REDLANDS PASSENGER RAIL STATION AREA PLANS

DRAFT REPORT

November 2006

Prepared for

San Bernardino Associated Governments
1170 W. 3rd Street, 2nd Floor
San Bernardino, CA 92410

Prepared by

GRUEN ASSOCIATES
6330 San Vicente Boulevard, Suite 200
Los Angeles, CA 90048

In Association with

Parsons
Moore Iacofano Goltsman, Inc.

TABLE OF CONTENTS

Chapter 5

Chapter 6

Chapter 7

Chapter 8

Chapter 9

Chapter 10

Chapter 11

Chapter 12

Acknowledgements

Attachment A

Appendices (In Separate Volume)

This page intentionally left blank.

LIST OF FIGURES

Chapter 1

Chapter 2

Chapter 3

Chapter 4

Chapter 5

Chapter 6

Chapter 7

Chapter 8

Chapter 9

Chapter 10

Chapter 11

Chapter 12

This page intentionally left blank.

LIST OF TABLES

Chapter 1

Chapter 2

Chapter 3

Chapter 4

Chapter 5

Chapter 6

Chapter 7

Chapter 8

Chapter 9

Chapter 10

Chapter 11

Chapter 12

1

INTRODUCTION AND SUMMARY

The Redlands Passenger Rail Station Area Plans provide the cities of San Bernardino, Loma Linda, and Redlands with land use and economic development direction adjacent to proposed passenger rail stations. The station area planning was led by the San Bernardino Associated Governments (SANBAG) with active participation from these cities, as well as other regional transit agencies. Support for these plans and adoption of implementing measures by each city will assist SANBAG in its application for funding from the Federal Transit Administration.

1.1 REDLANDS PASSENGER RAIL

SANBAG is planning the Redlands Passenger Rail, a new passenger train service with stations in the cities of San Bernardino, Loma Linda, and Redlands (Figure 1-1). The Redlands Passenger Rail, planned on an existing 9.1 mile railroad right-of-way owned by SANBAG, will operate between the proposed San Bernardino Transcenter at Rialto Avenue and E Street in the City of San Bernardino and a station adjacent to the University of Redlands with five other stations en-route.

The San Bernardino Transcenter will interconnect the Redlands Passenger Rail with Metrolink, the planned Omnitrans sbX bus rapid transit service on E Street, and other Omnitrans bus routes. Metrolink service will be extended from the Santa Fe Depot to the San Bernardino Transcenter site allowing convenient transfer for commuters to and from Omnitrans local bus, sbX rapid transit service and the Redlands Passenger Rail. The Redlands Passenger Rail will use a self-propelled vehicle, called a diesel multiple unit or DMU and will operate throughout the day with frequent headways providing service to commuters, and also existing and future local destinations along the corridor.

A diesel multiple unit

1.2 VISION FOR STATION AREA PLANS

The station area plans are based on the premise that there is a strong connection between land use and transportation. Transit, either premium bus or rail, can serve as a catalyst for community improvements and new compact developments which focus on this new multi-modal access. In turn, appropriate new development fosters increased transit ridership. This synergy between land use and

transportation is a goal of transit-oriented developments (TODs) in which a compact mix of uses are located within walking distance of a transit station thereby providing community benefits including a reduction in automobile trips, improved air quality, and improved health benefits from walking. Transit-oriented developments are often called Transit Villages. Figure 1-2 illustrates the building blocks of the Transit Village Concept.

These are as follows:

- An open air specially-designed passenger rail station with ample pedestrian amenities and located for intermodal transfers

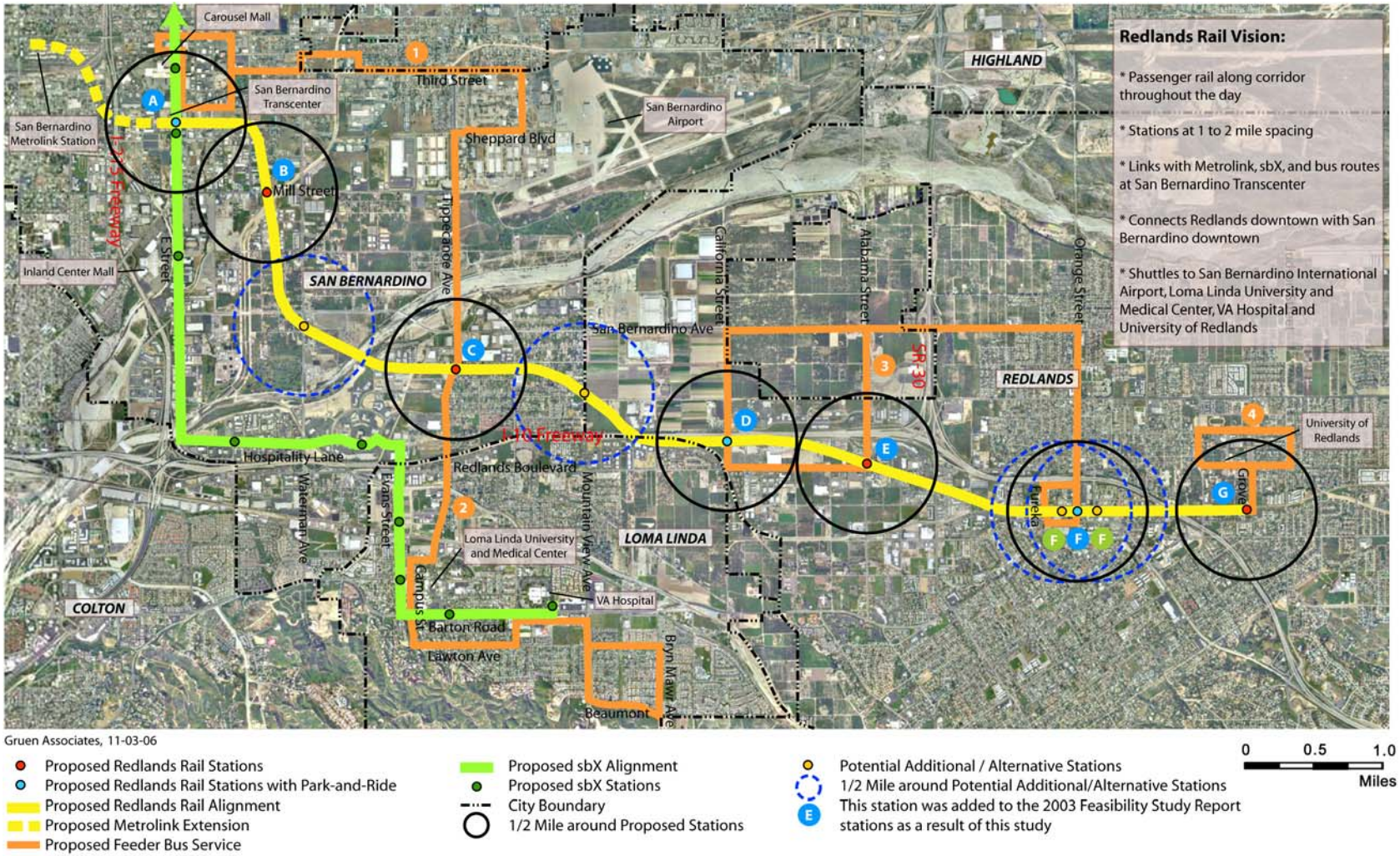


Figure 1-1: Redlands Rail Alignment

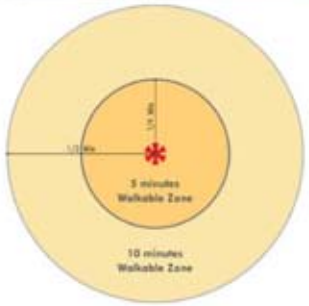
Development in walking distance of rail station to encourage alternatives to automobile trips, thereby *reducing traffic congestion and improving air quality in the area*

Building blocks of a Transit Village

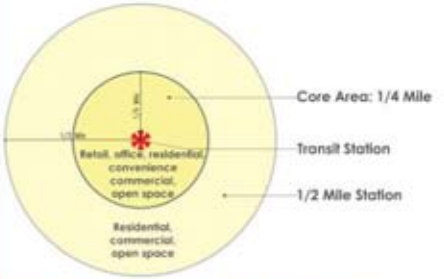
1. The Passenger Rail Station with intermodal transfers (Metrolink, bus, shuttle, and bicycle)

2. Pathways for walking to station linking new and surrounding neighborhoods and jobs

3. Walkable area is within 1/4 to 1/2 mile from station



4. Compact mix of uses fostering walking and transit use with highest intensity at the center



5. Mix of amenities such as neighborhood services, public gathering spaces, bike paths and lockers and network of interconnected streets

6. Improving the entire rail alignment by adding landscaping and trails, uplifting the area

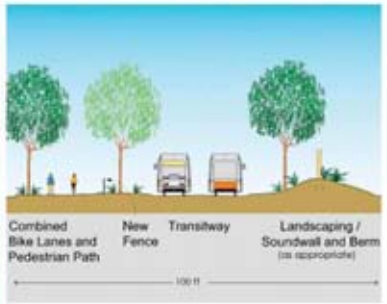


Figure 1-2: Transit Village Concept

- Pleasant pathways for walking to the station linking new development and surrounding neighborhoods and businesses
- Walkable area within ½-mile of the station (generally a ten minute walk)
- A compact mix of uses fostering walking and transit usage with the highest intensity land use in the ¼ mile core area (a 5 minute walk) and a more moderate intensity in the ½ mile area when adjacent to existing neighborhood uses
- A mix of amenities such as neighborhood services, public gathering spaces, bike paths, bike lockers and a network of interconnected streets
- An improvement to the entire rail alignment through the opportunities for the addition of landscaping and trails where there is enough right-of-way. These trails will connect with the regional trail/bicycle network and with landscaping will uplift the environment along the rail corridor

Figure 1-3 describes some of the benefits of a Transit Village and shows the character of TODs in other communities.

1.3 BACKGROUND AND PROJECT PURPOSES

In 2003, the Redlands Rail Feasibility Study was completed by SANBAG to assess the feasibility of establishing passenger rail services between San Bernardino and the City of Redlands. A series of transportation alternatives was explored and a fixed rail alternative was found to be the most cost effective. In addition to the existing Santa Fe Depot, six potential stations, as well as feeder bus services were recommended in the feasibility study. These station locations included San Bernardino Transcenter, Mill Street, Tippecanoe Avenue, California Street, downtown Redlands, and the University of Redlands and are shown in Figure 1-1.

In April 2006, Gruen Associates, with Parsons and MIG, were retained by SANBAG to prepare station area plans for the planned Redlands Passenger Rail. The primary purposes of these station area plans are:

- Address land use and economic development related criteria pursuant to Federal Transit Administration Small Starts funding
- Assess existing conditions and each City's plans within one-half (1/2) mile of each proposed station for transit-oriented development (TOD) potential, economic development potential, and connections to stations
- Prepare alternative TOD concepts for station areas
- Finalize station locations and prepare concept plans
- Obtain cities' support for station area plans, which is a major ingredient in obtaining federal funding for the Redlands Passenger Rail

1.4 PLANNING PROCESS AND OUTREACH

Throughout the planning process, the Gruen Associates team has placed an emphasis on community outreach and establishing an integrated approach to land use and transportation planning. In order to inform and obtain input from community members about potential stations for the Redlands Passenger Rail and potential land use development at "Transit Villages", public input was sought at key milestones in the process. The public outreach process includes:

- **Task Force Meetings** – A Task Force was established to guide the planning and outreach process. Task Force members included planning, public works, and management representatives from the cities of San Bernardino, Loma Linda and Redlands, as well as representatives from SANBAG, Omnitrans,

Environmental

- Improve overall quality of life
- Improve air quality by reducing auto trips and emissions
- Decreased traffic congestion by increased transit ridership
- Conservation of land, open space and resources through compact development

Economic

- Catalyst for economic development
- Assists in revitalization or redevelopment of an area
- Decreases infrastructure costs through compact development
- Increases property value
- Reduces need for automobile ownership, providing additional income

Social

- Increased housing and employment choices in proximity to transit
- Health benefits of walking and bicycling
- Greater mobility choices
- Overall improvement in quality of life and sense of community

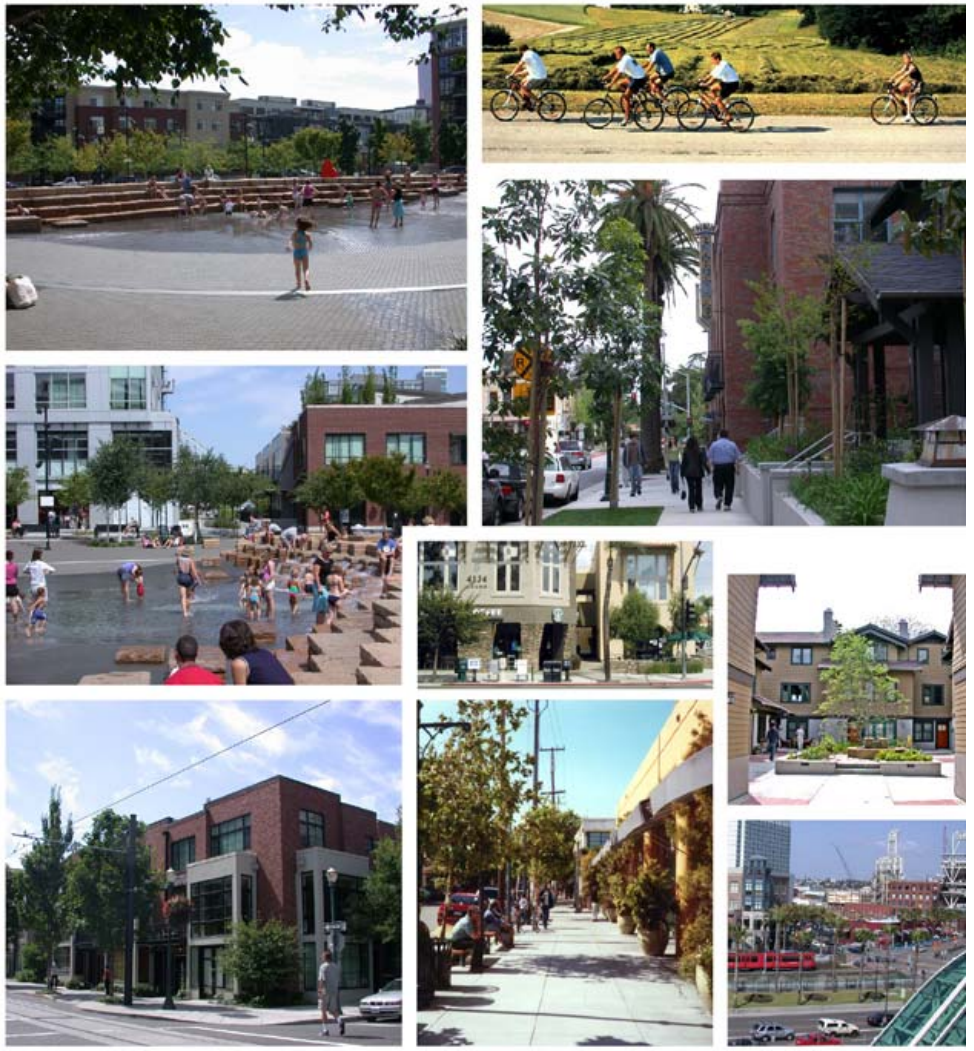


Figure 1-3: Transit Village Benefits

and Metrolink. The Gruen team met four times with the task force at: 1) the start of the project; 2) the background analysis and station evaluation milestone, 3) the preparation of alternatives milestone, and 4) the preparation of the draft report.

- **Stakeholder Meetings** – Early in the project the team met with stakeholders in a series of small meetings (1-3 people each). At these meetings, detailed information was obtained regarding the various station sites and surrounding areas and discussions took place on potential transit-oriented development and benefits. Stakeholders represented a wide range of interests including the mayors of San Bernardino and Redlands, other city councilpersons, developers, major property owners, business owners, city staff, an airport representative, and the University of Redlands representatives.

- **Community Meetings** – Community workshops were held in July 2006 in the cities of San Bernardino, Loma Linda and Redlands. At these workshops, participants were informed about the Redlands Passenger Rail, station area objectives, transit-oriented development concepts, and station locations. Participants were asked to comment on display boards and alternative land use and circulation concepts at station areas. Approximately 85 community members signed in at the workshops as participants. Written feedback was provided to the team via comment booklets keyed to the display boards. Also at these workshops, as assessment of different transit technologies was presented along with the alternatives for the San Bernardino County Long Range Transit Plan (LRTP) were provided for input from the community. A combined cities' workshop to review the Draft Redlands Passenger Rail Station Area Plans will be held in late 2006 followed by City Council meetings.

1.5 FUTURE STEPS

Once the project report is completed and presented to each city's council, the following next steps are envisioned:

- Each city later adopts the station area plan report "in concept" (this project).
- Each city incorporates policies, standards, and guidelines into its General Plan, other relevant plans, and zoning implementing the station area plans.
- SANBAG prepares analysis addressing cost effectiveness and other detailed FTA Small Starts requirements. This will entail updating capital and operating costs, the preparation of a financial plan and refined transportation modeling.
- SANBAG takes Redlands Rail Corridor Project through SCAG RSTIS process.
- SANBAG adopts Redlands Passenger Rail line as the Locally Preferred Alternative and its inclusion in SCAG's RTP.
- SANBAG prepares Final Alternatives Analysis Report and New Starts (or Small Starts) Report including 13 different templates and submits to FTA.
- SANBAG completes NEPA scoping to obtain FTA approval for entering Preliminary Engineering.
- Complete environmental clearance and PE. Apply for Full Funding Grant Agreement (FFGA) with FTA.
- Final design construction and testing open for revenue service.

1.6 ORGANIZATION OF REPORT

This report is arranged into 13 chapters:

- Chapter 1 – Introduction and Summary
- Chapter 2 – Station Areas Vision and Recommendations for All Station Areas
- Chapter 3 – Overview of Corridor and Station Locations
- Chapter 4 – Land Use Alternatives and Public Outreach
- Chapter 5 – Ridership Forecast
- Chapter 6 – San Bernardino Transcenter Station Area Plan
- Chapter 7 – Mill Street Station Area Plan
- Chapter 8 – Tippecanoe Avenue Station Area Plan
- Chapter 9 – California Street Station Area Plan
- Chapter 10 – Alabama Street Station Area Plan
- Chapter 11 – Downtown Redlands Station Area Plan
- Chapter 12 – University of Redlands Station Area Plan
- Chapter 13 – Next Steps

1.7 SUMMARY OF RECOMMENDATIONS

Based on the input from the task force and community workshops and consultants' background analysis, overall land use and linkage directions were established for each station area. This overall land use direction is illustrated in Figure 1-4. For each station area, a mix of uses with both employment and housing near the station areas is proposed. In order to achieve livable attractive, walkable and economically viable TODs, each city must adopt general policies that apply to all TODs as well as the following guidelines to assist in implementation.

General Policies

The general policies recommended for all TODs are primarily based on the principles and characteristics for TODs outlined in Chapter 2 and the local areas. They include:

- Within ½ mile of each station area, provide a mix of uses and compact development
- Create a pedestrian-friendly or walkable environment with pedestrian amenities throughout the station area and with clearly defined pathways and trails leading to the station
- Provide bike path connections from neighboring communities leading to the station with facilities for bike racks and lockers at the station
- The amount and location of parking provided and access shall reflect the availability of multi-modal transportation in the station area.
- Each station area shall be planned to reflect the unique specific geographic locations, its special features, and surrounding existing and planned land use.
- As TODs are more compact, high-quality urban design and architectural design shall be major consideration.
- Recognizing that San Bernardino and some portions of other jurisdictions have a high percentage of rental housing, encourage owner-occupied housing with density increases.
- Implementation mechanisms, planning concepts and planned development standards shall be flexible and realistic to allow increases in density and intensities reflecting changing market conditions and increases in transit usages over time.
- Recognizing the importance of the land use and transportation connection to the San Bernardino Valley, each city will support the conceptual policies and guidelines herein, will implement policies and guidelines herein, will work to attract public/private investments which are transit-supportive in the station areas and will assist SANBAG in seeking local

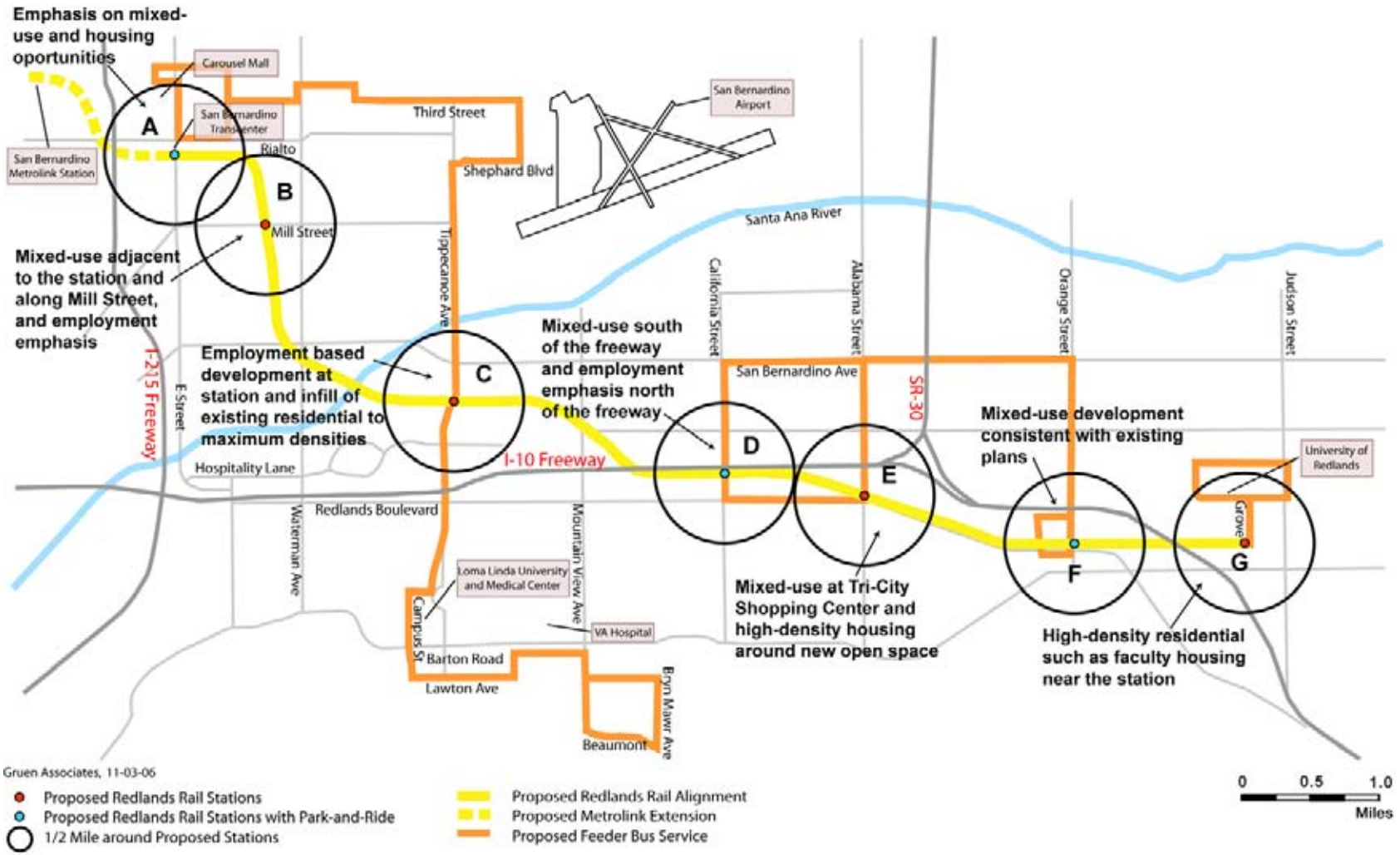


Figure 1-4: Overall Land Use and Linkage Directions for Each Station Area

matched funding for the Redlands Rail Project.

General Guidelines

General TOD guidelines apply to all station areas and are flexible depending on the uses in a specific area and unique conditions. There are found in Chapter 2.

The following are goals and objectives, land use and linkage concepts and policies for each city to consider for each station area.

