Hilsee of VanTrans Services of Red Bluff, CA, interview by author, 12 November 1990. by telephone.

[15] Ibid.

[16] Nickolas von Rotz, Jr., "Red Bluff Park System General Plan, October 1974" (Red Bluff, CA: City of Red Bluff Community Development Department, 1974), 4-5.

[17] "Regional Transportation Plan for Tehama County", 1990, M-5.

[18] Representative Brain Little of Red Bluff Aero at the Red Bluff Airport, interview by author, 22 February 1991, by telephone.

[19] "Regional Transportation Plan for Tehama County", 1988, 15.

[20] Holland, Joseph, “Traffic Analysis: Antelope Blvd. & Rio Street, Red Bluff, California: April 1986”, p. 6-22.

[21] Holland, p.10.