SAN BERNARDINO TRANSCENTER

Goals and Objectives

Goals and objectives for the San Bernardino Transcenter area include:

- Integrate the Redlands Passenger Rail Station with other multi-modal transit and joint development on the Transcenter site.
- Emphasize mixed-use and housing opportunities in the station area at downtown densities and intensities.
- Extend downtown uses and pedestrian-friendly character to the E Street Station area.
- Capitalize on the Arrowhead Credit Union Park and the flood control channels as amenities for development.
- Provide attractively landscaped pedestrian linkages from downtown activity area and proposed new development to stimulate ridership at the Transcenter.

Land Use Concept and Linkages

The land use and linkage concept envisioned for the San Bernardino Transcenter Station area emphasizes mixed-use and housing opportunities at downtown densities to provide a 24/7 usage, “eyes on the street” and a market for downtown retail. Examples of this type of downtown development are found in Portland, Oregon, San Diego, Long Beach, Brea, Pasadena, and parts of Los Angeles. The land use and linkage concept illustrated in Figure 1-5 should be used as a guideline for development. This land use concept assumes that adequate open space and community

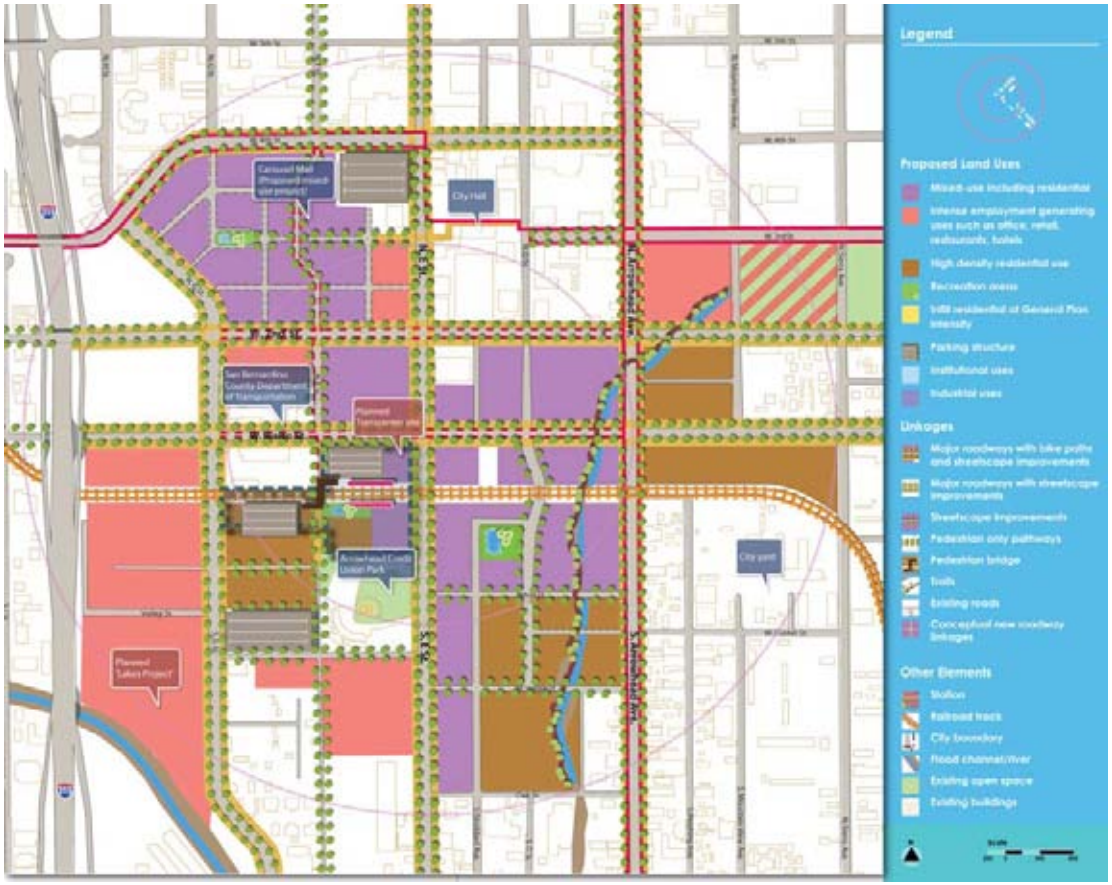


Figure 1-5: Land Use and Linkage Concept for the San Bernardino Transcenter

facilities will be provided within areas designated for mixed-use or housing. This concept should be further refined by the City of San Bernardino, Omnitrans, and potential developers using additional technical studies and community input.

Land Use Policy Recommendations

Land use polices to be followed to implement the land use concept include:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of this report to plan and design each project and streetscape in addition to the more specific recommendations in this Chapter.
- Plan for mixed-use and housing on underutilized areas and opportunity sites including:
  - The San Bernardino Transcenter site
  - The Carousel Mall with a variety of housing types and a strong retail presence along E Street, providing a critical mass of new development to transform the area's character
  - On large parking lots south of 2nd Street adding more intense development with vertical mixed use and parking structures
  - Adjacent to the Arrowhead Credit Union Park similar to the area around the Petco Stadium in San Diego
  - In the industrial areas east of E Street
- Plan for additional employment generating uses north of the planned South Lakes Project with linkages to the San Bernardino Transcenter site.
- Provide incentives for owner-occupied residential development with appropriate amenities. Incentives could include increased density, increased height, reduced parking, and expedited processing.
- Provide lot consolidation incentives and redevelopment for the land currently in industrial use south of the railroad.
- Allow densities up to 54 units/acre (the maximum permitted in downtown), and building heights up to five stories if certain amenities are provided. Allow greater densities and heights for senior housing and up to 10 stories if certain amenities, such as station improvements, public gathering spaces, shared parking and other need community benefits are provided.
- Allow floor area ratio (FAR) up to 4.0 for vertical mixed-use housing if certain amenities, such as station, pedestrian improvements, public gathering spaces, shared parking, owner-occupied housing, and other community benefits are provided.
- Provide active, public gathering spaces near the station with pedestrian amenities and public/private usable open space in property with residential improvements.

Circulation and Linkage Policy Recommendations

Circulation and linkage policies include:

- Allow for parking structures for park-and-ride shared with private development close to the San Bernardino Transcenter.
- Provide attractive streetscapes along E, G and N Streets, Arrowhead Avenue, 2nd Street, and Rialto Avenue linking developments with the station. Plan for at least 15 feet of area for sidewalks and landscaping along these arterials.
- Consider bicycle lanes along 2nd Street and Rialto Avenue in addition to those proposed along 4th Street, 3rd Street and Arrowhead Avenue to connect developments with the station area.
- Connect developments to bicycle paths planned along 2nd Street.
- Provide streetscape improvements and a major pedestrian pathway connection along F Street from the mixed use planned at the Carousel Mall to Mill Street.
- Consider a grade separated connection over the railroad tracks constructed jointly with private development.

- Provide landscaped pedestrian connections to the planned South Lakes Project (office development) and Arrowhead Credit Union Park to the E Street Station.
- Plan a trail along the existing north/south flood control channel which is west of Arrowhead Avenue to link new residential, mixed use, and live-work areas in existing industrial areas.
- Provide open space with water features distributed throughout to serve new development.
- Provide a grid of new roadways primarily east of E Street and within the Carousel Mall site to serve new development.

Implementing Policies

- Amend the City of San Bernardino General Plan Map and Zoning Map to designate more of the area within the ½ mile of the Transcenter Redlands Rail Passenger Station to CR-2 (Commercial Regional 2) except City yard area and other areas that the city determines are critical industrial areas. Alternatively create a transit village zone.
- Amend the City's General Plan to include the ½ mile E Street Station area within the Downtown Strategic Plan area and other areas of the plan as appropriate.
- Explore public/private partnerships to construct the station, its amenities and new development.
- Develop an incentive program for certain amenities needed in the downtown area to allow for the increased densities and FARs and design review.

MILL STREET

Goals and Objectives

The goals and objectives for planning the Mill Street transit village include:

- Plan a catalyst project as an independent development to attract first time home buyers, empty nesters, and those choosing to use transit. As the city attracts newer office establishments in downtown, this project could be an attractive option for new city dwellers. Planned with numerous amenities, good linkages and transit options, these could create a new niche market fueling further quality development.
- Revitalize the area along Mill Street with new mixed-use development oriented to the station and housing opportunities near the existing school.
- Plan for increased employment opportunities for San Bernardino International Airport related services.
- Link new development, the station and existing residential and employment with streetscape and waterfront trails.

Land Use Concept and Linkages

The land use and linkage concept envisioned for the Mill Street Station area emphasizes employment in the eastern quadrant of the station area which is nearer to the San Bernardino International Airport and concentrates mixed-use adjacent to the proposed Mill Street passenger rail station and along Mill Street (Figure 1-6). High density housing is suggested near the large vacant site designated for open space in the General Plan. Regional multi-purpose trails are planned along the flood control channel and along the rail alignment which would connect the existing residential neighborhood to the north, new high-density housing, and employment uses to the station. This land use concept will require a revision of the City's General Plan around the station and along Mill Street to allow for residential and mixed use near the station, existing school and planned open space. Figure 1-7 is one illustrative concept which follows the general policies, general guidelines and land use concept.

Land Use Policy Recommendations

Land use polices include:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of this report to plan and design each project and the public realm streetscape.

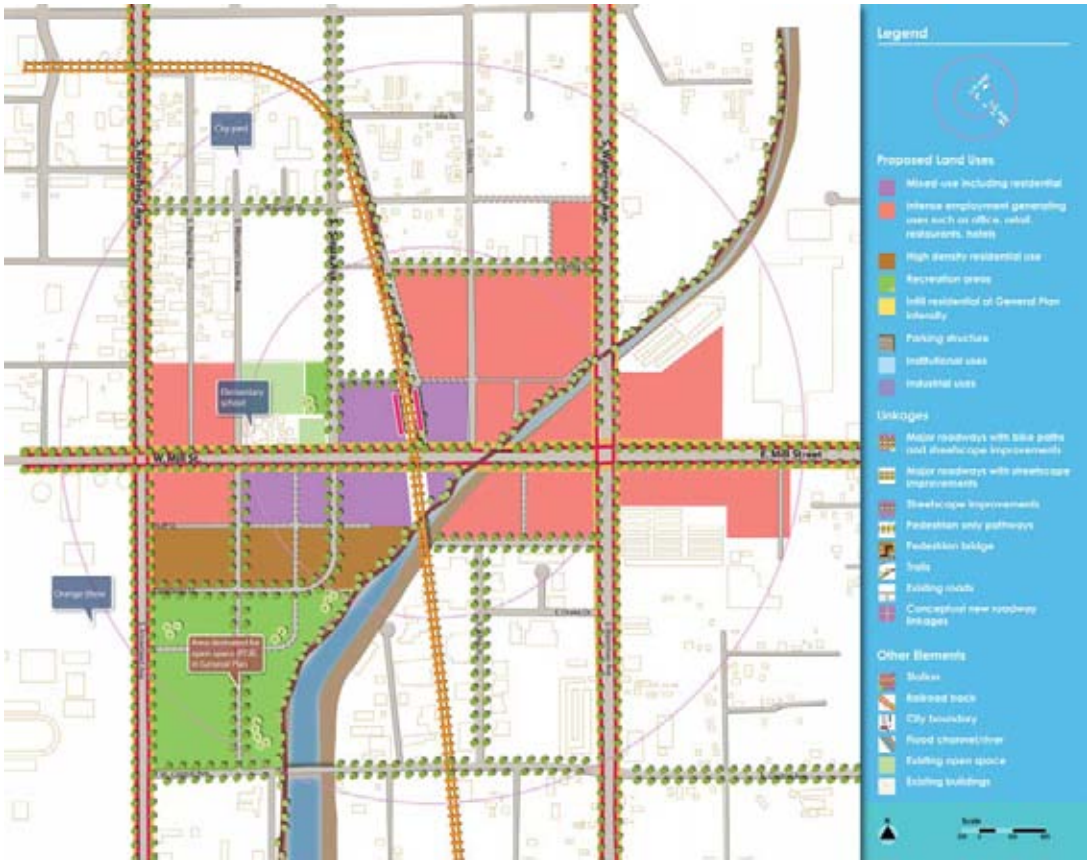


Figure 1-6: Land Use and Linkage Concept for the Mill Street Station

- Locate station north of Mill Street with an adjacent public gathering space to create a vibrant, active central focus for the area.
- Plan for mixed-use, housing, and more intensive employment generating uses including:
  - Mixed use on both sides of Mill Street between Arrowhead and the flood control channel
  - High density residential uses at a minimum of 24 units/acre concentrated adjacent to the recreation area designated in the General Plan
  - High employment generating uses such as offices on both sides of Waterman Avenue
- Provide incentives for densities up to 54 units/acre, FARs to 2.0, and building heights up to five stories for redevelopment of underutilized parcels to more transit supportive uses with amenities focusing on uses near the station.

Figure 1-7: Illustrative Concept for a portion of the Mill Street Station Area

- Provide incentives for owner-occupied residential development with appropriate amenities. Incentives could include increased

density, increased height, reduced parking, and expedited processing.

- Encourage low intensity employment uses such as warehousing and distribution centers to locate outside the ½ mile area.
- Discourage new uses with outdoor storage, sales, and services in the mixed-use areas.
- Provide buffering concepts between airport-oriented employment uses and residential uses when appropriate.

Figure 1-8 shows massing for the Mill Street station area with buildings lining Mill Street, the station area, and the flood control channel.

Circulation and Linkage Policy Recommendations

Circulation and linkage policies include:

- As called out in the San Bernardino Countywide Bicycle Map and as projects develop, link and phase the construction of a multi-purpose trail along the flood control channel leading to the station.
- Provide a trail system in the railroad right-of-way where possible to link the station to the existing single-family neighborhood in the northern portion of the station area. As railroad right-of-way is only 50 feet, also create a landscaped linkage adjacent to the right-of-way and along north-south streets.

Figure 1-8: Suggested Massing for Mill Street Station Area at 1.0 FAR

- Along Mill Street, provide attractive streetscape improvements including sidewalks of 12 ft to 15 ft wide and tall street trees of a similar species along Mill Street to change the overall character of the area and provide pedestrian access from the station to the Orange Show and new mixed-use developments. Also implement the planned countywide bicycle paths on Mill Street.
- Provide landscaped pedestrian connections and crosswalks to the elementary school from the residential areas.
- Implement streetscape improvements on Arrowhead and Waterman Avenues to improve visual and pedestrian connections as well as the planned countywide bicycle paths on these streets.

- With new development, create new landscaped roadways with pedestrian improvements.
- Rerouted local bus service to the station.

Implementing Policies

- Change General Plan "Heavy Commercial" near the station to a more transit-supportive land use designation which includes mixed-use, high density housing, office uses, and other more intensive employment uses.
- Develop incentive program for amenities needed in the area.
- Consider Economic Development Agency assistance in creating a catalyst project with a residential component in the ¼ mile area around the station which is of sufficient size to change the overall character of the area and is developed concurrent with the station.
- Create a set of incentives for the city to attract quality development as a signature public/private project for the Mill Street area such as reduction in permit fees, expedited permit process, parking reductions when transit is in construction, density and intensity bonuses, and lot consolidation.
- Provide incentives for high employment generating uses within ½ mile of the station area in cooperation with IVDA.

TIPPECANOE AVENUE

Goals and Objectives

The goals and objectives for planning the Tippecanoe transit village include:

- Plan for more intensive employment uses including offices, and retail, restaurants, and entertainment uses linked to the station.
- Infill the existing residential neighborhood creating compact development with direct linkages to the station.
- Make Tippecanoe Avenue an attractive multi-modal boulevard with tall trees, wider sidewalks, shuttle and bus service, pedestrian amenities, in addition to improved vehicular carrying capacity.
- Utilize the existing flood control channel as a multi-purpose trail.

Land Use Concepts and Linkages

The land use and linkage concept envisioned for the Tippecanoe Station is to continue employment based development in the northwest, northeast, and southwest quadrants of the station area, however focusing new development on more intensive employment generating uses such as offices, restaurants, and retail rather than industrial uses (Figure 1-9). These employment generating uses, when developed, should be designed with clear pedestrian pathways to an improved Tippecanoe Avenue which would then lead directly to the station.
Infill existing residential neighborhood to maximum densities permitted in the General Plan, and provide landscaped pathways along collector streets leading to Tippecanoe Avenue and a new landscaped linkage along the flood control channel.

Tippecanoe Avenue is improved as a boulevard with tree-lined walkways on either side to protect the pedestrian, landscaped medians, new bridge improvements, new ramps, decorative crosswalks, new travel lanes, restaurant, and neighborhood serving retail along the east side replacing the existing deteriorated structures. These new buildings would face the new landscaped walkways along Tippecanoe and parking is in the rear with landscaped walls buffering the parking from the residential.

Figure 1-10 is an illustrative concept with Tippecanoe Avenue improved with tree-lined pathways and new employment generating uses located close to these pathways which link directly to the station fostering walking to jobs and to housing.

Land Use and Policy Recommendations

Land use polices include:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of this report to plan and design each project and the public realm streetscape.

- Locate the rail station on west side of Tippecanoe Avenue with a public gathering space adjacent and an optional pedestrian bridge over the railroad tracks and flood control channel.

- Plan for development of older industrial uses within ¼ mile of the station into employment intensive uses (that have ratios in the 250-400 square foot per employee range) such as office, retail, and restaurants.

- Consider hotel use incorporated with a new retail, office complex within ¼ mile of the station.

- Infill existing residential neighborhood with new residential units at the maximum densities currently permitted in the General Plan.

- Provide incentives for owner-occupied residential development with appropriate amenities. Incentives could include high density, reduced parking, and expedited processing.

- Along the east side with a frontage along Tippecanoe Avenue, attract neighborhood serving uses such as retail, restaurant, and live-work units that are designed to face the landscaped parkway along Tippecanoe Avenue, and parking in underground or in the rear.

- Before the Redlands Rail is constructed, allow reduced parking standards within ¼ mile of the station if reduced demand is demonstrated by a shared parking study. Once transit is constructed, consider intensifying existing parcels by adding new buildings with reduced parking standards.

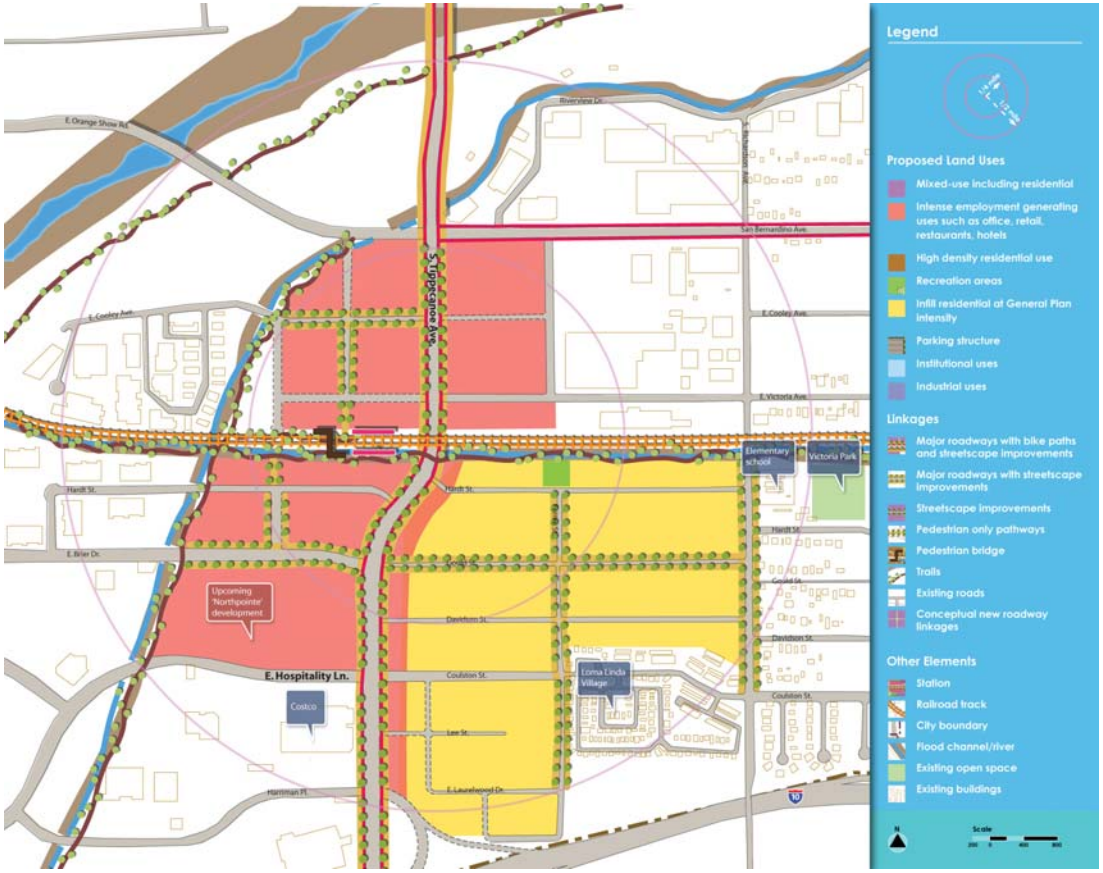


Figure 1-9: Land Use and Linkage Concept for the Tippecanoe Avenue Station

Circulation and Linkage Policy Recommendations

Circulation and linkage policies include:

- Provide shuttle drop-off and kiss and ride at the station.

- Make streetscape improvements including landscaping, improved sidewalks and enhanced crosswalks along Feree Street,.

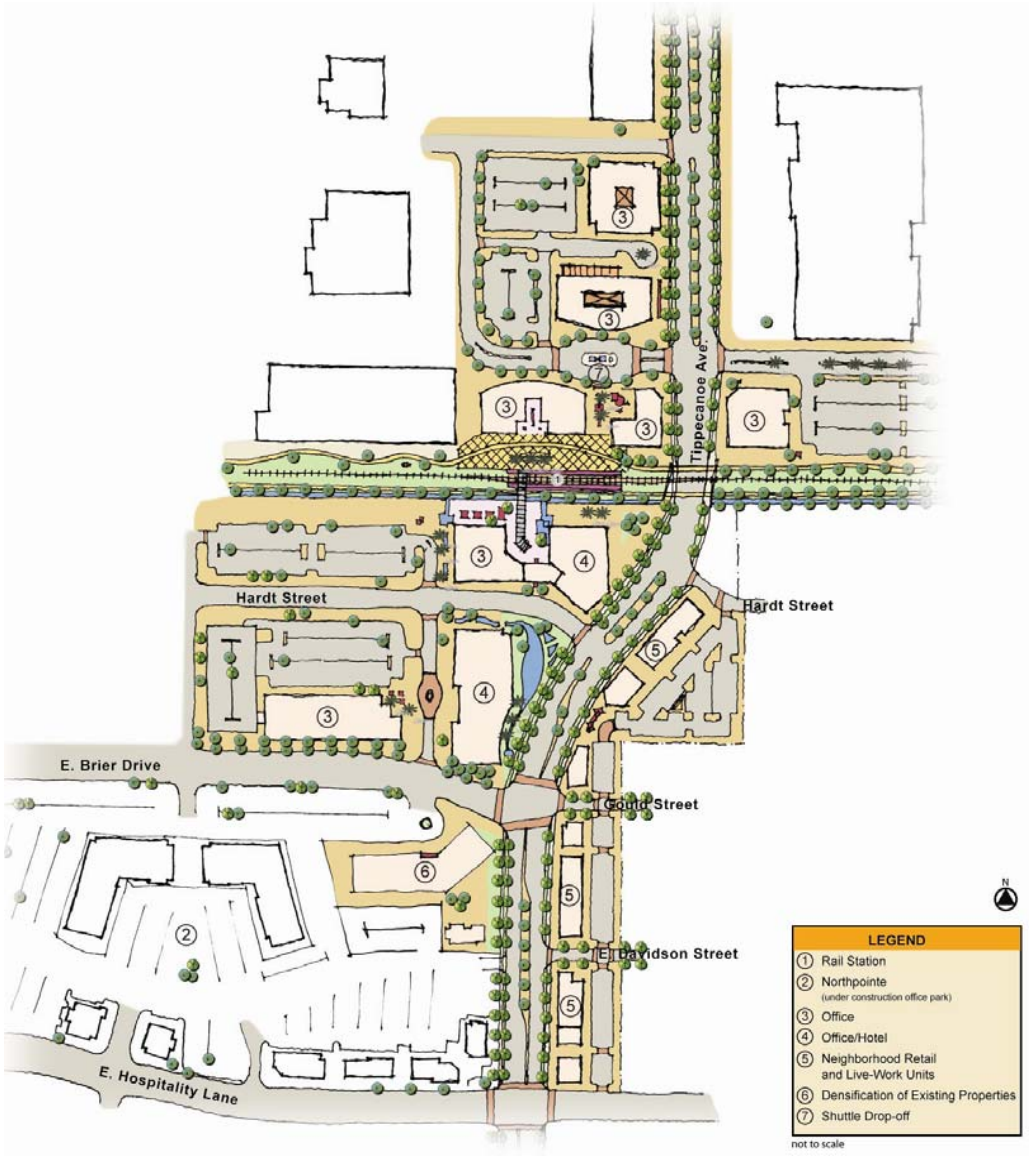


Figure 1-10: Illustrative Concept for Tippecanoe Station Area Development

Gould Street and Coulston Street linking the existing residential neighborhood to pedestrian pathways along Tippecanoe Avenue

- Plan Tippecanoe Avenue as a multi-modal boulevard which is not only for vehicular traffic lanes but also for shuttle service to the airport and Loma Linda, and for canopy tree-lined, pedestrian pathways on either side of the travel lanes leading to the passenger rail station. Tippecanoe Avenue pedestrian pathways would link Hospitality Lane development, the upcoming Northpointe development, and the residential neighborhood. This is most critical as Tippecanoe Avenue is currently the only street in the station area crossing the railroad tracks and has heavy truck traffic. The solution may entail acquisition of additional right-of-way along Tippecanoe Avenue and/or requiring setbacks and easements on adjacent private property to accommodate attractively landscaped pedestrian pathways.
- Develop a landscape trail along the existing flood control channel and/or rail right-of-way providing east/west access to the station.
- Within new development, create new landscaped roadways with pedestrian improvements.
- Reroute local bus service to the station.
- Provide feeder bus routes serving SBIA and Loma Linda.

Implementing Policies

The following implementing policies are suggested for the City's consideration:

- The City of San Bernardino shall provide urban design input to any widening plans for Tippecanoe Avenue to ensure that ample sidewalks and landscaping are provided on both sides of the boulevard and across the flood control bridge.
- Amend the General Plan to change the area within ¼ mile of the station currently designated IL to more intensive employment uses and with higher FARs which as similar to the FARs permitted along Hospitality Lane.
- Establish a minimum density of 17 units/acre for future development in the existing residential neighborhood within ½ mile of the station and encourage development to maximum density permitted.
- Modify the development standards of CR-3 or create a new TOD designation and zone to allow for more "urban" development with buildings in the front, parking in the rear, parking structures, stacked uses, reduced setbacks and higher FARs in exchange for more pedestrian amenities and community improvements.
- Work with the San Bernardino International Airport and the City of Loma Linda in creating a shuttle system from the station to these areas.

CALIFORNIA STREET

Goals and Objectives

The goals and objectives for planning the California Street transit village include:

- Redevelop the area bounded by California Street, Redlands Boulevard, the railroad tracks and New Jersey Avenue to establish a new mixed-use designation organized around a "town-center" green with the rail station as a focus and with strong linkages to the surrounding neighborhoods.
- Plan for more intensive employment uses north of the freeway with linkages to the planned rail station.
- Provide clearly defined and attractive landscaped pedestrian and bicycle linkages between the planned mixed use development south of Redlands Boulevard in Loma Linda and the planned rail station.

Land Use Concepts and Linkages

The land use concepts envisioned for the California Street station area emphasize mixed use south of I-10 freeway and intensive employment uses north of the freeway (Figure 1-11). The passenger rail station, planned to the east side of California Street would be located next to the grove of trees and adjacent to an existing shopping center which currently has big box retail (Wal-Mart and Food 4 Less) and surface parking. This shopping center could be transformed into more transit-supportive uses including a mix of shops, restaurants, entertainment venues, community facilities, and housing organized around attractively landscaped outdoor pathways interconnecting with the station and a public gathering space for the surrounding neighborhoods. Building height would vary from two to five stories and a parking structure would serve the center and transit. The character could be similar to Victoria Gardens, the Claremont Village or downtown Fullerton.

Also new streetscape improvements along California Street and Redlands Boulevard would link the new mixed use development planned in Loma Linda and employment intensive uses north of the freeway with the station. Trails planned along the flood control channel would also link developments in ¼-mile area of the station.

Figure 1-12 illustrates one possible layout reflecting the land use and linkages concept. Many other layouts are feasible using the same policies.

Land Use and Policy Recommendations

Land use polices include:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of

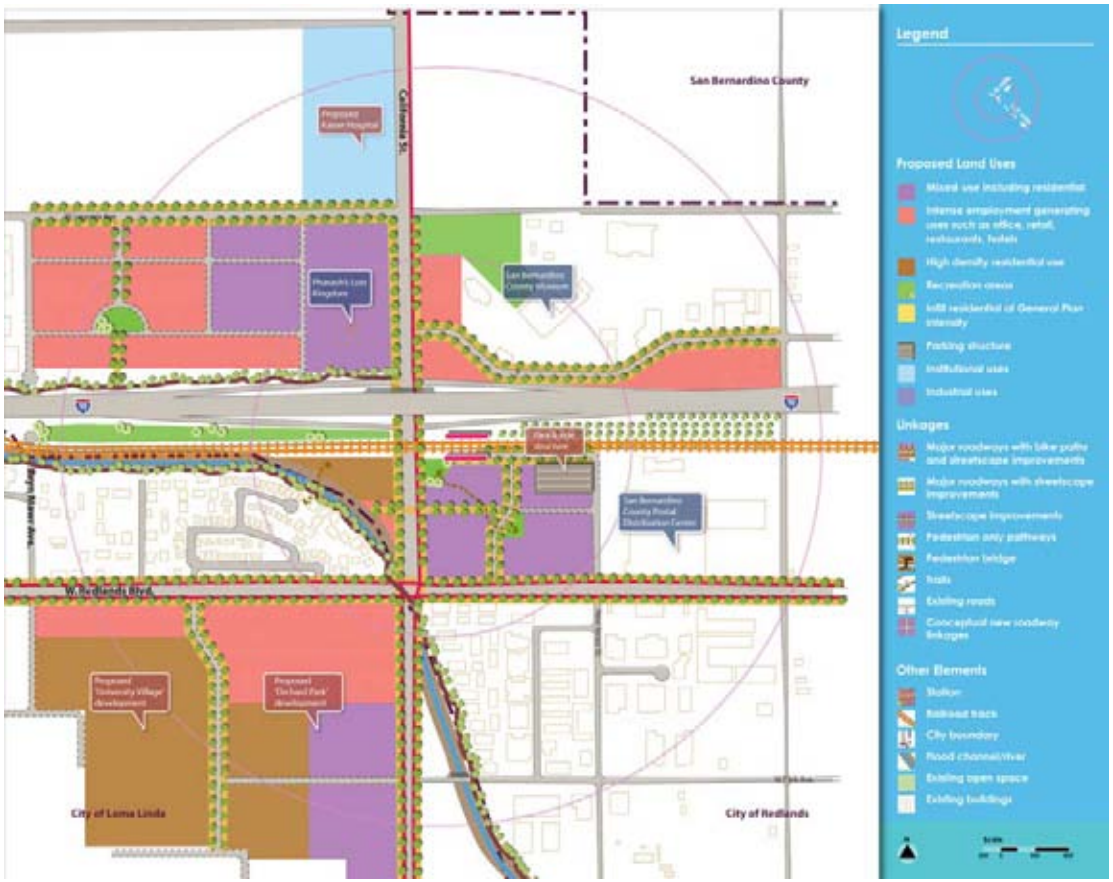


Figure 1-11: Land Use and Linkage Concept for the California Street Station

this report to plan and design each project and the public streetscape along with the East Valley Corridor Specific Plan.

- Redevelop the area between California Street, New Jersey Avenue, the railroad tracks and Redlands Boulevard as a mixed use catalyst project with neighborhood retail, food stores, restaurant, multi-family housing, entertainment, community facilities, other neighborhood serving, other transit supportive uses, and parking shared between the development and transit riders. Include a public gathering place/focal point at the station, a shared parking structure for park and ride, kiss and ride, wide landscaped sidewalks, and pedestrian pathways/open spaces lined with shops and restaurants leading to the station.

- Locate residential units which are a part of a mixed-use center at least 300 ft away from the I-10 freeway right-of-way and at greater distances if necessary to address noise and air quality concerns.

- Vary the building mass of the mixed use center adjacent to the station with two or three stories in height near Redlands Boulevard and up to four stories in height in the center of the site.

- To place more jobs near transit, develop areas north of the freeway which are designated for commercial or commercial/industrial uses in the General Plan at minimum employee ratios of 300 SF/employee and at maximum intensities (or higher intensities) permitted in the East Valley Specific Plan.

- As nearby transit reduces a household's need for multiple automobiles, reduce the residential parking requirements for a project which is part of a mixed use center and is within ¼ miles of the rail transit station. This reduction could be facilitated by sharing the residential parking required for guests with transit park and ride spaces and by requiring only one covered parking space to be assigned for residential units and the other required spaces shared with commercial and transit uses. In this case, a shared use study

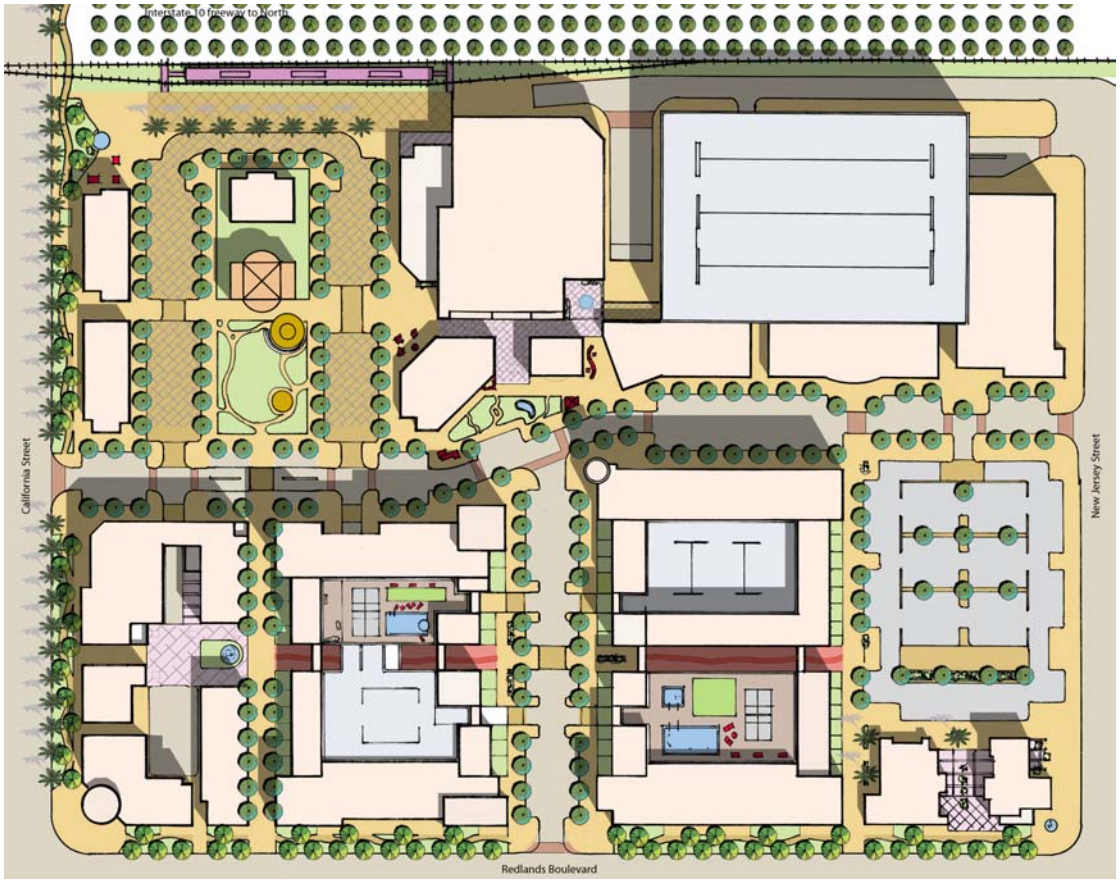


Figure 1-12: Illustrative Concept for the California Street Station Area

should be prepared describing the shared nature of parking for proposed uses.

- Plan high employment uses on areas north of the freeway which were used for agricultural uses in 1987.

Circulation and Linkage Policy Recommendations

Circulation and linkage policies include:

- Improve both California Street and Redlands Boulevard which are designated in the City's plans as 120 ft wide major arterials with streetscape improvements in adjacent 30 feet setback areas.
  - For California Street, modify the community design concept in the East Valley Corridor Specific Plan which shows a six-foot wide sidewalk at the curb by placing the palms near the curb in a parkway and a widened sidewalk to improve the pedestrian's safety and connections from the neighborhood. In addition, keep the Class I bike path recommended in the Specific Plan.
  - For Redlands Boulevard in the mixed-use area, the parking setback should not be less than the building setback as this encourages parking along the street. Allow the setbacks to the buildings in the mixed-use area to be reduced when shops and restaurants and their entrances face Redlands Boulevard's sidewalks and a landscaped pedestrian-friendly character as envisioned in the City's plans is retained.
- Plan the intersection and pedestrian crossings of California Street and Redlands Boulevard and the flood control channel to facilitate pedestrian access to the rail station.
- Plan for the improvement of the pedestrian under crossing of the freeway for wider pedestrian crossings which are well lit.
- Incorporate the multi-purpose trail planned along the flood control channel in developing any adjoining development.

- Each project developed in the area should incorporate clearly defined pedestrian connections and signal pedestrian connections to the stations.
- Provide feeder bus route serving developed area north of I-10.

Implementing Policies

- Make necessary improvements to the General Plan, East Valley Corridor Specific Plan and Zoning to permit mixed use at densities and floor area ratios consistent with other transit-oriented developments in other cities and to implement the above policies.
- Create a new mixed-use land use category as a part of the East Valley Corridor Specific Plan or modify existing commercial category which permits commercial and residential uses with densities up to 27 units/acre and FARs up to 2.0 in the station areas if community benefits such as station canopy, station amenities, special landscaping, pedestrian improvements and community uses are provided.
- Work with Caltrans on ramp improvements, signalization, station locations, pedestrian crosswalks along California Street, and landscape treatment to ensure that overall TOD character envisioned is achieved.
- As Redlands has a growth limit of 400 units per year, a phased approach to station area development should be considered with downtown as first priority and then priority given to TOD projects in other station areas which provide public benefits and amenities such as pubic gathering spaces, park-and-ride spaces, station construction and amenities, a substantial number of jobs, and high density owner occupied housing with outdoor recreational space.

ALABAMA STREET

Goals and Objectives

The goals and objectives for planning of Alabama Street station area include:

- Revitalize the Tri-City Shopping Center and adjoining properties as a more pedestrian-friendly and transit-supportive development.
- Introduce high-density housing opportunities focused on new major open space within ½-mile of the transit station.
- Provide a trail along the railroad tracks where, feasible and improve streetscapes to transform the character and link adjoining development to the station.

Land Use Concepts and Linkages

The land use and linkage concept envisioned for the Alabama Street Station emphasizes mixed-use at the Tri-City Shopping Center site and along Redlands Boulevard as well as multi-family residential focused around a new open space. This overall concept, illustrated in Figure 1-13, anticipates that the location of specific land uses will be refined as a part of the City of Redlands General Plan update.

In this concept, Colton Avenue is realigned per the City's plan to intersect with Redlands Boulevard at a 90 degree intersection to reduce traffic congestion at the five legged Alabama Street and Redlands intersection. The station would be located directly to the north of Colton Avenue and integrated into the proposed revitalized Tri-City development. The Tri-City redevelopment envisions a walkable environment organized along a main street with wide landscaped sidewalks and ample pedestrian amenities similar to the promenades in Santa Clarita, Victoria Gardens or Santa Monica. A paseo/pedestrian pathway would link the station to this main street and to the proposed housing and mixed-use development in the remainder of the area.

Land Use and Policy Recommendations

Land use polices include:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of this report to plan and design each project and the public realm streetscape

- Locate the rail station east of Alabama Street and north of Redlands Boulevard where the right-of-way is 100 feet wide.

- Plan for redevelopment of the Tri-City Shopping Center into a mixed-use center with department stores, retail shops, restaurants, entertainment uses, offices, housing, and other neighborhood service uses organized around a main street and intersecting pedestrian pathways. This main street shall have wide tree-lined sidewalks with ample pedestrian amenities. A strong pedestrian connection should be provided from this "main street" to a public gathering space adjacent to the planned rail station.

- Locate residential units which as part of a mixed use area are at least 300 feet away from the I-10 freeway right-of-way and at greater distances if necessary to address noise and air quality concerns.

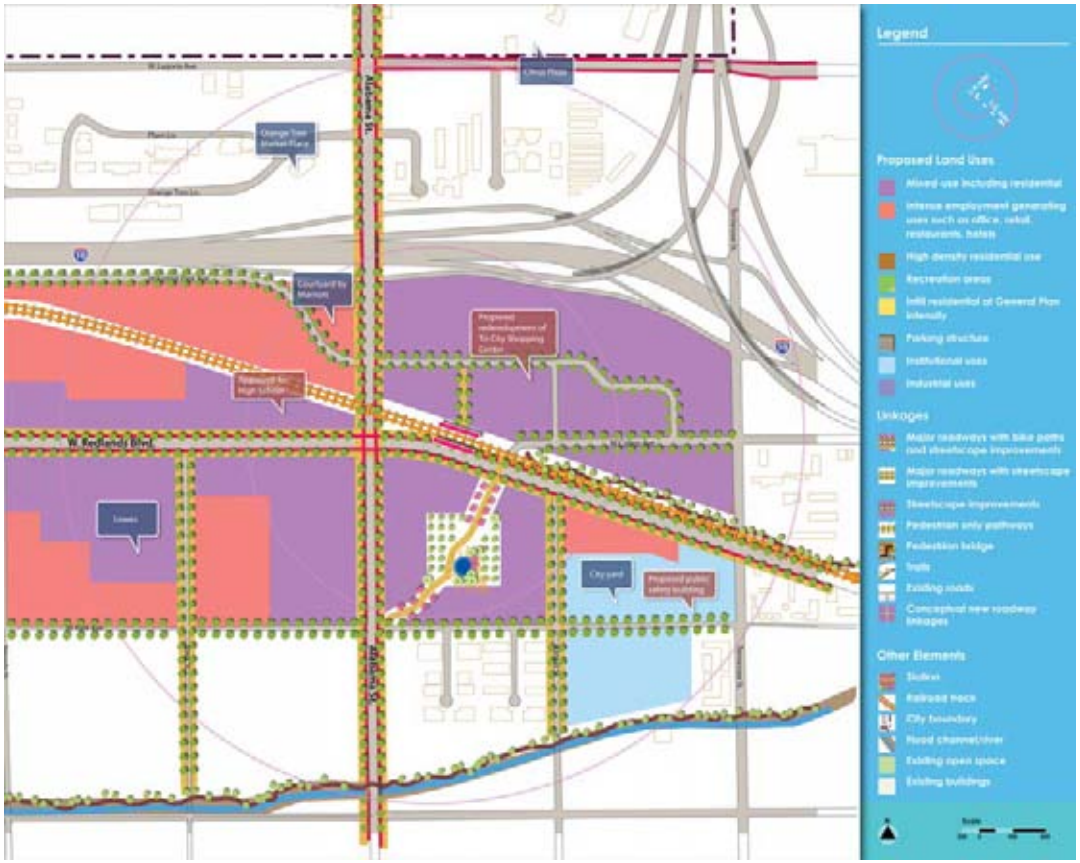


Figure 1-13: Land Use and Linkage Concept for the Alabama Street Station

- Plan for mixed use along Redlands Boulevard replacing existing auto oriented uses.

- When appropriate, incorporate larger retail businesses in new developments, such as supermarkets and home improvement stores while adding transit supportive uses.

- Plan for mixed-use development along Redlands Boulevard west of Alabama Street replacing existing auto-oriented development:

  - Buildings and their entrances should be located close to Redlands Boulevard with parking in the rear, underground, or in an above-ground parking structure. (See guidelines in Chapter 2 for treatment of parking.)

  - Existing retail uses such as supermarkets and home improvement stores may be incorporated into redeveloped sites in addition to more transit supportive uses such a small retail shops, restaurants, and housing

- Plan for multi-family, high-density residential development south of Colton Avenue focused on a new green space with active and passive recreational uses. Provide special landscaping treatment such as screening walls and berms to buffer multi-family from adjacent planned industrial uses and the city yards.

- As nearby transit reduces a household's need for multiple automobiles, reduce the residential parking requirements of a project which is part of a mixed-use center which is within ¼ mile of a transit station. This reduction could be facilitated by combining residential parking required for guests with commercial parking and by requiring only one covered space assigned to a unit. The other required residential parking space could be shared with commercial or office uses. In this case, a major project should prepare a shared use parking study describing the shared nature and management of this parking.

Circulation and Linkage Policy Recommendations

Circulation and linkage policies include:

- Reconfigure Colton Avenue to intersect with Redlands Boulevard at 90 degrees.
- Provide pedestrian crossing of Redlands Boulevard at this realigned Colton Avenue to link areas south of Redlands Boulevard with the station.
- Improve both Alabama Street and Redlands Boulevard which are designated in the City's plans as 120-ft wide major arterials with streetscape improvements in the adjacent 25 ft to 30 ft setback areas.
    - For Alabama Street in the mixed-use area, the parking setbacks should not be less than the building setbacks as this encourages parking adjacent to the street. Allow the 30-ft setbacks to buildings be reduced when shops and restaurants and their entrances face Alabama Street's sidewalks and the pedestrian character envisioned is provided.
    - For Redlands Boulevard in the mixed use areas, the parking setback should not be less than the building setback to encourage buildings along the street, not parking. Allow the setbacks to buildings in the mixed use areas be reduced when shops and restaurants and their entrances face Redlands Boulevard's sidewalks and a landscaped pedestrian-friendly character as envisioned by the City's plan is retained.
- Each project developed in the area should incorporate clearly defined landscaped pedestrian connections to Redlands Boulevard and Alabama Boulevard and on to the station.
- Provide feeder bus service to developed area north of I-10.

Implementing Policies

- Modify the General Plan and East Valley Corridor Specific Plan to permit mixed use and housing in the area at transit-supportive densities and intensities.
- Provide density and intensity incentives in these plans for adjoining developments to construct the rail station and pedestrian amenities around the station and paths leading to the station.
- Work with property owners and the redevelopment agency of the City of Redlands to consolidate properties to create catalyst mixed use centers which integrate transit supportive uses and densities in a pedestrian-friendly environment linked to the station.
- Phase redevelopment of other properties for mixed use over time as development become obsolete incorporating existing business such as home improvement stores, a supermarket in a more walkable environment with more transit supportive uses, and parking structures for more compact development.
- As Redlands has a growth limit of 400 units per year, a phased approach to station area development should be considered with downtown as first priority and then priority given to TOD projects in other station areas which provide public benefits and amenities such as pubic gathering spaces, park-and-ride spaces, station construction and amenities, a substantial number of jobs, and high density owner occupied housing with outdoor recreational space.

ORANGE STREET

Goals and Objectives

Consistent with the Downtown Redlands Specific plan and the Draft Downtown Plan, the goals and objectives are:

- Centrally locate the station in downtown to provide optimum service and provide improved linkages to the station.
- Promote Downtown Redlands economic vitality by encouraging a mix of uses.
- Create a pedestrian-oriented environment.
- Maintain and enhance a distinct Redlands' character.
- Enhance and extend the civic realm.
- Provide public improvements that will attract new private investment and economic development.
- Preserve historic buildings and sites.

Land Use Concepts and Linkages

The Station Integrated With Development and Park and Ride in a Shared Structure

The station location selected is near Orange Street and its final configuration would depend on available right-of-way adjacent to the existing rail right-of-way and technical considerations to be investigated further during the preliminary engineering phase. Based on available information, configurations to consider:

- West of Orange Street right-of-way maps indicate an existing width of 35.9 feet. To fit the station within the right-of-way, a split platform station would be necessary with the east bound platform east of Orange Street and the west bound west of Orange Street.
- Or preferably if an additional 10 – 20 ft of right-of-way is obtained adjacent to the station, both platforms could be on the west side of Orange Street and integrated with the existing and planned development near the Krikorian Theater. As an alternative, with participation from the adjoining property owners, the historic Santa Fe station could be used as one of the platforms with another platform constructed to the north.
- The new planned parking structure to the north of the rail right-of-way should contain some parking spaces for park and ride. If the development occurs before the rail project with its required parking, some of the parking may be able to be shared or allocated to park-and-ride in the future with the additional access provided by the rail development. SANBAG, the city officials, and private development will need to coordinate on the allocation of funding for parking. An additional structure east of Eureka Street could have additional spaces, if required. For opening day of the rail project, parking could be provided in surface lots, if available. Parking and traffic issues will be further analyzed during the environmental impact stage of the rail project.

Land Use and Station Area Connectivity

The land use concept envisions the station integrated with the activities planned adjacent to the existing Krikorian Theater. Figure 11-4 in Chapter 11 shows an early plan for expansion of the Krikorian Theater by the developer and the surrounding area as mixed use with retail shops, restaurants, offices, and housing center along a pedestrian-friendly street connecting Eureka Street and Orange Street. Throughout the development would be courtyards and plazas, adjoining the sidewalks with canopy trees, and other pedestrian amenities. The station shown in red could fit into the planned plaza, providing easy access to the development and surrounding areas. Patrons could either walk along the pedestrian street or through the historic station to the uses east of Orange Street.

Figure 11-5 in Chapter 11 shows the Draft Downtown Plan prepared by Torti Gallas with suggested modifications relative to the Redlands Passenger Rail indicated at the top of the drawing. These include a more intense mixed-use development west of Eureka Street, continue the rail and include trail to the

University of Redlands along the right-of-way, and future mixed-use at 7th Street and Stuart Street with pedestrian access to the rail station via the new trail within the right-of-way where feasible.

Linkages to the station area would be along the city sidewalks enhanced with streetscape improvements. Sidewalk improvements along Redlands Boulevard would provide access to ESRI and other businesses to the west.

Land Use and Policy Recommendations

Land use polices include:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of this report to plan and design each project and the public streetscapes.
- Locate the station between Orange Street and Eureka Street with a strong pedestrian connection to the adjoining development, with park and ride spaces in a shared parking structure north of the railroad tracks which would have a grade separated pedestrian crossing of the tracks, a pedestrian gathering space adjacent to the station, and kiss-and-ride.
- Consistent with the uses proposed in the Draft Downtown Plan and Downtown Specific Plan, locate mixed use and other transit supportive uses and create a pedestrian-friendly environment in the station area.
- As nearby transit reduces households need for multiple automobiles, reduce the residential parking requirements of a project which is within ½ mile of the passenger rail transit station. At least one covered assigned parking space shall be provided per residential unit and any additional spaces assigned per units could be shared with commercial and transit uses. The precise amount of shared parking should be proposed and supported by a shared parking study prepared by a licensed traffic engineer.

Circulation and Linkage Policy Recommendations

Circulation and linkage policies include:

- Improve streetscape and sidewalk connections along Redlands Boulevard along 3rd Street leading from Redlands Mall to the station along Orange Street to State Street and north under the freeway along Eureka Street and Stuart Street.
- Incorporate a multi-purpose trail in the right-of-way west of Orange Street to link future developments of this are with the station.
- Each project developed in the area should incorporate clearly defined pedestrian connections to the station.

Implementing Policies

- Revise the General Plan and Downtown Specific Plan as necessary to allow mixed-use, densities up to 27 units/acre, FARs to 2.0, and building height to five stories within the station area if mixed use guidelines are followed and community benefits such as right-of-way for the station, station canopy, other station amenities, special landscaping, park and ride spaces, other pedestrian-linkage improvements or transit supportive uses are provided.
- Work with the City's redevelopment agency and the property owner/developer of the property adjacent to the Orange Street station for additional right-of-way and to integrate the stations with the planned development.
- As Redlands has a growth limit of 400 units per year, a phased approach to station area development should be considered with downtown as first priority and then priority given to TOD projects in other station areas which provide public benefits and amenities such as pubic gathering spaces, park-and-ride spaces, station construction and amenities, a substantial number of jobs, and high density owner occupied housing with outdoor recreational space.

UNIVERSITY OF REDLANDS

Goals and Objectives

Goals and objectives for the University of Redlands station include:

- Locate the station adjacent to the University of Redlands with strong linkages to the campus academic and residential areas.
- Plan for the maximum residential densities permitted in the City of Redlands General Plan in the ½ mile radius of the station.
- Incorporate trails in the station area that link with the planned required trail system and the Zanja.

Land Use Concepts and Linkages

The land use and linkages concept envisioned for the University of Redlands Station Area places the station in the 100 ft wide rail right-of-way between Cook Street and Grove Street Figure 1-14).

The vacant area directly to the north of the station on University property would be developed for transit-supportive uses such as faculty housing and the vacant areas not owned by the University east of Grove Street and south of the Zanja as high density housing as shown on the City's General Plan.

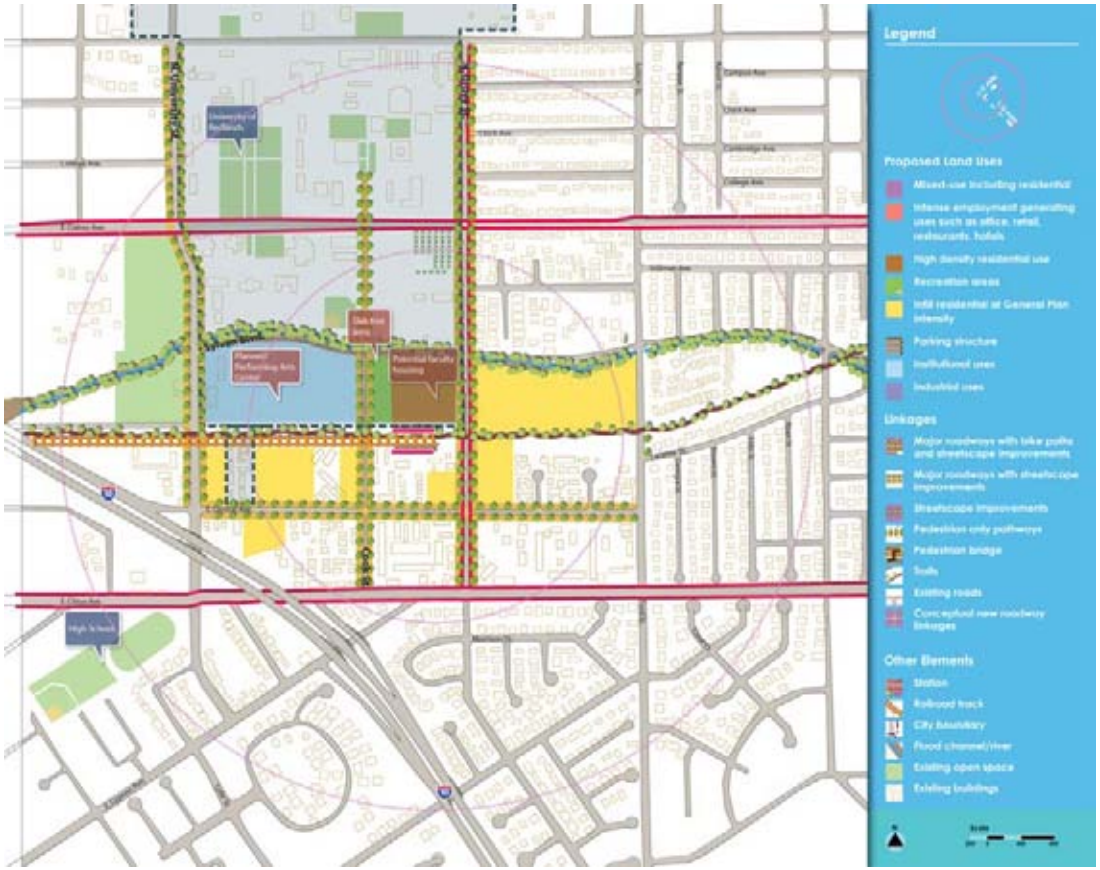


Figure 1-14: Land Use and Linkage Concept for the University of Redlands Station

Cook Street alignment north and south of the station could be improved by the University with landscaping, and pedestrian amenities linking the University and the surrounding areas to the station. Sylvan Boulevard, the Zanja, and trail connections along University Street and Grove Street would serve new development and link to the station. Due to the wider rail right-of-way, trail connections could be within the right-of-way linking to the regional trail/bicycle system. It is also proposed that some land north of railroad tracks incorporate some of the existing oak trees which are an important community resource.

Land Use and Policy Recommendations

Land use polices include:

- On University properties in the station area, provided transit supportive uses such as faculty housing, the planned Art Center and theater, and other residential uses at a minimum density of 20 units/acre.
- On private property in the station area, provide minimum density which is close to or equivalent to the City's maximum density permitted in each General Plan designation.
- Incorporate natural features of the site such as oak trees and the Zanja in planning new developments.

Circulation and Linkage Policy Recommendations

Circulation and linkage policies include:

- Provide space for a trail along the rail right-of-way linking the station and University with the Santa Ana River trail system.
- Work with University to design a strong pedestrian connection along Cook Street north and south of the station.
- Incorporate a public gathering space near the station preserving some of the existing oak trees near Cook Street and the station.
- Plan for improvements to Sylvan Street for access in conjunction with developments planned on University property and incorporate preservation of the Zanja.
- Make pedestrian and other streetscape improvements on Grove Street, University Street, Central Avenue, and Cypress Avenue.
- Provide feeder bus service to the University area.

Implementing Policies

- SANBAG and the City to work with the University of Redlands during its master plan process to ensure that land use, streetscape and linkage concepts on University properties are supportive of the Redlands Rail Passenger Study.
- Establish a minimum density for the City's land use designations in the station area. Currently, the General Plan has designations from 0 to 27 units/acre. A minimum density in the range of 20 units/acre would be appropriate.

1.8 RIDERSHIP

The land use concepts and the associated land use recommendation for each station area lead to a more intensified development scenario than the current SANBAG baseline suggests for these station areas. The development potential for the intensified scenario is measured and compared to the baseline alternative for population (Table 1-1), employment (Table 1-2) and housing units.

Table 1-1: Population Potential in Station Areas by Land Use Scenario

	Land Use Scenario	
	Baseline	Intensified
E Street	16,558	29,800
Mill	352	4,900
Tippecanoe	5,546	5,500
California	3,906	5,800
Alabama	0	3,800
Orange	6,655	Similar to Baseline
University	4,556	6,100

Table 1-2: Employment Potential in Station Areas by Land Use Scenario

	Land Use Scenario	
	Baseline	Intensified
E Street	27,880	27,900
Mill	12,072	17,500
Tippecanoe	11,738	17,300
California	8,514	10,300
Alabama	9,535	13,000
Orange	28,709	Similar to Baseline
University	1,078	Similar to Baseline

The baseline alternative assumes that development on available vacant land will progress to the maximum standards based on

the current planning documents. The intensified development alternative assumes that in presence of a modern and higher capacity transit system, the projected growth in city areas would get redistributed to concentrate in the station areas at intensified levels. In fact this connection between land use and transportation is the very premise for this station area planning study.

Table 1-3 shows the travel demand forecasts for the Redlands Rail Corridor for the baseline and intensified development scenarios.

Table 1-3: Station Activity by Land Use Scenario and Parking Demand

	Land Use Scenario	
	Baseline	Intensified
Daily Riders	7,410	11,410
Station Activity (Boarding + Alighting)		
E Street	4,670	6,870
Mill	910	2,060
Tippecanoe	1,220	2,400
California	2,570	3,440
Alabama	1,280	2,010
Orange	2,710	4,220
University	1,450	1,800
Park-and-Ride Demand (Spaces)		
E Street	40	90
California	370	480
Orange	260	300

It is observed that the ridership projections increase by as much as 53% for the intensified development alternative. Table 1-3 also shows park-and-ride demand for the station sites in 2030.

The above tables and the comparative numbers indicate that a TOD is a complex mix of urban uses and amenities that are symbiotically correlated to a higher capacity transit systems. A TOD is able to support a dense population and employment because of an efficient transit system that can bring in and take out people quickly without relying on the car and surface roads in entirety. At the same time, these larger concentrated populations, businesses and amenities support the transit system through increased travel demand and make it feasible for investment and operation.

This page intentionally left blank.

2

TRANSIT VILLAGE VISION AND GENERAL POLICIES/ GUIDELINES FOR ALL STATION AREAS

2.1 A VISION FOR DEVELOPMENT AROUND STATIONS

The cities of San Bernardino, Loma Linda, and Redlands are part of a larger area called the San Bernardino Valley, which is one of the fastest growing regions in Southern California. By the year 2030, SANBAG estimates that the San Bernardino Valley will experience 36% more population, 77% more jobs and 53% more travel trips. Places for new housing and jobs to serve this growing population need to be found to maintain a desirable quality of life for individuals living, working and playing in these cities. Locating appropriate quality development near transit stations and providing linkages to the transit stations have the potential to capture trips to transit from automobile modes of travel. This relief in traffic congestion will in turn improve overall environmental quality in these cities.

Transit Villages at Redlands Rail Passenger Stations

The concept for development adjacent to transit stations is often called transit-oriented development (TOD) or transit villages. These concepts also have similarity with "livable community" concepts and SMART growth concepts, terms frequently used by planners.

The vision for the Redlands Passenger Rail Station Area Plan is a compact; pedestrian-friendly transit village at each of the planned stations along the route with multi-modal connections to the surrounding communities. The transit village encompasses a ½-mile station area encircling the station, which would be a ten-minute walk for those living and working in the station area, reducing the need for a car (Figure 2-1). Within 1/4- mile of the station, or a five-minute walk, more intensive uses would be located with uses becoming less intense at the edges if close to sensitive neighborhoods.

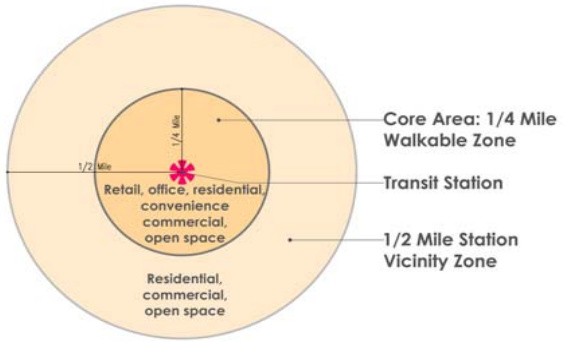


Figure 2-1: TOD Diagram

Those living and working outside this ½-mile station area would reach the rail station via an interconnected network of bus routes, shuttles, streets, bicycle paths, and pedestrian trails or pathways. In some locations near the freeways, park-and-ride lots would be provided for those traveling by automobile.

The San Bernardino Countywide Bicycle Map, Figure 2-2, illustrates the many planned bicycle connections which intercept in the station areas.

Figure 2-3 displays the intermodal transit service planned for the Redlands Rail Corridor. This service plan includes the Redlands Rail line and four feeder bus routes, Omnitrans service based on the Up to Design Scenario in the Short Range Transportation Plan, the sbX Bus Rapid Transit service in the E Street Corridor, and Metrolink service extended to the San Bernardino Transcenter.

Another part of this vision is to enhance the Redlands Passenger Rail alignment, where possible, with landscaping and trails improving the overall character of the area and providing additional linkages to the stations and proposed development. The rail right-of-way varies from 35 ft to over 120 ft allowing opportunities for trails in many portions of the corridor. Figures 2-4 and 2-5 show the trail and landscaping possibilities within the narrow portion of the right-of-way and a wider portion. Figure 2-6 shows estimated right-of-way at stations.

National, State and Regional Support for Transit Villages

The transit village vision is consistent with the strategies, policies and plans of local, state, regional and national governmental agencies and national development organizations. Among these are the Federal Transit Administration, the Southern California Association of Governments, the State of California, and the Urban Land Institute.

The Federal Transit Administration (FTA) has established the Livable Communities Initiative which works to make transit facilities more "user friendly". This, for example, means improving pedestrian flow into and out of transit stations and building transit-supportive uses such as child-care centers to make it easier for parents to drop off and pick up their children while going to and from work and TODs. The FTA gives priority for funding in its New Starts and Small Starts programs for transit projects with transit supportive land use policies and implementation measures. Local city governments can play a major role in its General Plan policies, zoning ordinances and other city documents by providing policies and incentives which promote TOD and funding of transit.

In addition, the Southern California Association of Governments (SCAG) Growth Vision is driven by four key principles: mobility, livability, prosperity, and sustainability. Compass 2% Blueprint Strategy is a guideline for how and where the growth vision can be implemented with modest changes to current land use and transportation on 2% of the lands. It proposes strategies such as encouraging transportation investment and land use decisions that are mutually supportive, transit-oriented development, infill development, a mix of uses, walkable communities and locating new housing near existing jobs. In 2002 the State of California prepared a Statewide Transit Oriented Development Study; Factors for Success in California and Policies that Promote Infill. The Urban Land Institute (ULI) has published a set of ten principles to direct successful development around transit. These include:

- Creating a flexible, realistic vision and focusing on implementation
- Forming public/ private partnerships to develop strategies and implement change
- Planning for development when planning transit stations
- Determining the optimum number of parking spaces to support transit and surrounding development
- Turning transit stations into a great place that attracts the community and businesses
- Getting the right mix of retail development
- Including a variety of mixed-use projects along a transit line
- Encourage assortment of price points
- Engage the corporate community in locational decisions

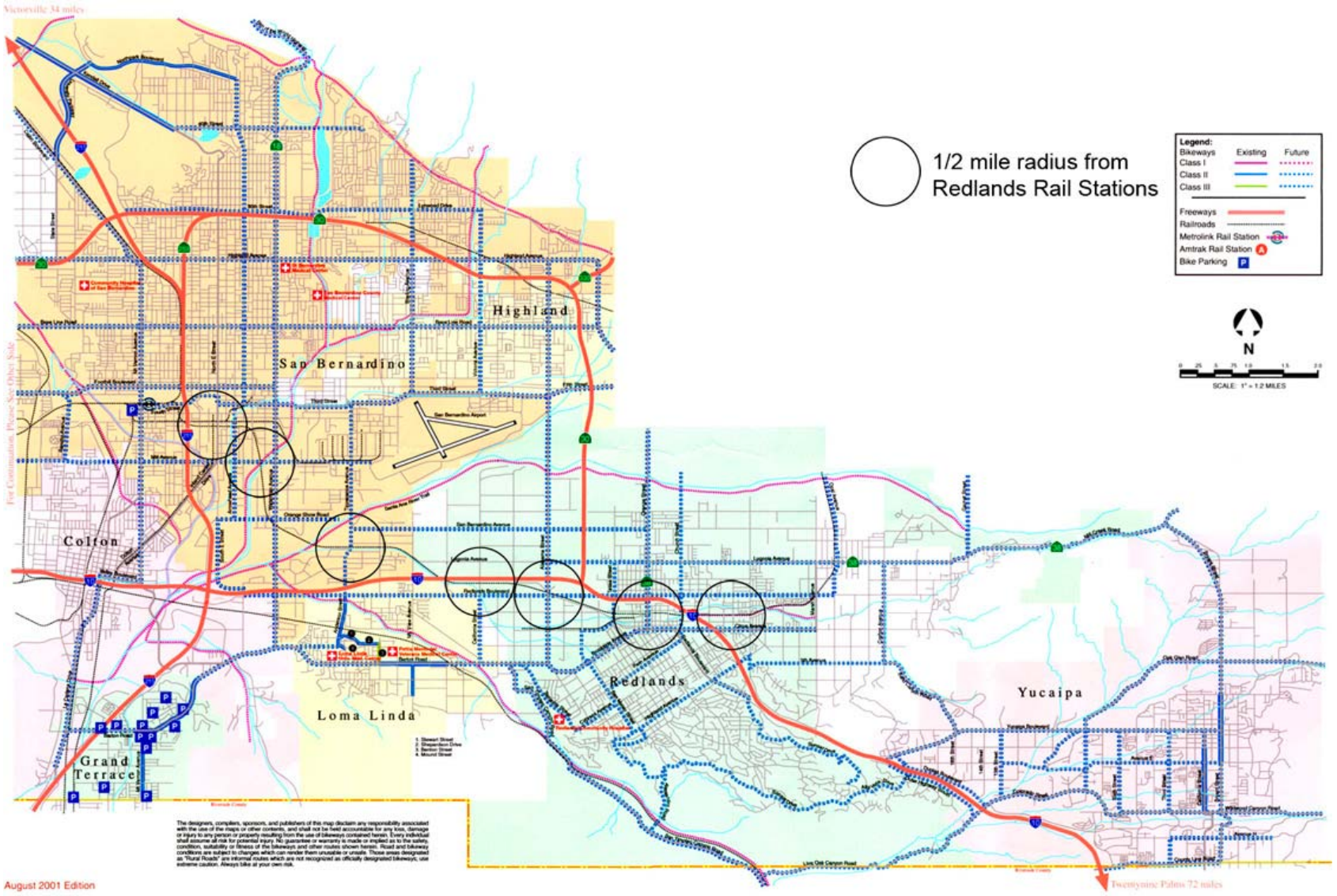


Figure 2-2: San Bernardino Countywide Bicycle Map

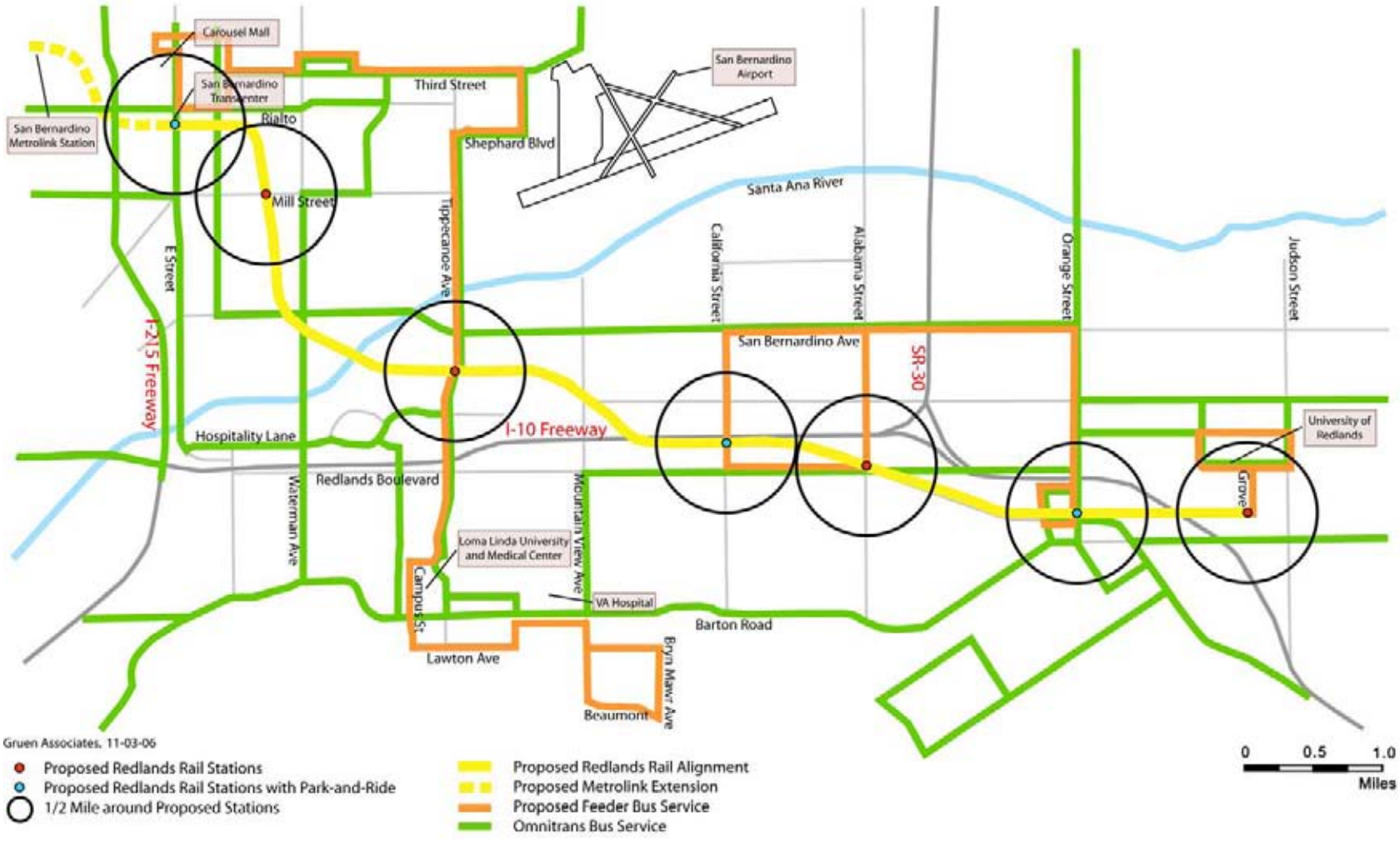


Figure 2-3: Transit Service in Redlands Rail Corridor

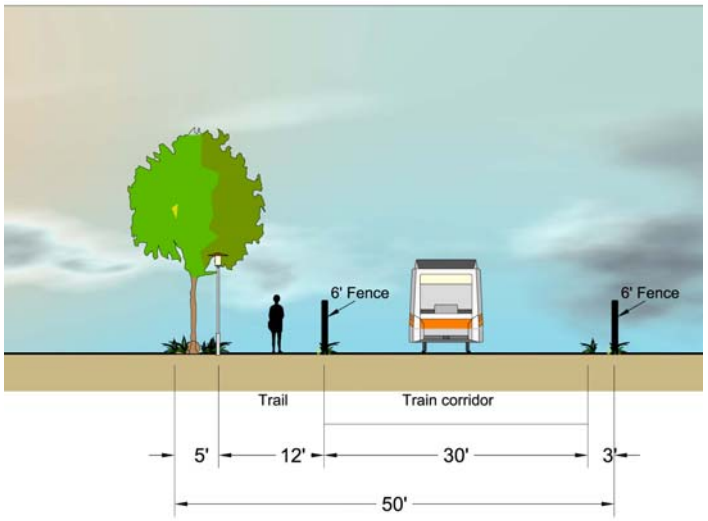


Figure 2-4: Opportunities for ROW in a Narrow Condition

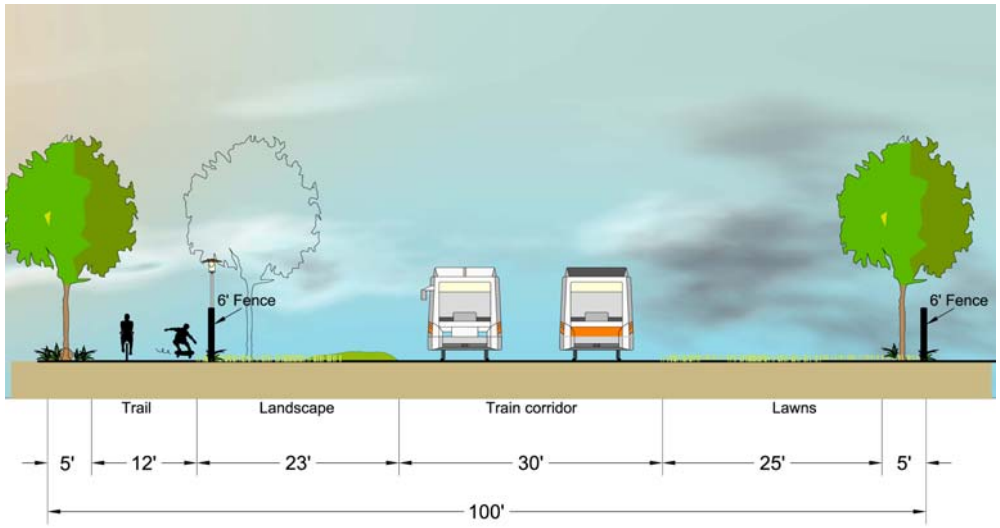


Figure 2-5: Potential Trail Opportunities for Areas with Maximum ROW

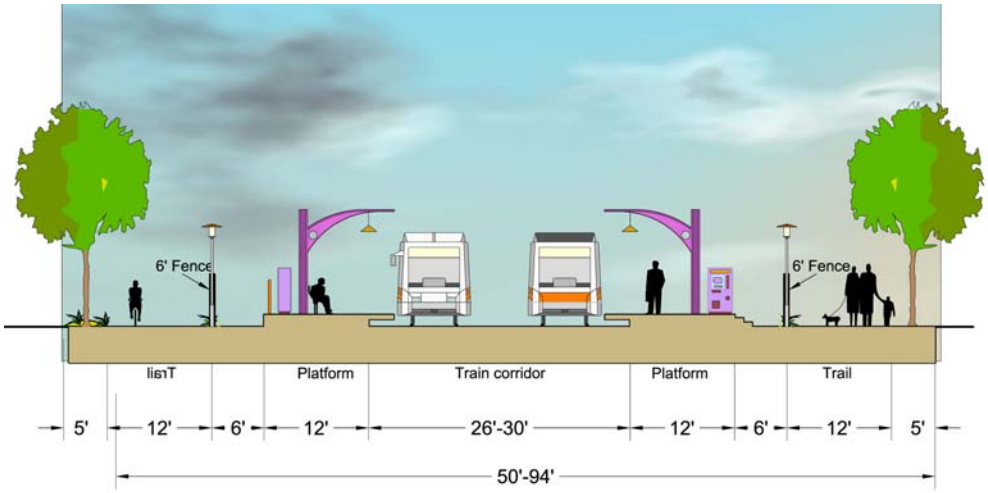


Figure 2-6: Estimated ROW Requirements at Stations

Definitions and Characteristics

Transit-Oriented Development (TOD) or Transit Village refers to a compact, mixed-use, pedestrian-oriented neighborhood surrounding a transit station. TODs often feature a variety of residential types combined with retail, employment centers, public areas and other services. TODs typically have a radius of one-quarter to one-half mile (which represents pedestrian walkable distances) with a rail or bus station as the center (Figure 2-1). The center is surrounded by a relatively high-intensity development with lower-intensity gradually spreading outwards. Accessibility and attractiveness of retail and residential space are enhanced in TODs by co-locating a mix of amenities and activities, including vertical differentiation of functions.

Typical Characteristics of a TOD within 1/4 mile to 1/2 mile of a station are:

- An attractive station with pedestrian amenities
- Mix of uses such as residential, retail, office, entertainment and recreational facilities allowing people to live, work, and play in the area
- Higher intensity/density development nearest to the station often with densities decreasing near the edges for compatibility with adjacent development
- Public and civic spaces near stations
- An interconnected network of streets
- Well-designed parking, parking management such as shared parking to reduce the land devoted to parking, and a reduction in parking requirements reflecting the proximity to transit
- Pedestrian connections such as continuous sidewalks and pedestrian paths to the station with pedestrian-friendly streets with features such as:
    - adequate sidewalk widths
    - street trees at the curb
    - parked cars at the curb to provide buffer between pedestrians and moving traffic
    - Pedestrian-oriented signage
    - Pedestrian scale lighting
    - Buildings and their entrances oriented toward the street with parking behind buildings or underground
    - Traffic calming in neighborhoods adjacent to the station
- A bicycle network and other non-motor vehicle modes connecting the transit station with other transit stops and the surrounding area
- Special attention to design of buildings to enhance the pedestrian environment.

Mixed-use development is the combination of two or more uses in one development. Generally, mixed-use means commercial development combined with multi-family residential. Mixed-use developments may be vertical, in which condominiums or apartments are above retail development or may be horizontal where residential is adjacent to commercial buildings. Other creative forms include live-work townhouses, and layered development with retail on the ground floor, office above, and condominium on the top.

Examples of Relevant TODs

A few examples of recent TODs in California include:

- **Mission Meridian Village, South Pasadena** - The Mission Street Station area on the Metro Gold Line in South Pasadena includes 67 condominiums, 5,000 sq ft of retail space, two levels of subterranean parking containing 280 parking spaces, and a bicycle store and storage facility adjacent to the light rail station (Source: Moule and Polyzoides Architects).
- **Holly Street Village, Pasadena** - The Holly Street Village in Pasadena was built in anticipation of the Memorial Park Metro Gold Line Station. The project includes 374 apartments in 7 buildings, 200,000 sq ft of offices and retail on the ground floor. The light rail station is located below ground level of the

main building of the project (Source Caltrans Transit-Oriented Development Database).

- **La Mesa Village Plaza, La Mesa** - The La Mesa Village Plaza is an early TOD example which was completed in 1991 on the San Diego Trolley service. It is a mixed-use development that combines offices, retail and 99 condominium units around a plaza. This station has one of the highest ridership among the San Diego stations.

- **Del Mar, Pasadena** - The Del Mar Station, currently under construction in Pasadena on the Metro Gold Line, is an intense mixed-use development based on the concept of historic transit plazas of Europe. The four to seven story buildings are organized around a 1 acre plaza and the train station and have 347 apartment units and 11,000 sq ft or retail use (Source: The New Transit Town, Best Practices in Transit-Oriented Development).

- **Fruitvale Transit Village, Oakland** - Fruitvale Transit Village is a mixed-use development adjacent to the Fruitvale Bay Area Rapid Transit (BART) District station in Oakland. It includes approximately 40,000 sq ft. of retail and restaurant space, approximately 114,000 sq ft of office space including a senior center, a health clinic and a library, and 47 units of mixed income housing. These uses are connected through a pedestrian plaza to the Fruitvale BART station. Phase I was completed in 2004 and Phase II is slated for completion in 2009 (Source: The Unity Council).

- **Colma BART Specific Plan, Daly City** - This Plan is organized around the Colma BART station which is located over a train maintenance yard. The Plan includes large scale retail and office uses with residential neighborhoods connecting to the existing residential uses of the city. The plan extends to over 3 jurisdictions and works with 2 transit agencies (Source: Calthorpe Associates).

- **Bay Meadows Specific Plan, San Mateo** - Located between Cal Train Commuter rail and the Bayshore Freeway is the Bay Meadows Specific Plan. The plans knits the fabric of San Mateo together with a framework of pedestrian scaled blocks with live/ work uses, commercial retail (300,000 sq ft), office employment (500,000 sq ft), residential uses (740 units) and community facilities in a setting of plazas and parks.

Bay Meadows Specific Plan (Source: Calthorpe Associates)

- **Wilshire-Vermont Station Mixed-Use Project, Los Angeles** – This project currently under construction at the Wilshire-Vermont Station of the Metro Red Line includes a central courtyard, approximately 400 rental units, 26,000 sq ft at ground-level retail, and 700 underground parking spaces. A new middle school and childcare center are also located on this block (Source: Los Angeles County Metropolitan Transportation Authority).

Downtown San Diego Mixed Use Development with its trolley station and adjacent transit supportive development.

Table 2-1 lists numerous examples of TODs and Mixed-Use Projects in the western United States. Many new examples are under construction or in planning now. Figures 2-7 and 2-8 illustrate the varying density/ intensity and architectural and pedestrian characters of TODs in other communities, which may be appropriate for Redlands Passenger Rail Station Areas. SCAG's compass blueprint website (www.compassblueprint.org/vision) illustrates other examples of TODs and TOD resources.

Table 2-1: Examples of Transit-Oriented Developments and Mixed-Use Areas in the Western United States

Project Name	Transit Service
Holly Street Village, Pasadena	Metro Gold Line
Mission Meridian Station, South Pasadena	Metro Gold Line
Del Mar Transit Station, Pasadena	Metro Gold Line – under construction
Avenue 26 / Transit Village, Los Angeles	Metro Gold Line – under construction
Plaza Colorado, Pasadena	Metro Gold Line nearby
Hollywood Highland, Hollywood	Metro Red Line
Hollywood and Western, Hollywood	Metro Red Line
Hollywood / Vine, Hollywood	Metro Red Line – under construction
Wilshire / Vermont, Los Angeles	Metro Red Line
Wilshire / Western, Los Angeles	Metro Red Line – under construction
NoHo Commons, North Hollywood	Metro Red Line – under construction
Sunset and Vine Mixed-Use, Hollywood	Metro Red Line
Johannes Van Tilberg Building Third Street Promenade, Santa Monica	Bus Transit
Janus Court Third Street Promenade, Santa Monica	Bus Transit
Ball Park Village, San Diego	San Diego Trolley – under construction
La Mesa Village Plaza, La Mesa	San Diego Trolley
Grossmont Trolley Station	San Diego Trolley – under construction
Oreno Station, Hillsboro, Oregon	Light Rail
Mission Bay, San Francisco	New light rail opening in 2006
Museum Place, Portland, Oregon	Portland Streetcar
Mocking Bird Station, Dallas, Texas	3 blocks from MAX rail station
Pleasant Hill, San Francisco Bay Area	Bay Area Rapid Transit (BART)
The Crossings, Mountain View, CA	CalTrain Commuter rail
Market Square, Denver, Colorado	16th Street Transit Mall
Cherokee- Gates, Denver	Rail – under construction
Ohlone Chynoweth Commons, San Jose	Santa Clara Valley Transportation Authority (VTA)
Fruitvale Transit Village, Oakland	Bay Area Rapid Transit
Pearl District, Portland, Oregon	Light Rail (Streetcar)
Downtown Brea, CA	Bus
Downtown Santa Ana, CA	Metrolink
Downtown Fullerton, CA	Metrolink
Downtown Claremont, CA	Metrolink
Downtown Long Beach, CA	Metro Blue Line
Downtown Portland, OR	Light rail
Downtown San Diego, CA	San Diego Trolley

Source: Gruen Associates

Densities and Intensities of TODs

The New Transit Town: Best Practices in Transit-Oriented Development (Dittmar, Hank and Gloria Ohland et al. 2004. *The New Transit Town: Best Practices in Transit-Oriented Development*. Washington, D.C.: Island Press) describes the best practices in transit-oriented developments. This source states that there are no absolute densities for a TOD and some of the case studies presented have densities from 10 to 100 units/acre. However, TOD's consistently exceed densities elsewhere in the community and cities often establish minimum densities instead of a maximum. For consideration later in establishing densities for TOD's, the maximum densities currently allowed in each city along the Redlands Passenger Rail is as follows: San Bernardino – 54 units/acre, Loma Linda – 20 units/acre and Redlands – 27 units/acre.

Table 2-2: Housing Types and Achievable Densities lists housing types and estimated achievable residential densities. This also will aid in determining what form densities could take in each city.

Fruitvale Village, Oakland has a strong pedestrian connection to the BART station

Holly Street Village, Pasadena varies building height for compatibility with existing uses

Del Mar Station Village, Pasadena (under construction) is a relatively dense mixed-use development which is highly articulated in massing.

Mission Meridian Village, South Pasadena includes loft housing over retail and restaurant as well as three-story craftsmen residential units compatible with the surrounding area.

Santa Clarita mixed use development includes retail, restaurants, offices and residential in a horizontal pattern.

Janus Court, Santa Monica includes retail, restaurant, offices, movie theater, and residential in a vertical configuration along the Third Street Promenade.

Figure 2-7: Examples of Transit-Oriented Developments and Mixed-Use Projects

Following are some additional examples of Transit-Oriented Developments and mixed use from Western United States:

Downtown Long Beach, California has several recent examples of mixed-use development and pedestrian friendly sidewalk improvements.

Lake Oswego, Oregon includes office and retail surrounding an above-ground parking structure with pedestrian-oriented friendly environment along the streets.

San Francisco Mission District includes residential and retail uses.

Brea, California is a mixed-use entertainment, retail development with residential over retail and with small lot single-family adjacent.

Pearl District, Portland, Oregon includes relatively dense residential with retail and large open space areas.

Paseo Colorado, Pasadena includes regional and neighborhood retail with residential uses.

Figure 2-8: Examples of Transit-Oriented Developments and Mixed-Use Projects

Table 2-2: Housing Types and Achievable Densities	
Housing Type	**Achievable Densities**
2-story Townhouse	10 – 17 units/acre
3-story Mixed Use	17 – 50 units/acre
4-story Mixed Use	40 – 60 units/acre
5-story Mixed Use w/Most Parking Below Grade	60 – 100 units/acre

As some of the Redlands Passenger Rail Corridors transverse industrial areas, not all TODs will likely contain a major residential component. In these station areas, intensive employment density will be critical to placing jobs close to the station. The City of San Bernardino in its General Plan includes square feet per employee factors for various types of land uses including:

- General Commercial: 300-500 square feet/employee
- Office / Industrial Park : 600 square feet/employee
- Light Industrial: 1,030 square feet/employee
- Heavy Industrial: 1,500 square feet/employee

To place more people and jobs close to transit, TODs should target the more employment intensive land uses such as offices and general commercial. Many offices today are designed for 200 square feet/employee.

Reductions in Parking Requirements with Transit

Reductions in parking requirements with transit are an important and critical ingredient of a transit-oriented development. Parking requirements for land uses in a city are established without consideration of a mature transit system. With a mature transit system that has considerable connectivity, and with new development in walking distance or bicycle distance to a station, a household may only need one car or no cars. Mechanisms that incorporate into city plans for reductions in parking requirements once a transit system is constructed are an important incentive to transit-oriented development. One way to do this would be to allow a project which is being constructed before the transit system is built to build more development on the site without additional parking when the transit system is constructed.

Even though a transit system is not yet built, some parking reductions should be considered due to the mix of uses and ability to share parking between uses depending on the overlap of services. The park-and-ride facilities planned at San Bernardino Transcenter, California Street station and downtown Redlands station provides flexibility for sharing parking with development.

Today in designing mixed-use and transit projects, parking contributes substantially to the cost of a project as structured parking is often necessary to achieve compact development at reasonable densities and to accommodate parking requirements. A March 2006 Exposition Line Infill Development Potential Analysis by Solimar found that parking reductions play a more important role in making a project economically feasible than density bonuses. According to **Statewide Transit-Oriented Development Study, Special Report Parking and TOD: Challenges and Opportunities** prepared in February 2002, for the California Department of Transportation, TOD can potentially reduce parking per household by approximately 20% compared to new transit-oriented land uses. It also states that "a wide range of parking reductions (from 12% to 60%) has been found for commercial parking in TODs." However, this document also states that there is no clear conclusion and parking reductions should be considered on a case by case basis.

Market for Housing near TODs

An April 2005 report by Reconnecting America's Center for Transit-Oriented Development called **Hidden in Plain Sight,**

Capturing Demand for Housing near Transit, discusses characteristics of those living within ½ mile of a transit station in 27 metropolitan areas including:

- Household sizes are smaller than the metro region as a whole
- Household age is similar in age of the metro region as a whole although there are fewer children
- Incomes of transit zone residents are similar
- Home ownerships rates are lower in transit zones
- Car ownership rates are significantly lower in transit zones (.9 cars/unit average versus 1.6 cars/unit in metro areas for all households in all transit zones studied)
- Significantly fewer residents commute by car in transit zones

This report also discusses the demand for housing in transit zones in the future which includes:

- The Los Angeles Metropolitan region has the potential to generate the most demand in housing.
- Potential demand for TODs is higher in regions with small but expanding transit systems.
- Singles and couples without housing will generate the majority of potential demand for TOD due to both an increase of these households and greater preference for this type of housing.
- Households headed by individuals 65 and older will be primarily represented among potential TOD residents.

The report's market assessment forecasts that over the next 25 years, a quarter of all new households could be looking for housing in transit zones ½ mile from a station. There is a potential to more than double the number of people in transit zones by 2025. The report concludes, "whether the market is able to deliver housing projects depends on whether appropriate public policies such as higher density zoning and reduced parking regulations, are put in place and whether the right infrastructure investments are made, including continued improvements to transit systems and "placemaking" elements such as plazas and streetscape improvements."

Benefits of TODs to Local Communities

Table 2-3 illustrates TOD principles and potential benefits of TODs.

2.2 GENERAL POLICIES AND TOD GUIDELINES FOR ALL STATION AREAS

In order to achieve livable attractive, walkable and economically viable TODs, each City must adopt general policies that apply to all TODs as well as the following guidelines to assist in implementation.

The general policies recommended for all TODs are primarily based on the principles and characteristics for TODs outlined earlier and the local areas. They include:

- Within ½ mile of each station area, provide a mix of uses and compact development
- Create a pedestrian-friendly or walkable environment with pedestrian amenities throughout the station area and with clearly defined pathways and trails leading to the station
- Provide bike path connections from neighboring communities leading to the station with facilities for bike racks and lockers at the station
- The amount and location of parking provided and access shall reflect the availability of multi-modal transportation in the station area.

Table 2-3: TOD Principles and Benefits

TOD Principles	Benefits
▪ TODs occupy land within ¼ mile to ½ mile radius around a rail or bus station, or within 125 to 500 acres. ▪ Typically, TOD areas are composed of three elements: o station area with platforms, and transit and passenger amenities, o core area within a five-minute walk of the station or about a 1/4 mile of the station, and the most intense employment, residential, and retail uses as well as convenience commercial for passengers, and o a neighboring ring within a ten-minute walk of station or about 1/4 to 1/2 mile of the station containing residential, commercial and other uses. ▪ A TOD must be a walkable, pedestrian-oriented area with amenities such as street trees, benches, crosswalks, decorative paving, and public art. Direct connections between different land uses should be provided. ▪ TODs have connectivity to the regional transit system and bicycle/trail and shuttle links to the area outside the ½-mile area ▪ Plans, policies and zoning provisions relating to mix of uses and building setbacks, and providing incentives such as density bonuses, floor area ratio increases, reduction of parking requirements, etc. play a significant role in facilitating a TOD.	▪ Environmental o Improved air quality and energy consumption: Decreased auto trips lead to lower emissions which results in improved air quality. o Increased transit ridership and decreased congestion: By decreasing driving, TODs result in reduced congestion. o Conservation of land and open space: TODs are compact developments, and therefore, consume less land than lower-intensity, auto-oriented development ▪ Economic o Catalyst for economic development: TODs can act as a catalyst for nearby properties to invest in their development as well. o Redevelopment: TODs can be used to redevelop vacant or underutilized properties and declining urban neighborhoods. o Increased property value: TODs can be used to revitalize the area within ¼ mile of the station. o Decrease infrastructure costs: TODs help in the reduction of infrastructure costs due to compact and infill development. o Revenue for transit systems: Increased ridership leads to additional revenues for transit systems. o Reduced household spending: By reducing gasoline costs, TODs contribute to a reduction in household spending on transportation. ▪ Social o Increased housing and employment choices: TODs provide a diversity of housing and employment types within close proximity to the transit station. o Greater mobility choices: By creating activity nodes linked by transit, TODs increase mobility options in congested areas. Young people, the elderly, those without cars and those not wanting to drive also have mobility. o Health benefits: By providing more opportunities for walking and bicycling, TODs offer health benefits. o Enhanced sense of community: By bringing more people and businesses closer, and creating an activity hub, TODs enhance the sense of community. o Enhanced public safety. By creating more active places used throughout the day and night providing “eyes on the street”, TODs help increase safety. o Quality of life – by reducing the driving time for long automobile commutes, people can recapture this wasted time or other activities.

Sources: Statewide Transit-Oriented Development Study; Gruen Associates.

- Each station area shall be planned to reflect the unique specific geographic locations, its special features, and surrounding existing and planned land use.
- As TODs are more compact, high-quality urban design and architectural design shall be major consideration.
- Recognizing that San Bernardino and some portions of other jurisdictions have a high percentage of rental housing, encourage owner-occupied housing with density increases.
- Implementation techniques, planning concepts and planned development standards shall be flexible and realistic to allow increases in density and intensities reflecting changing market conditions and increases in transit usages over time.
- Recognizing the importance of the land use and transportation connection to the San Bernardino Valley, each city will support the conceptual policies and guidelines herein, will implement policies and guidelines herein, will work to attract public/private investments which are transit-supportive in the station areas and will assist SANBAG in seeking local matched funding for the Redlands Rail Project.

General TOD guidelines apply to all station areas and are flexible depending on the uses in a specific area and unique conditions. Many of the guidelines may already be a part of each city's general plan and zoning. The general TOD guidelines aim to ensure development which is aesthetically pleasing, attentive to detail, and human-scale. The TOD guidelines are organized by key characteristics of a TOD:

- A Mixture of Land Uses and Compact Development
- A Pedestrian-Friendly Environment and Facilities
- Innovative, Well-designed Parking and Access Solutions
- Unique Solutions for Each Station Area
- Design Character

A Mixture of Land Uses and Compact Development

- **Mix of Uses:** A mixture of land uses, appropriate for a TOD and supporting facilities, should be provided in each station area to foster walking within the development to the transit stations and to the surrounding land uses. Examples of appropriate uses include residential, retail, restaurant, offices, entertainment uses, hotel, public facilities, child care, open spaces and other high employment-generating uses.
- **Transit Supportive Uses**: Transit supportive land uses that generate pedestrian activity and transit ridership should be provided in each station area. These include uses such as movie theaters, restaurants and outdoor cafes, bookstores, newsstands, childcare, and other retail and institutional uses that cater to the needs of residents, employees and transit stop users.

A mixed-use building in San Francisco with a restaurant on the ground floor and residential above

- **Density and Intensity:** To generate transit ridership and reduce automobile dependency, the highest residential densities and floor area ratios permitted in the city should be allowed within ½ mile of a transit station. In a downtown area this may mean a multistory building. In a more suburban location this may mean small lot single-family homes or townhomes near the stations and

large lot single-family homes further from the station outside the 1/2-mile area.

- **Compact Development:** Compact development places more people in walking distance of the transit station. To encourage property owners and developers to provide compact development, incentives such as increased density and floor area ratios, reduced parking, and redevelopment assistance should be provided.

A Pedestrian-friendly Environment and Facilities

- **Continuous pedestrian and bicycle network leading to the rail station:** A major component of any TOD is the creation of connections and linkages from the neighborhood to the transit station. A continuous, attractive landscaped pedestrian network should be provided linking a mix of land uses to the transit station. Street furniture or landscaping should not prevent easy pedestrian movement. A bicycle network consisting of bike paths or designated bike lanes should also be included.

- **Adequate sidewalk width:** Adequate sidewalk width (at least two couples should be able to cross each other without touching) should be provided to accommodate pedestrians in street rights-of-way or in required setback areas adjacent to the right-of-way. Devices such as curb "bump outs" and sidewalk easements on private property are methods to provide adequate sidewalk width. Sidewalks 12 feet to 15 feet are wide enough for street trees at the curb and pedestrian amenities.

Wide sidewalks provide ample space for pedestrians in this downtown Long Beach mixed-use neighborhood.

- **Streetscape improvements:** Streetscape enhancements should be included along each of the streets in a TOD to make the area more walkable. These enhancements include landscaping of sidewalk areas, special paving, street furniture, gateway improvements, landscaped medians, water features, and other amenities.

- **Buffer sidewalks from moving traffic:** Pedestrian pathways and sidewalks should be buffered from moving traffic by providing street trees along the curbside or a row of parked cars on the street.

- **Amenities:** Pedestrian amenities appropriate to ridership at the station such as sufficient lighting, street furniture, textured crosswalks with signalization, pedestrian signage, and seating along sidewalks should be provided.

Streetscape enhancements such as landscaping of sidewalk areas, landscaped medians and other amenities make an area more walkable.

Bus shelter in Santa Monica with amenities such as sufficient lighting and seating along the sidewalk

- **Pedestrian-oriented uses on ground level:** Pedestrian-oriented uses should be located at the ground level of buildings fronting the sidewalks, where feasible.

- **Wayfinding:** TODs should provide wayfinding signage, visual cues, and public art

to communicate the activities in the TOD and the linkages to transit and these activities.

- **Safety:** Pedestrian pathways, amenities, and linkages should be well-maintained and well lighted for pedestrian to feel safe.

- **Maintenance consideration:** Pedestrian amenities, street furniture, signage, street lights, and other urban design elements should be designed to minimize maintenance.

Innovative, Well-Designed Parking and Access

- **Amount of parking:** As transit is available within walking distance of uses within a TOD, the amount of parking required for development should be less than for other areas of the city.

- **Location of parking:** To emphasize the pedestrian realm, on-site parking is discouraged adjacent to the sidewalk along major streets but instead should be located underground or at the rear of the parcels with convenient pedestrian access to non-residential and residential uses.

- **Screening of Parking:** Existing or new parking spaces in lots which face a street should be screened from view from the street by a hedge or a low masonry wall and vines. Parking garages should be designed with generous landscaping and canopy trees surrounding them.

Public parking should be located at the rear of the parcels with convenient pedestrian access.

- **Parking access:** When available, access to parking should be from side streets and from alleys. To minimize traffic congestion and breaks in the pedestrian realm, multiple parking access points along major streets are discouraged. Shaded (trees, pergolas, canopies, etc.) pedestrian paths should be provided through parking lots to minimize pedestrian movement on roads and in between cars.

- **Parking garage design:** The design of parking structures should be compatible with the design of the main building.

- **Parking structures located away from street frontage:** Above ground parking structures should not front on major streets unless there is no feasible alternative. If parking structures are located on a major street, the ground floor should be devoted to pedestrian-friendly retail, service and restaurant uses with visual interest.

Parking structures on major streets should have pedestrian-friendly uses on the ground floor.

- **Interconnected parking:** Where possible, link the new parking with that of adjacent development to facilitate vehicular and pedestrian movements, especially when streets are congested.

- **Shared use of parking:** Shared parking with a management plan should be included in a new TOD to minimize traffic congestion and parking demand. Shared use of development parking with transit park and ride is encouraged.

- **Drop-off and valet:** Spaces for drop-off, kiss and ride, and valet parking should be provided in major projects, and where appropriate.

- **Avoid visible sloping floors:** An above-grade parking structure should not have sloping floors visible from adjacent streets.

- **Street Layouts:** To provide dispersed access to transit from TOD uses, a grid network of local through streets with sidewalks is preferred over a system of super blocks and cul-de-sacs.

- **Traffic Calming:** To channel traffic to the arterial streets and minimize impacts on the community, traffic calming techniques such as curb extensions, chokers, speed bumps, and raised crosswalks should be used.

A curb extension is a traffic calming technique used to slow the speed of traffic.

- **Street width:** A reduction in the lane widths of streets should be considered to slow traffic and make wider pedestrian linkages.

- **Safety devices:** TODs may include devices such as "Z" crossings of major streets, beeping crosswalk signals, countdown timers, and embedded flashing devices in crosswalks at non-signalized intersections to make the area safer for and more attractive to pedestrians.

- **Bicycle and Trail Connections:** The County of San Bernardino has plans for bicycle routes along major arterials and trails along the Santa Ana River and flood control channels. Where possible, link these routes to the rail stations and create additional bicycle and trail connections within station areas.

Unique Solutions for Each Station Area

- **Tailor plans to unique areas:** In planning each station area, vary land uses, densities, intensities and design character depending on the specific geographic locations and its special features.

- **Station area policies**: Refer to Chapter 6 through12 for individual policies that are recommended for each station area.

Design Character

- **Architectural Character and Massing**

  - **Contextual design:** As the rail station areas belong to three cities distinct in scale, character and development opportunities, the design approach should be sensitive to the surroundings and blend into the city fabric.

  - **Human factor design:** Architecture and urban design should be designed with human scale in mind and respond to how humans behave in a public space. Being in a transit village should be functional for commuters who wish to move quickly from the station to their destination and exciting and fun for shoppers and leisure visitors to improve the overall quality of life of the village.

A mixed use project with a restaurant and corner plaza provides a human-scale pedestrian-friendly environment.

  - **Articulated building facades:** To avoid large bulky façades and blank walls, and to create visual interest, buildings should be articulated in form using techniques such as some stepping back of upper floors, stepped terraces, changes in plane, recessed windows, bay windows, balconies, trellises, which create shadow lines, varied roof lines and changes in color.

  - **Visual interest at street level:** The form of buildings and architectural details should be designed to create visual interest at the street level using techniques such as staggering the frontage of the building, recessing doors and windows, providing varied display windows, providing awnings and canopies for weather protection and shade, and visually extending interior spaces outside through paving and glazing. In addition, transparent clear glass rather than dark

tinted glass or reflective glass should be incorporated along ground level frontages.

Clear glass display windows, awnings, and architectural articulation provide visual interest at street level.

- **Equal design treatment on facades:** Buildings should be designed to be attractive in all directions. Where the rear or sides of the building are visible from streets and alleys these facades should receive equal design treatment to the main façade.

- **Emphasize each street as an urban space:** Building placement and design should consider its relationship to the street:

  - ✧ Tenants on the ground level and outdoor activities should be selected to activate the street.

  - ✧ Large structures could be designed to appear to be a series of smaller buildings through building articulation, color and materials

- **Variety in building facades:** Building plans and facades should vary from building to building and from project to project to create interest along the street.

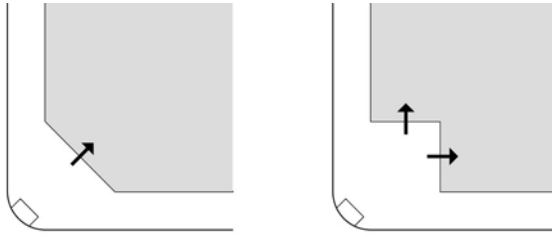
- **Materials and colors:** Materials and colors should be selected to unify the building appearance and fit into the pedestrian realm context. Avoid chain link fences, imitation rock/stone veneer, extensive use of wood siding, heavily textured stucco walls, adobe, or slump stone masonry.

- **Contemporary, pedestrian-friendly design:** Buildings should be designed to be visually attractive and fit with the vision of a pedestrian-friendly, vibrant streetscape. Contemporary glass storefronts with a more historic character are encouraged depending on the unique character envisioned by each community.

- **Awnings:** Awnings are encouraged for sun protection for a distinctive identity and for visual interest along the pedestrian center. Awnings should be mounted so as to respect the architecture and character of a building and its function. Awnings should project over doors and windows and not blank walls. Open ended awnings are preferred over closed in awnings. Creative steel, canvas, and glass awnings with signage incorporated are encouraged.

Awnings project a distinctive identity and visual interest for pedestrians.

- **Building shaped at corners:** A building should reflect the corner of an important intersection or a focal point by using a variety of techniques such as strong vertical mass or a tower at the corner, a diagonal setback at the intersection, a corner plaza at the intersection, and/or a recessed building entrance at the corner.



In areas where there is heavy pedestrian crossings shape buildings to form corner plazas


A diagonal corner at a busy intersection provides an attractive waiting space for pedestrians.

- **Lighting:** Lighting is encouraged to accent facades at night and provide security and wayfinding for public and private open spaces. Avoid lighting that interferes with residential uses.

- **Energy efficient designs:** Buildings design and site planning shall consider passive solar and ventilation techniques, as well as specification of "green" materials.

- **Outdoor Open Space Network**

  - **A network of open spaces:** In addition to the pedestrian network along sidewalks, well-proportioned outdoor open spaces such as landscaped sidewalks, paseos, plazas, terraces, courtyards, gardens, and decks should be incorporated into TODs and connected together, where possible, forming an open space network on a site.

  - **Location and character of common open spaces:** Common recreational areas should be centrally located and preferably be designed as courtyards, plazas and outdoor rooms. The location and character of an outdoor space should consider its function, the size of the project, and the surrounding environment.

    - Plazas are for public gathering and social interaction and should be designed with visibility from the sidewalk, to address the solar orientation, and to include pedestrian amenities such ample eating places, plants, trees, fountains, sculptures and other public art. Small plazas are appropriate at corners and adjacent to transit stops to provide additional space for waiting near the intersection. Plazas should be designed at or near the grade of the sidewalks and designed not to interrupt the street wall. Outdoor dining and other uses that activate the space should be located adjacent to or be a part of a plaza.

    - Courtyards should be well defined by buildings and/or landscape elements and provide quiet areas for residents of a project as well as active recreational uses such as places for children's playgrounds, pools, spas, and fountains. Courtyards are typical of traditional Southern California architecture and provide opportunities for residential windows to face internal attractive spaces away from the busy traffic on the streets and provide opportunities for pedestrian amenities and public art.

    - Gardens, patios, terraces, and decks are opportunities for smaller open space areas. These should be landscaped and appropriately planted to provide outdoor spaces for individual use.


Public gathering space with landscaping

  - **Pedestrian connections through buildings to the pedestrian realm:** To connect the sidewalk to parking in the rear, pedestrian connections adjacent to a building are encouraged, especially at or near mid block.


Pedestrian connections through buildings to the pedestrian realm are encouraged.

- **Human-scale walkway design:** Textured human-scaled paving materials and generous landscaping should be provided on pedestrian walkways through and adjacent to new projects which are complimentary or of the same design as the treatment of the pedestrian realm.

- **Special features:** To encourage social interactions, activate a public space and provide a unique identity for an area with special features such as public art and water elements are encouraged. Water could introduce a sense of relaxation and mask traffic noise.

- **Lighting:** Lighting should be used to guide pedestrians through the open space, to eliminate dead areas, and to accent special features without interfering with the adjacent residential uses.


Special features such as water elements activate a public space.

- **Building Entries and Service Access**

  - **Entries oriented to street frontage:** To promote active pedestrian-friendly streets each individual tenant or business establishment and residential lobbies should be oriented to and be accessible from the major street frontage and directly from the public sidewalk.

  - **Entries emphasized:** Sidewalk pedestrian entries to shops and residential lobbies should be prominently highlighted with a two story height, unique awnings, overhangs, trellises or other distinctive features. Shop and major building entries may be recessed to create a gracious entry provided that the continuity of the street wall along the street frontage is maintained.

  - **Service areas concealed:** Where possible, service areas should be located at the rear of the building unless these areas can be concealed within the interior of the building design. Loading docks, service and storage areas should be screened from public streets and neighborhoods.

- **Compatibility with Surrounding Development and Between Uses on the Site**

  - **Privacy between land uses:** The design should address privacy between residential units and other non-residential uses on the site and on adjacent properties.

  - **Private development to complement the public realm:** The design of the structures and landscaping should complement the street pedestrian realm with plazas, pocket parks, public gathering spaces and street furniture.

  - **Public spaces distinguished from private spaces:** The design should provide visual and physical cues that demark the public space from the private space.

  - **Passageways for light and air:** To integrate new buildings with the surrounding area they are encouraged to provide passageways that allow for light and air to adjacent buildings and that connect to the pedestrian realm.

Passageways provide opportunities for light and air.

- **Noise mitigation adjacent to arterials:** Noise insulation techniques such as double pane or laminated glass should be used in residential units adjacent to heavily traveled corridors.

- **Access**

  - **Access from side streets and alleys:** Vehicular access should be provided from the side streets, adjacent alleys, and parallel streets, and traffic calming techniques should be provided to minimize intrusion of traffic into adjacent neighborhoods.

  - **Pedestrian amenities at street crossings:** Pedestrian crossings at arterials should include items such as curb extensions at intersections, decorative crosswalk paving, shortened turning radii for cars, complementary plant materials and pedestrian lighting, public art and bus shelters.


Curb extension and crosswalk paving at street crossings add to a pedestrian-friendly environment.

- **Signage**

  - **Clear distinctive signage:** Signage should be distinctive and clear and uniformly and consistently applied. Signage may operate at least three scales: identification of individual stores, restaurants, entertainment centers and offices; identification of a "project" or group of such businesses and identification of residential units.

Project signage should be distinctive and clear.

- **Station and Public Realm**

The above design character guidelines are primarily directed at the private realm or development on private properties. Equally important is to design the public realm including the station areas directional signage, the streets, streetscape, and the pedestrian pathways within the public right-of-way. Stations should be designed to brand the transit system, provide "a sense of place," provide protection from the sun, rain, and wind, accessibility for disabled, a sense of security, ease of maintenance, and rapid boarding.


Stations should be designed to provide "a sense of place" and provide protection from the sun, rain, and wind.

This page intentionally left blank.

3

OVERVIEW OF THE CORRIDOR AND STATION LOCATIONS

At the onset of the Redlands Passenger Rail Station Area Plans, a draft memorandum summarizing existing conditions, issues, constraints, opportunities and evaluations of station locations was prepared and discussed with the Task Force. Information in this memorandum is included and is further supplemented and updated by interviews with stakeholders and additional technical information. This chapter provides an overview of the corridor in terms of existing and planned land uses and emphasizes opportunities and constraints leading to the evaluation of station locations. Chapters 7-12 provide additional existing conditions information relative to each individual station.

3.1 REDLANDS PASSENGER RAIL

The 2003 Redlands Rail Feasibility Study assessed the feasibility of establishing passenger retail services between the historic Santa Fe Metrolink Station in San Bernardino to the University of Redlands in Redlands on an existing railroad right-of-way (ROW) owned by SANBAG. The Feasibility Study explored alternatives including expanded roadways, expanded bus service, a Metrolink extension on the railroad right-of-way, BRT on the ROW, and fixed rail on the ROW. The Feasibility Study found the fixed rail with a 15-minute headway was the most cost effective. The technology for the fixed rail currently considered is a new self-propelled vehicle called a diesel multiple unit (DMU). The fixed rail in the ROW would be a combination of double and single tracks. Table 3-1 illustrates the approximate ROW width along the alignment. In addition to a stop at the Santa Fe Depot, the 2003 Feasibility Study proposes the following six stations: San Bernardino Transcenter, Mill Street, Tippecanoe Avenue, California Street, Orange Street and University of Redlands. The Draft Redlands Downtown Master Plan shows three alternative station locations in downtown: Orange Street, Oriental/Eureka Avenue and Stuart Avenue/7th Street. Also, three other possible station locations were under consideration at the start of this project. These include Waterman Avenue, Mountain View Avenue and Alabama Street.

Figure 1-1 in Chapter 1 illustrates the ½ mile station area around each proposed station under consideration along the 9.1 mile Redlands Rail Passenger alignment. The San Bernardino Transcenter, Mill Street, Waterman Avenue, and Tippecanoe Avenue station areas are all entirely within the City of San Bernardino. The Alabama Street station area, all three alternatives for downtown Redlands station areas, and the University Street station areas are entirely within the City of Redlands. Portions of the Mountain View station area are within the three cities. The California Street station area is within Loma Linda, Redlands, and a small portion is in the County of San Bernardino unincorporated area.

Table 3-1: Approximate Existing Right-of-Way Widths

Station	Width (ft)
San Bernardino Transcenter Station	100-120
E Street to Mill	50
Mill Station	75
Mill to Tippecanoe	50 -100
Tippecanoe Station	50 – 100
Tippecanoe to Past Mt. View	100
Vicinity of I-10 Freeway	40-50
I-10 Freeway south to Alabama	40-50
California Station	50
California to Alabama	50
Alabama Station	50
Alabama to downtown	50-100
Downtown Station area	35-50 except 120 at Stuart near 7th
Stuart Alternative Station to University	50-100
University of Redlands	100

3.2 EXISTING AND PLANNED LAND USES AND ECONOMIC DEVELOPMENT POTENTIAL

Land Use and Other Existing Conditions

Figure 3-1 prepared by SANBAG shows vacant land in the vicinity of each station area. For the original six stations shown in the 2003 Feasibility Study there are approximately 400 acres of vacant land with opportunities for new development along the corridor. Waterman Avenue, Mountain View Avenue and Alabama Street stations provide additional development opportunities on approximately 350 acres of vacant land.

Field visits along the entire rail alignment were undertaken. Station locations and their surrounding areas were observed to take note of site specific conditions, architectural character of the area, street sections, quality of landscaping and types of buildings and neighborhoods. Vacant sites along the alignment and primary streets were identified with possibility of locating the station platforms. This exercise has helped in establishing a context that would lead to identification of issues, constraints and opportunities associated with each station area for undertaking a feasible TOD. The following graphics (Figures 3-2 and 3-3) summarize some of the findings. More detailed analysis of each station area is found in Chapters 7 through 12 of this report.

General Plan maps for each city illustrate the cities' planned land uses in each of the station areas.

- Figure 3-4 is the City of San Bernardino General Plan map adopted In November 2005.
- Figure 3-5 is the City of Loma Linda's Draft General Plan that was adopted in June 2006.
- Figure 3-6 is the City of Redlands' General Plan map. The City of Redlands also has several specific plans and a Draft Downtown Plan (Figure 3-7) that affect station areas. The process of updating the Redlands General Plan has begun and is anticipated to take several years.

Pharaoh's Lost Kingdom, recreational use in California Street station area

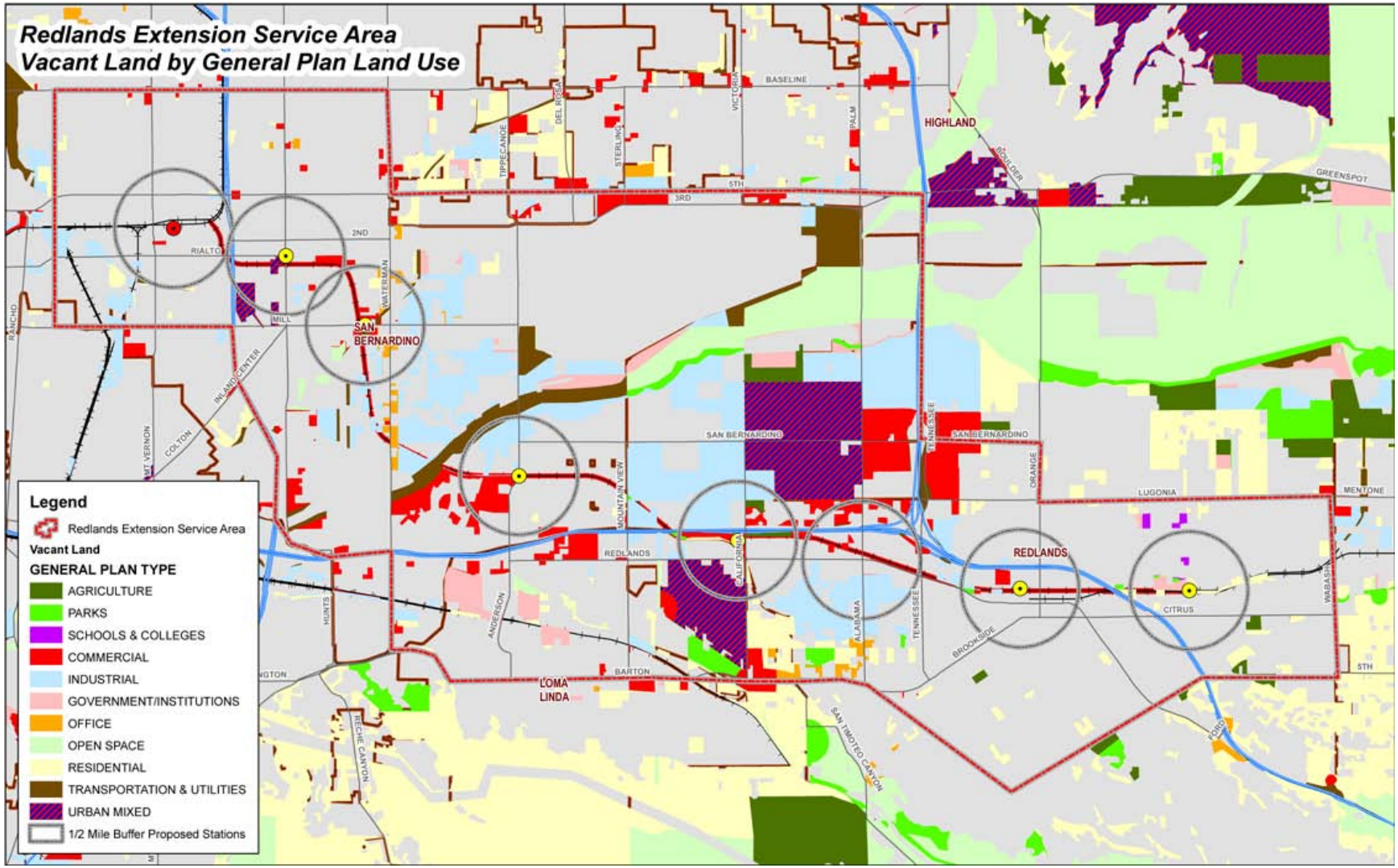
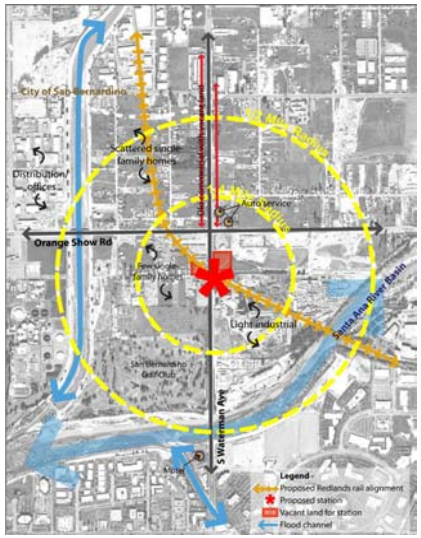


Figure 3-1: Redlands Passenger Rail Service Area Vacant Land Use by General Plan

San Bernardino Transcenter Station Area

Mill Street Station Area



Waterman Avenue Station Area

Tippecanoe Avenue Station Area

Mountain View Avenue Station Area

California Street Station Area

Figure 3-2: Existing Conditions in the Station Areas

Alabama Street Station Area

Orange Street Station Area

Oriental Street/ Eureka Avenue Station Area

Stuart Avenue/ 7th Street Station Area

University of Redlands Station Area

Figure 3-3: Existing Conditions in the Station Areas

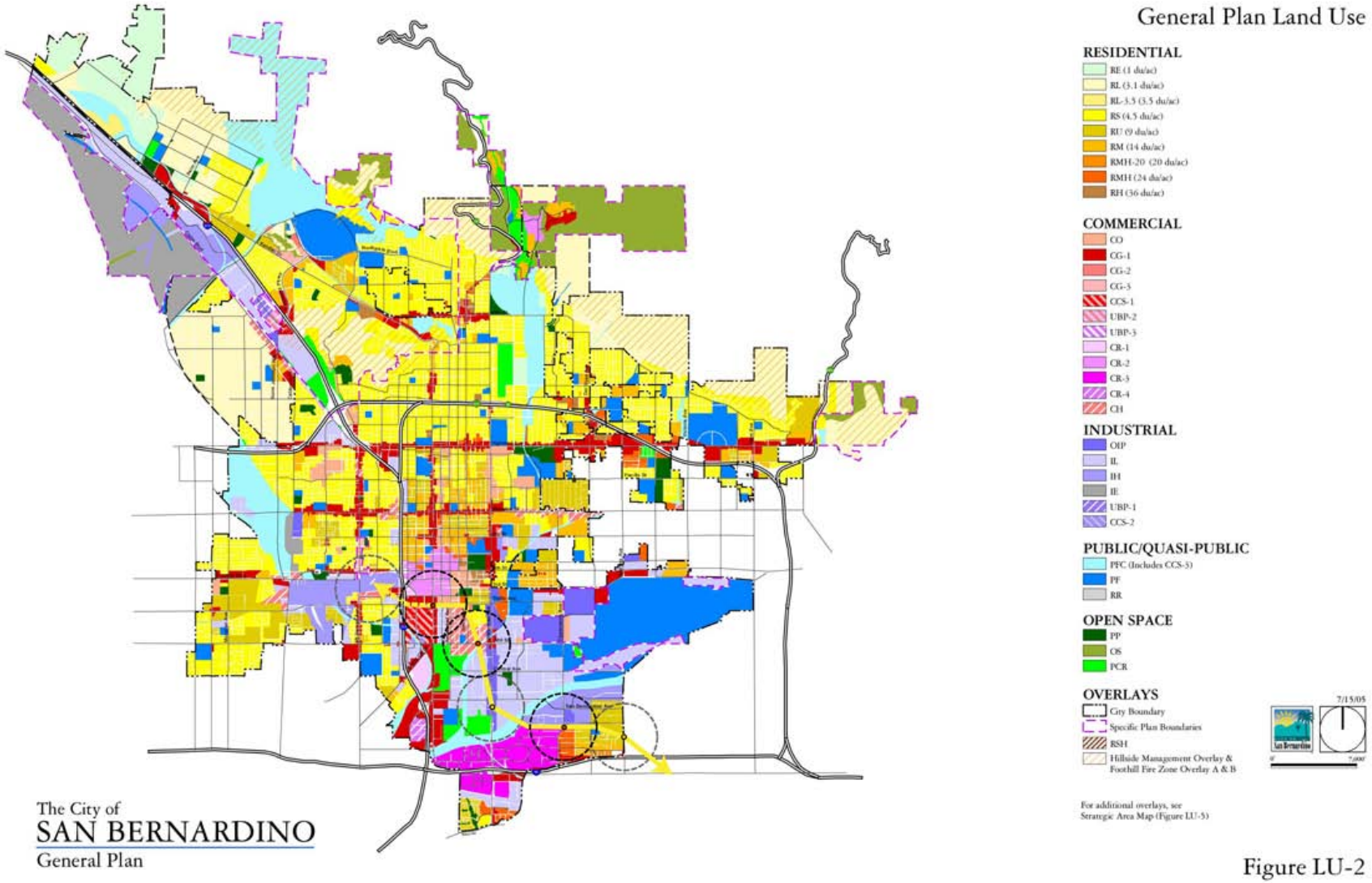


Figure 3-4: City of San Bernardino General Plan Land Use Map

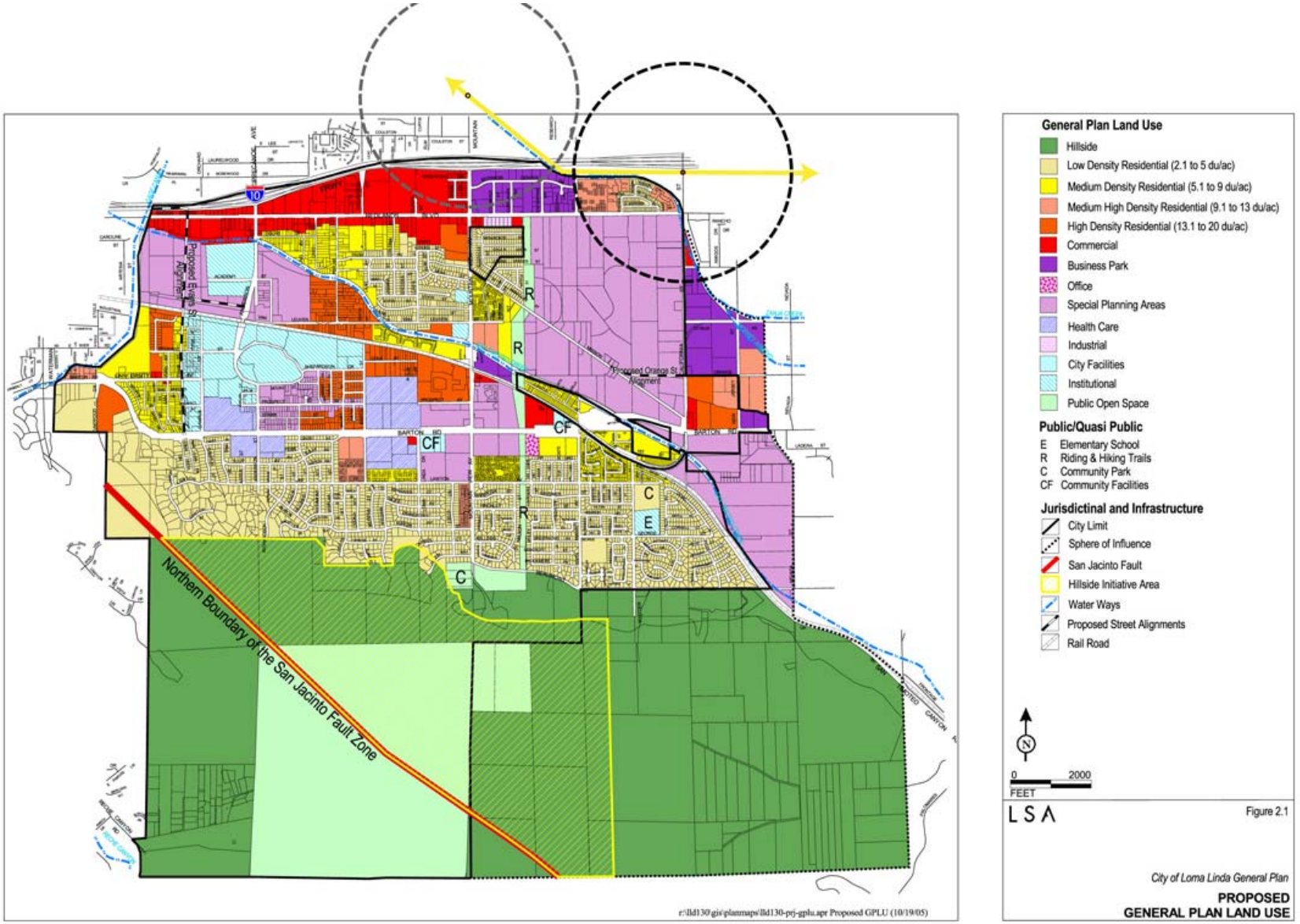


Figure 3-5: City of Loma Linda General Plan Land Use Map

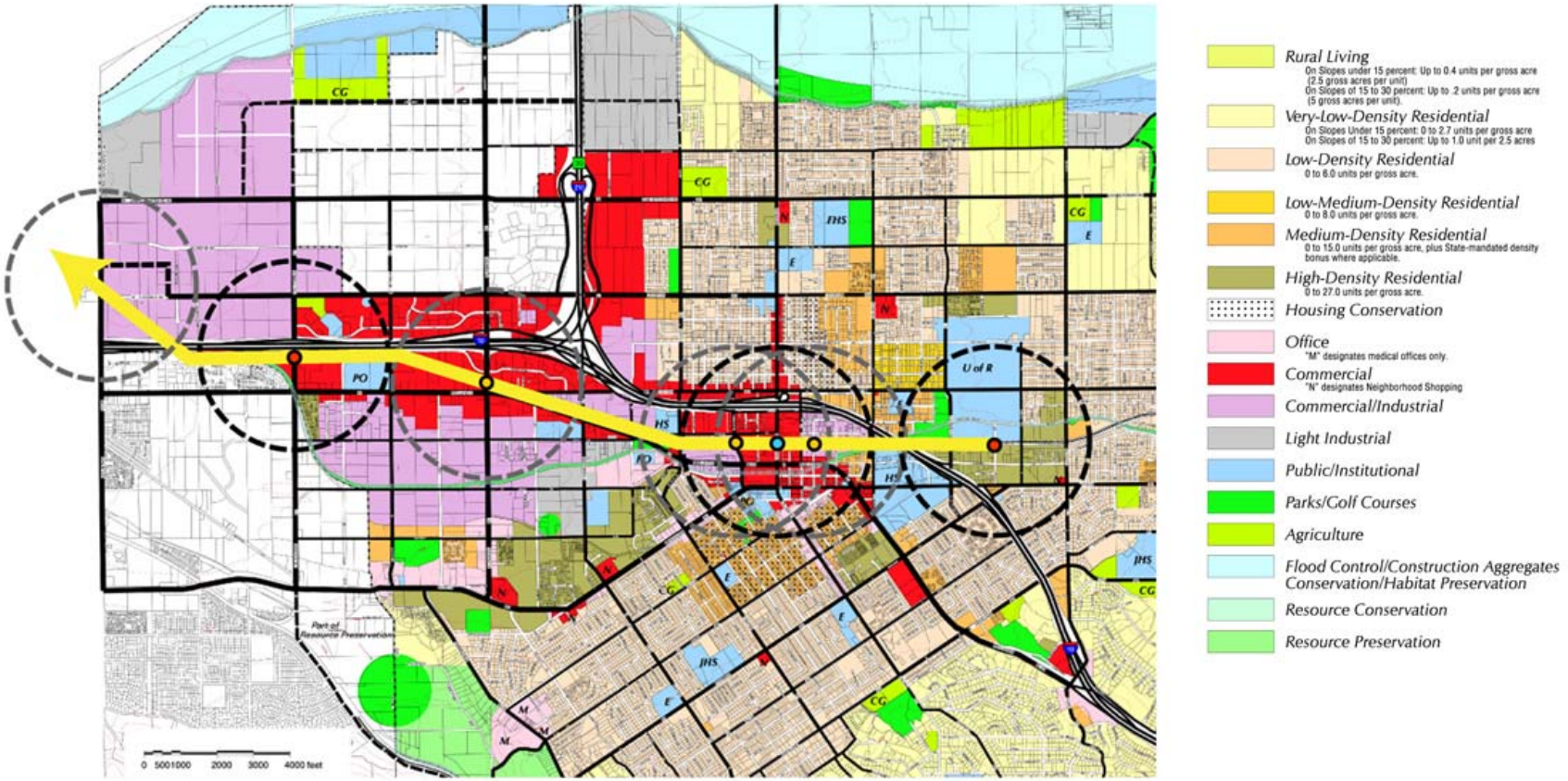


Figure 3-6: City of Redlands General Plan Land Use Map

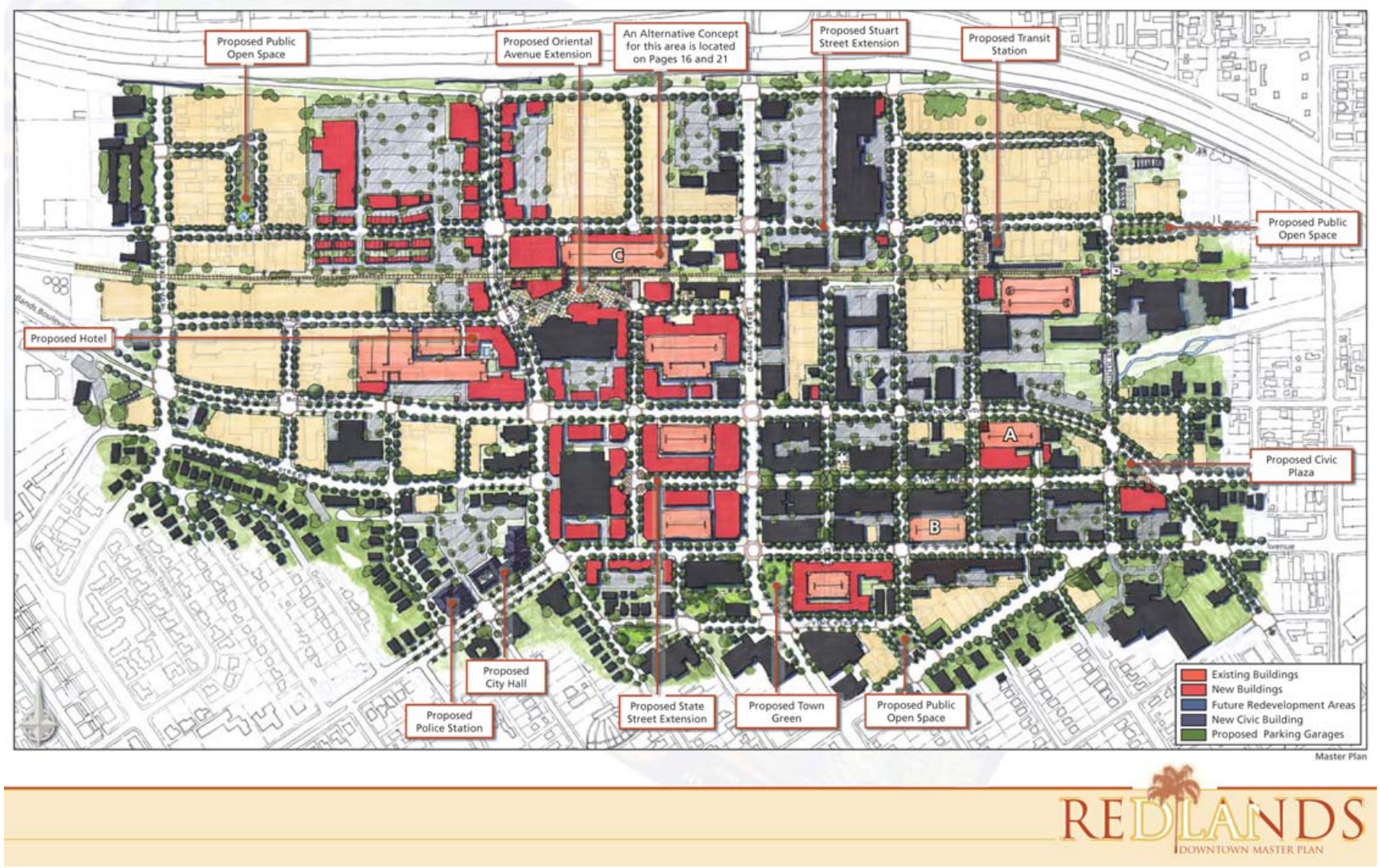


Figure 3-7: City of Redlands Draft Downtown Plan

Land use characteristics and economic development potential of station areas are summarized below:

- The Mill Street and San Bernardino Transcenter Station and station areas in the City of San Bernardino are mostly employment based, considering both existing and planned uses. The San Bernardino Transcenter station area encompassing a portion of downtown San Bernardino has the highest development potential, including the addition of new residential near the Carousel Mall.
- The Tippecanoe Avenue and Mountain View Avenue station areas have a mix of existing and planned employment and residential uses.
- The California Street station has a mix of existing older retail, industrial, apartments, and the County Museum. Vacant land is planned as a mixed-use special planning area in Loma Linda and for a proposed Kaiser Hospital site in Redlands. In addition, an older shopping area with Wal-Mart near the proposed station may be redeveloped for more intensive uses.
- The Alabama Street station area is primarily employment based. A developer has plans to redevelop the Tri-City Shopping Center adjacent to the station as a "lifestyle center" with mixed-use which would change the character from a vehicular oriented to more pedestrian-friendly.
- The three alternative downtown Redlands stations are all located in an area with a mix of uses and each station area is planned for more intensive uses typically associated with transit-oriented development.
- The eastern terminus station would be within walking distance from the University of Redlands and the station area according to the 2000 Census includes the highest population and employment of all the station areas.

Redevelopment Plans

All of the station areas are located within redevelopment areas, except the University of Redlands station area. Table 3-2 lists the redevelopment plan areas in the City of San Bernardino. A portion of the California Street station is in the Loma Linda Merged Project Area and some of the station area is part of the Airport Influence Area. The City of Redlands has one redevelopment area. All of the downtown alternative station areas are within this area and a small portion of the Alabama Street is within the redevelopment area.

Table 3-2: City of San Bernardino Stations

	Station Location	Within Strategic Area	Within Redevelopment Area	Airport Influence Area
Feasibility Study Stations	E Street	Downtown	Central City Projects	No
	Mill	Tippecanoe	A small part in Central City Projects (mainly Orange Show) The remainder of the area is located in Inland Valley Development Agency Redevelopment Area	Yes
	Tippecanoe	Southeast Southeast Industrial Urban Conservation and Enhancement	Tri City Southeast Industrial Park	Yes
Other Stations	Waterman	Tippecanoe Urban Conservation and Enhancement	Southeast Industrial Park A small part in Central City Projects	Yes
	Mountain View	Southeast Southeast Industrial	Tri-City Southeast Industrial Park	Yes

Environmental Issues

The Redland Passenger Rail alignment passes through many of the industrialized areas of the cities. Therefore potential hazardous material sites in the station areas were researched, to determine if conversion to residential uses would be appropriate. A preliminary search revealed possible hazardous materials issues in close proximity to the San Bernardino Transcenter, California Street, Orange Street, Waterman Avenue and Mountain View Avenue stations. An active Solid Waste site is identified at the Tippecanoe station site. No National Priority List (Superfund site) was found in the ½ mile radius of proposed station locations. Although a more detailed investigation is recommended at a later stage, it is believed that any of these issues would not preclude using these sites as rail stations. A few of the identified hazardous material cases could be closed, however, this cannot be confirmed at this stage. A separate report provided to SANBAG outlines this preliminary search.

Transit-Dependent Characteristics of Stations

Table 3-3 illustrates the transit-dependent characteristics of each station area for existing population according to the 2000 Census. The population of much of the area is transit-dependent with the highest transit dependency in the San Bernardino area and the lowest in the Redlands area.

Table 3-3: Transit-Dependent Characteristics of Existing Uses in Each Station Area

	Stations	Under 18 Over 65	Transit Dependent Characteristics of Stations (2000 Census)		
			% with 0 Vehicle	% Households Below Poverty	% Using Public Transit
Feasibility Study	E Street	44%	39%	37%	7%
	Mill	42%	21%	32%	4%
	Tippecanoe	44%	11%	23%	6%
	California	32%	10%	17%	1%
	Orange	40%	12%	17%	4%
	University	32%	10%	15%	3%
Downtown options	Oriental/ Eureka	40%	12%	17%	4%
	Stuart /7th Street	38%	13%	17%	4%
Alternatives	Waterman	43%	11%	23%	6%
	Mountain View	39%	9%	18%	4%
	Alabama	27%	6%	10%	0.3%

Existing and Development Potential for Each Area

Table 3-4 shows the 2000 Census population, housing, and employment and compares this with the estimated population, housing and employment at build-out under each City's General Plan. To assist in station selection, these tabulations were prepared early on before the update of the SANBAG model.

The General Plan uses and the associated intensities and densities formed the basis for the above estimation process. Wherever any data was unavailable or not specified in the General Plan, assumptions were made based on any equivalent data which a neighboring city may have, the available intensity figures for some of the projects which are currently under development in the area or from the field visits to the station areas. The basic methodology for this exercise is derived from the City of San Bernardino General Plan, Appendix 5 - Methodology Report.

Table 3-4: Development Potential within 1/2 mile of Stations

	Stations	Census 2000 Figures			Estimated General Plan Build-out			
		Population	Housing Units	Employment	Population	Housing Units	Employment	Population/ sq. mile
Feasibility Study	E Street	1,656	662	404	16,558	4,957	27,880	21,538
	Mill	1,174	364	302	352	105	12,072	457
	Tippecanoe	1,461	443	428	5,546	1,660	11,738	7,061
	California	954	447	440	3,906	1,564	8,514	4,974
	Orange	3,901	1,593	1,609	6,655	2,550	28,709	8,474
	University	4,430	1,435	2,134	4,556	1,746	1,078	5,801
Downtown options	Oriental/ Eureka	3,886	1,595	1,612	6,656	2,550	27,561	8,475
	Stuart/ 7th Street	4,168	1,620	1,760	6,656	2,550	16,268	8,475
Alternatives	Waterman	970	293	287	0	0	11,353	0
	Mountain View	3,886	1,595	1,612	4,887	1,463	10,929	6,223
	Alabama	457	227	248	0	0	9,535	0

Source: Gruen Associates,

See Appendix 1 for detailed tabulations and assumptions

3.3 STAKEHOLDERS

Over a several day period, Gruen Associates and SANBAG representatives met individually with a cross-section of stakeholders for the purpose of obtaining additional information on various station sites, determining key issues, discussing potential station locations, and TOD principles and benefits. Another important purpose of these meetings was to investigate any particular needs or visions that these knowledgeable individuals may have which could be provided for in the TOD schemes. Stakeholders interviewed included elected officials from each city, property owners in the area, potential developers, a University representative, businesses in the area, an airport representative and city staff. Those interviewed included:

- Patrick Morris, Mayor of San Bernardino
- Esther Estrada, Councilperson for San Bernardino
- Jon Harrison, Mayor City of Redlands
- Patricia Gilbreath, Mayor Pro Term, City of Redlands
- Robert Ziprick, Councilman, Redevelopment Agency Chairman, City of Loma Linda

- Phillip L. Doolittle, Sr. Vice President, University of Redlands
- Mike Burrows, Assistant Director of San Bernardino International Airport and IVDA
- Ralph Megna, President, The Jamieson Group, Inc.
- Donald J. Berry, Jr., Director of Operations and David Atchley, Facilities Manager, ESRI
- Scott Denham and Jenna Trabulus, CIM Group
- Don Bredberg, Stonecreek/Adventure (Tri City Shopping Center)
- Valerie C. Ross, Director of Development Services, City of San Bernardino
- Lori Sassoon, Assistant City Manager, City of San Bernardino
- Maggie Pacheco, Executive Director Economic Development Agency, City of San Bernardino
- James P. Morris, Chief of Staff, Mayor of San Bernardino
- Dennis Halloway, City Manager, City of Loma Linda
- H.P. Kang, Senior Planner, City of Loma Linda
- T. Jarb Thaipejr, Public Works Director, City Engineer, City of Loma Linda
- Jeffrey Shaw, Community Development Director, City of Redlands
- John Jaquess, Assistant Director City of Redlands
- Robert Dalquest, Principal Planner, City of Redlands
- Robert Matter, Public Works Director, City of Redlands
- Don Gee, City of Redlands

The following summarizes some of the comments made by various stakeholders.

City of San Bernardino Elected Officials and Staff

- There is strong support for transit-oriented development, especially at the San Bernardino Transcenter site.
- Mixed use has become more acceptable to the community.
- High densities in the 40-60 units, range is desired at the Transcenter site and the LNR proposal for Carousel Mall should be more intense than currently proposed.
- Connections to the Santa Ana trail regional network should be considered.

The County of San Bernardino needs a site for offices and contact should be made by SANBAG/Omnitrans to discuss the potential with the Board of Supervisors.

City of Loma Linda Elected Officials and City Staff

- University Village and Orchard Park developments near the California Street stations are mixed use, commercial, multi-family and small lot single family.
- The City has plans for a trail system along the Edison Corridor and flood control channel.
- The City would like to have the shuttle connections between Tippecanoe station and Loma Linda Medical Center and good pedestrian connections at California Street.
- The City is also interested in other transit such as Metrolink on the mainline tracks that go through Loma Linda.
- Loma Linda employees are over 15% local, 15% Redlands, and 70% from other cities.

The City of Redlands Elected Officials and Staff

- City officials and business stakeholders were interested in trails along the ROW which link to the planned regional trail system. Preservation of the Zanja is important.
- Parking should be provided along the right-of-way, but not at the University station.
- Building height may be an issue in Redlands; 3-5 stories in downtown may be achievable.

- High density cluster housing may be achievable.
- Assembly of land at downtown Orange Street station site may be a problem, unless the developer near Orange Street is willing to modify his plans. The Oriental/Eureka downtown location is preferred by several stakeholders as it may be easier to assemble land.

City of Redlands Business Owner

- ESRI has 1,800-1,900 employees and will have up to 1,000 additional employees in the next 5-7 years in downtown Redlands.
- Fifty percent of their employees travel from Redlands and Yucaipa and the remainder from other cities in the west.
- There's a large customer traffic from Los Angeles on Metrolink and also customers from the University of Redlands.
- Oriental/Eureka is the preferred station location with Orange Street next as these locations are closest to ESRI.
- The rail station should have parking and landscaping.
- ESRI has an expansion program to expand buildings by 40,000 SF and build a new 60,000 SF building in the next two years.
- A pedestrian walkway is needed along Redlands Boulevard to improve access to a future station.

Stonecreek/Adventure

- The 60-acre Tri City Shopping Center in Alabama Street and Colton Avenue is planned to be renovated as a lifestyle center with mixed use including office, hotel, retail, residential, an art house movie theater, medical, and home improvement organized along an outdoor pedestrian promenade. A train station could be integrated with this development.
- A benefit assessment distance should be established to improve the frontage along Colton Avenue.
- There would be potential for residential south of Redlands Boulevard at the Alabama station site.

The Jamieson Group, Inc. (Krikorian development)

- The Krikorian development prefers the Eureka/Oriental downtown station location with the trains no further east than Eureka.
- The current plan for expansion of the Krikorian development includes:
  - Phase 1 – new parking structure (+ 700 spaces) north of railroad tracks
  - Phase 2 – expand theater by two screens and add retail
  - Phase 3 – add 2-story retail and rehab existing station
  - Phase 4 – ground level retail, 250-400 units of housing and parking
- Krikorian's representative does not believe that shared parking is feasible due to the overlap with the theater in the 5:30-7:30 time frame.

Other Developers

- Market trends in the area include:
  - Town Center type development like Victoria Gardens
  - Neighborhood serving retail, office and flex professionals
  - Condominiums in the 350-400 K price range
  - Condominium densities in the 15 to 60 du/acre (no apartments)
  - Office park development

University of Redlands

- The University representative supports the rail extending to the University and a transit station between University Street and Grove Street adjacent to University owned land. Many of the faculty live in Claremont and the students need a connection to downtown.
- An art and performing arts center is being expanded and faculty housing is under consideration near the station site.

- The University is starting the update of its master plan.

San Bernardino Airport – IVDA

- The airport has plans to extend the runway 900 feet to the east and 600 feet to the west
- Mill Street Station would be preferred over the Waterman Street Station.
- IVDA participates in the redevelopment process with land use designations resting with the City. Projects are implemented with cooperative agreements with the City and the Economic Development Agency.
- Central Avenue is to be widened to four lanes with a new connection with Mountain View Avenue.

3.4 EVALUATION OF STATION LOCATIONS

In the earlier Feasibility Study for the Redlands Passenger Rail Study, stations were recommended at the Santa Fe Depot, Rialto/E Street, Mill Street, Tippecanoe Avenue, California Street, Orange Street in downtown Redlands, and the University of Redlands. This study revisits the site locations with consideration as to transit supportive uses and connectivity in addition to ridership. Issues, opportunities and constraints were identified with respect to TOD potential for each station area, evaluation criteria were developed, each station ranked according to these evaluation criteria, and preliminary recommendations made as to stations to consider.

Issues, Opportunities and Constraints

Based on the research and analysis documented in this chapter, a number of issues and constraints were identified that could limit station area development based on the principles of TOD described in Chapters 1 and 2. At the same time a set of opportunities to carry on a successful TOD proposal are explored for each station area.

Public congregation spaces in E Street station area


University of Redlands campus


Existing residential uses in California station area

Table 3-5: Station Area Issues, Opportunities and Constraints

	Feasibility Study				
Station	**E Street**	**Mill**	**Tippecanoe**	**California**	**University of Redlands**
Issues	▪ Current development plans are not part of Feasibility Study ▪ Station area is primarily employment based ▪ No park-and-ride facilities planned at Transcenter	▪ Current land uses are low in employment density ▪ Station area is primarily planned for heavy commercial uses	▪ Current retail uses are not pedestrian-friendly ▪ Flood control channel and railroad tracks are a barrier to linking north-south station areas	▪ Existing traffic congestion ▪ Freeway divides the station area ▪ Annual housing approval cap by City of Redlands ▪ Initiative may restrict minimum lot sizes in City of Loma Linda and could reduce proposed densities	▪ Well built-out station area ▪ Low density residential development ▪ Not good accessibility to station location
Opportunities	▪ Station would serve intense downtown uses with planned FARs up to 4.0 ▪ Planned multi-modal Transcenter ▪ Redevelopment plans for new residential uses at the Carousel Mall ▪ Underutilized industrial and surface parking lots could be developed ▪ Pedestrianized areas in downtown ▪ Easy access to freeway and downtown	▪ Much of station area is vacant or under-utilized ▪ Proximity to San Bernardino International Airport ▪ Improvements planned for Waterman Avenue ▪ Flood channel with improvements could be a linkage	▪ Large portion of station area is within redevelopment area ▪ Older residential neighborhood is designated for higher density ▪ Redevelopment possibilities for older industrial uses near station ▪ New office and retail planned for additional 2000 employees	▪ Major mixed-use and residential developments planned ▪ Heavy employment uses in vicinity ▪ Mix of uses in the area ▪ Abundant vacant land north of freeway ▪ Redevelopment possibility at the Wal-Mart site ▪ Provision of amenities along flood channel	▪ Vacant parcels around station site could be developed ▪ Existing population and employment high for the corridor ▪ University of Redlands supports station and development of its adjacent lands
Constraints	▪ Area south of Rialto Avenue is industrial ▪ Limited vacant land ▪ A foundry in the area is in CERCLIS database of current and potential Superfund sites. Two sites on D Street are in Leaking UST database.	▪ Existing and General Plan land uses are not transit supportive ▪ May be difficult to attract quality development to the station area ▪ Not located directly on a bus line	▪ Much of vacant land is already planned for development ▪ Tippecanoe, a wide congested street, is the only possibility for linkage to the station. It lacks sidewalks in some sections. ▪ Two sites are in Solid Waste Information System.	▪ Freeway is a visual and pedestrian barrier ▪ Access difficult to vacant site near proposed station ▪ One site is in Leaking UST database.	▪ Limited potential for redevelopment of existing and built out areas ▪ One Site is in CERLIS database of current and potential Superfund Sites.

Table 3-5 (continued): Station Area Issues, Opportunities and Constraints

	Downtown Redlands Options					
Station	**Orange Street (Feasibility Study)**	**Oriental Avenue/ Eureka Street**	**Stuart Avenue/ 7th Street**	**Waterman**	**Mountain View**	**Alabama**
Issues	▪ Location of station and park-and ride ▪ Access from freeway to park-and-ride ▪ Potential for economic development ▪ Current cap on residential development and restriction on height in some areas to 3-stories and densities to 15 du/ acre ▪ Freeway a barrier to pedestrian linkages in northern portion of the station area			▪ Low intensity development in the station area ▪ Golf Course is not a transit dependent use ▪ Limited vehicular access ▪ Major employment outside the 1/2 mile radius	▪ Station area in 3 jurisdictions ▪ Conflicting land uses across Mountain View Avenue ▪ Freeway and railroad tracks are a barrier to employment uses	▪ Existing uses are vehicular oriented ▪ Heavy traffic congestion ▪ Freeway divides station area
Opportunities	▪ Most central downtown location ▪ Would directly link to proposed developments to the west ▪ Proposed City parking could be shared ▪ Existing circulation and connections would continue ▪ Allows for extension of rail to University	▪ Large site to locate station and related developments ▪ Proposed city parking could be shared	▪ Potential to develop an underutilized area of downtown ▪ Easy access from freeway for park-and-ride ▪ Direct pedestrian connection to State Street ▪ Allows for extension of rail line to University	▪ Residential and office developments are proposed using Golf course as an amenity ▪ Very low commercial activity ▪ Part of Santa Ana River Concept Plan	▪ Large vacant site for station and related development ▪ Neighborhood retail could be provided ▪ Trail connections along flood channel ▪ Possibility for shuttle connections with more intense uses in vicinity	▪ Planned redevelopment of the Tri-City Shopping Center ▪ Realignment of East Colton Avenue would reduce congestion ▪ New public safety building is planned in this area
Constraints	▪ Limited pedestrian connections to 7th Street ▪ Two sites are in Leaking UST database.	▪ Pedestrian connectivity would not be direct ▪ Location is remote from current activity areas ▪ As proposed in downtown plan, would not allow for continuation of rail to University	▪ Would require displacement of uses which were previously moved from other portions of downtown ▪ Would require extension of Stuart Avenue through the Von's parking lot to connect with transit station ▪ A site is in Solid Waste Information	▪ Area under San Bernardino Airport flight path ▪ Santa Ana River and flood channel are barriers to accessibility ▪ With scattered development, land consolidation may be a problem ▪ Uses planned are low intensity employment uses	▪ The site for station has limited accessibility ▪ Station site across from flood channel may make construction expensive and linkages difficult	▪ Freeway and railroad tracks are barriers ▪ No designated residential uses ▪ Managing congestion near freeway would be difficult

These assessments form the basis of the evaluation to narrow the number of stations to the final set of stations to undertake in further tasks of this study. A summary chart of these issues, opportunities and constraints is shown here in Table 3-5. More detailed descriptions are available in Chapters 7 through 12 which discuss each station location and its surrounding ½ mile radius area. Also, a matrix comparing the alternative sites for downtown Redlands is found in Chapter 11. Appendix 1 includes the analysis prepared for the Waterman and Mountain View stations which was a part of the earlier draft memorandum of exiting conditions, issues, opportunities, and constraints.

Evaluation Criteria for Station Locations and TODs

The following evaluation criteria were presented at the first Task Force meeting and later refined by the consultant:

- City or political support
- Potential for transfer from other modes of transportation (intermodal connectivity)
  - San Bernardino International Airport connections
  - Near existing or proposed rail station, i.e. Metrolink, sbX
  - On major planned bus lines for feeder services
  - Potential locations for the development of a new Redlands Transcenter at the eastern end of the line
- Proximity to major activity centers
  - Downtown area
  - Major retail/ mixed-use center
  - University, college campus, or large entertainment areas
  - Major employment centers
- Transit-supportive existing land uses
- Transit-supportive land use plans and policies
  - General Plan transit-supportive policies
  - Other land use plans supporting growth
- Economic development potential ½ mile from station
  - Joint development or public/private development opportunities
  - Underutilized areas needing redevelopment or revitalization
- Station area primarily in a current redevelopment area
- Vehicular accessibility to station
- Availability of sites for park-and-ride or shared parking
- Connectivity to pedestrian and bicycle pathways
- Minimal environmental impacts
- Adequate station site area available to minimize impacts on sensitive uses

Evaluation of Stations

Using the evaluation criteria, each station location and the corresponding station area were evaluated for suitability for transit supportive development and connectivity. Table 3-6 ranks each proposed station area with five being the highest potential and one the lowest for TODs.

Table 3-7 ranks each station per the evaluation criteria. Ridership is another criterion to be considered. The projected boardings from the 2003 Feasibility Study are shown in Table 3-8. These have been updated in Chapter 5

From Tables 3-7 and 3-8, the E Street station and the downtown Redlands stations have the highest scores relative to transit-supportive development and connectivity and also in terms of potential ridership.

Table 3-6: Preliminary Evaluation of Station Locations and Potential TODs in ½-mile station areas

(5 has the highest potential and a 1 has the lowest)

					Downtown Alternatives				Alternative Stations		
	E Street	Mill Street	Tippecanoe Avenue	California Street	Orange Street	Oriental Avenue/ Eureka Street	Stuart Avenue/ 7th Street	University of Redlands	Waterman Avenue	Mountain View Avenue	Alabama Street
City or political support	5	4	5	5	4	3	4	4	3	2	4
Inter-modal connectivity	5	2	4	3	4	2	2	3	3	1	3
Proximity to major activity centers	5	2	3	3	5	5	4	3	1	2	2
Existing transit supportive land uses	5	1	3	2	4	4	4	4	1	2	2
Planned transit supportive land uses and policies	5	1	3	3	4	4	2-4*	3	1	2	2
Economic development potential	5	4	3	3	4	4	4	2	4	4	3
In Redevelopment Area	5	5	5	5	5	5	5	1	5	5	5
Potential for pedestrian and bicycle connectivity	4	4	3	2	5	4	4	4	3	3	1
Minimal environmental impacts	2	3	2	3	2	4	3	4	2	3	3
Adequate station area	5	5	5	4	4	4	4	4	5	5	5
Vehicular site accessibility from freeway	5	2	3	4	4	4	5	4	4	4	4
TOTAL	53	33	39	37	45	43	41-43	36	32	33	34

*higher is for downtown plan

Tippecanoe, California, and the University of Redlands have ridership in the mid range of 1,010 to 1,280 and had the next highest scores. All stations are in a redevelopment area receiving five points except the University of Redlands. If these criteria were not considered, the University of Redlands would follow the downtown stations in ranking. From this analysis the following stations should be considered, all of which were in the original Feasibility Study:

- E Street (San Bernardino Transcenter)
- Redlands – downtown
- Tippecanoe
- California
- University of Redlands

After this, the spacing of stations relative to coverage also becomes a criterion for selecting additional stations:

- Between Rialto and California, a distance of three miles, there needs to be at least one station. Mill scores higher than Waterman. Two stations are feasible however, ridership at these stations are the lowest in the corridor. Mill was included as it has potential for mixed use and it is not under the airport flight path

Table 3-7: Ranking of Each Station Area per Evaluation Criteria			
Ranking	**Station**	**Score**	
1	E Street	53	
2	Redlands – Orange	45	
2	Redlands – Stuart	41-43	
2	Redlands – Oriental	43	
3	Tippecanoe	39	
4	California	37	
5	University of Redlands	36	
5	Alabama	34	Alternative Station
6	Mountain View	33	Alternative Station
6	Mill Street	33	
7	Waterman	32	Alternative Station

- Both Mountain View and Alabama stations are between stations that are 2 miles apart. Alabama scores higher than Mountain View and should be included assuming that the redevelopment of the Tri-City Shopping Center is feasible.

- It is recommended that a total of seven stations be included in the baseline model analysis:

- E Street
- Mill
- Tippecanoe
- California
- Alabama
- Orange Street- Redlands downtown
- University of Redlands

Table 3-8: Ridership forecasts from the Feasibility Study	
Station	**Ridership**
E Street	3,200
Mill	940
Tippecanoe/S.B	1,010
I-10/California	1,280
Citrus/Orange	1,790
University of Redlands	1,020

4

LAND USE ALTERNATIVES

4.1 LAND USE ALTERNATIVES

Based on the analysis and task force/stakeholders input described in Chapter 3, alternative land uses and circulation concepts for each station area were presented to the task force and at community workshops. In order to select a direction, Figures 4-1 through 4-8 illustrate the land use and linkages alternative concepts for each station and key points for each individual station.

4.2 SUMMARY OF COMMUNITY WORKSHOPS ON ALTERNATIVES

San Bernardino Associated Governments (SANBAG) convened a series of three community workshops between July 18-31, 2006 regarding the Redlands Passenger Rail Station Area Plans (RPRSAP), as part of the proposed Redland Rail Passenger Rail service in San Bernardino County. The workshops were held in conjunction with workshops on the Long Range Transit Plan. Each project featured separate workshop booklets and discussions for each subject.

The purpose of the RPRSAP workshops was to inform community members about the proposed routing and stations for a passenger rail extension connecting the San Bernardino Metrolink commuter rail station with Redlands, as well as to review potential "transit village" concepts at station areas. Additionally, the workshops were designed to receive community feedback on the rail station locations, potential development alternatives for station areas, and transit village concepts.

By the year 2030, SANBAG estimates that the Valley will experience explosive growth. Given this growth, mass transit must play a larger role in serving future travel demand to lessen the burden on freeways and roads. Mass transit is a "green solution" because it attracts car drivers to switch to transit, thereby lessening air pollutants and energy consumption. Premium transit—such as rapid buses and rail—can encourage more balanced, "transit-oriented" land use development near stations.

The community workshops occurred at the following locations:

- Feldheym Library, City of San Bernardino, July 18, 2006
- Market Night, City of Redlands, July 27, 2006
- Senior Center, City of Loma Linda, July 31, 2006

Approximately 83 community members signed in as participants in the workshops. A number of additional participants visited the exhibits at Redlands Market Night but did not sign in.

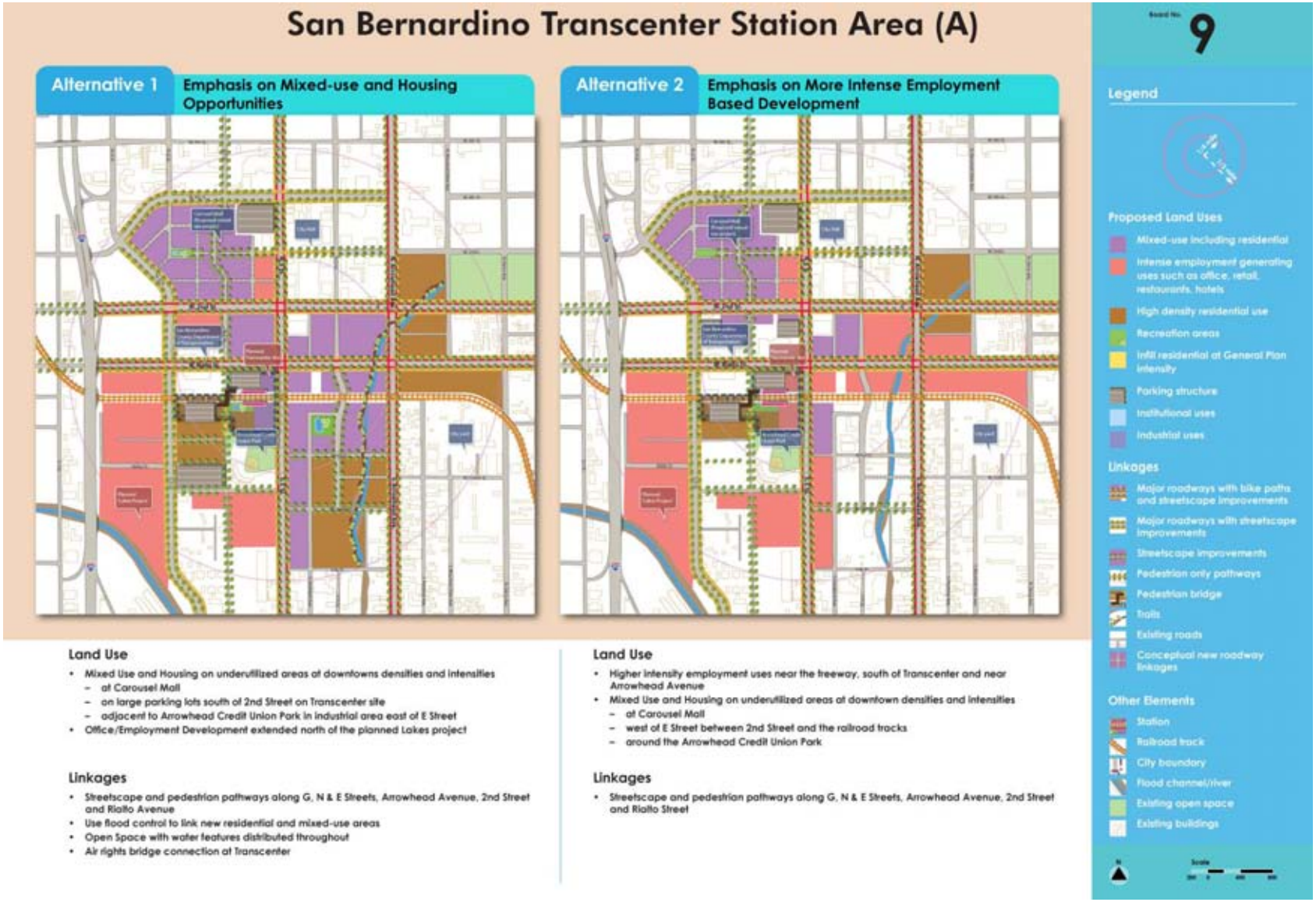


Figure 4-1: San Bernardino Transcenter Station Area Land Use Planning Alternatives

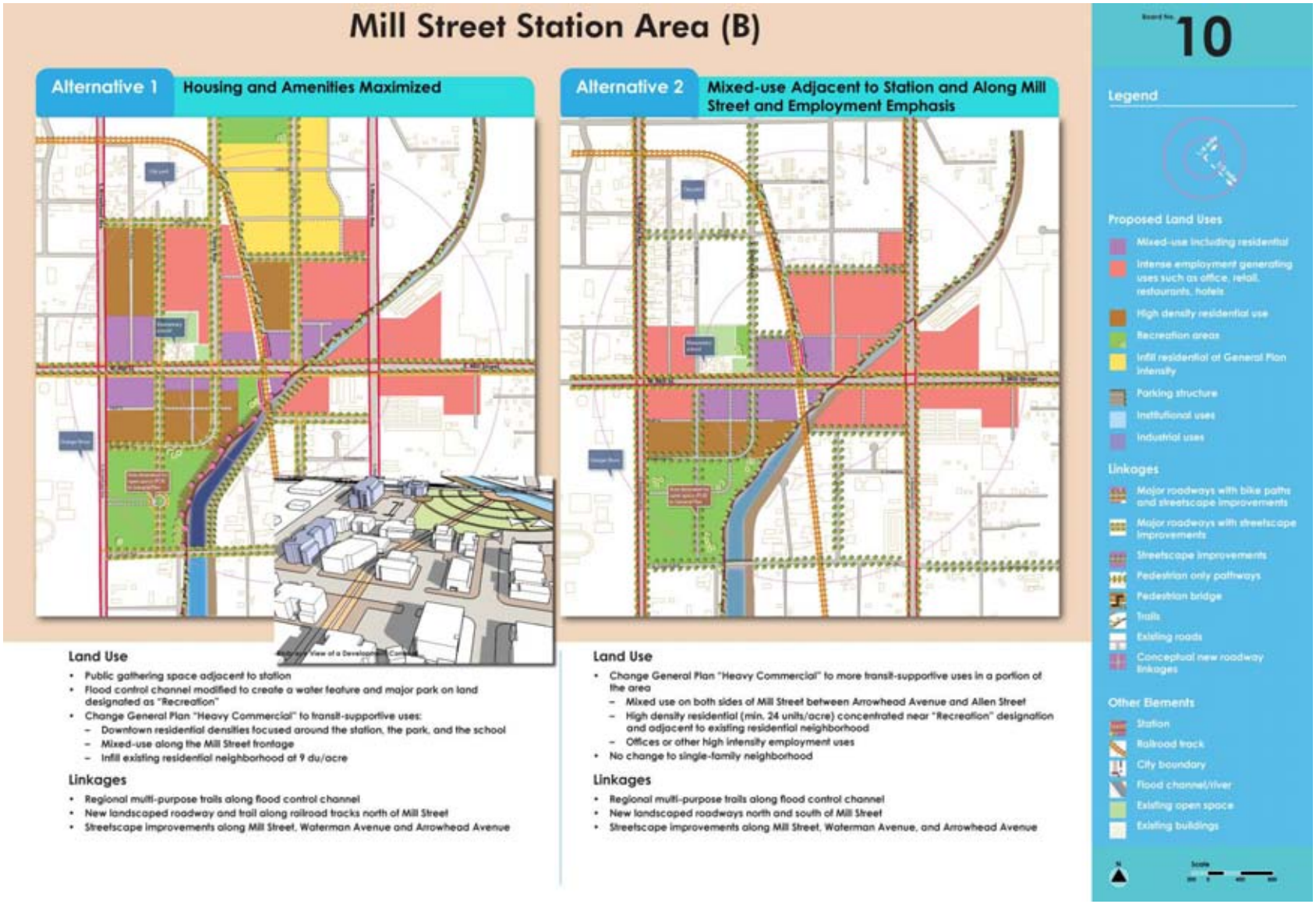


Figure 4-2: Mill Street Station Area Land Use Planning Alternative

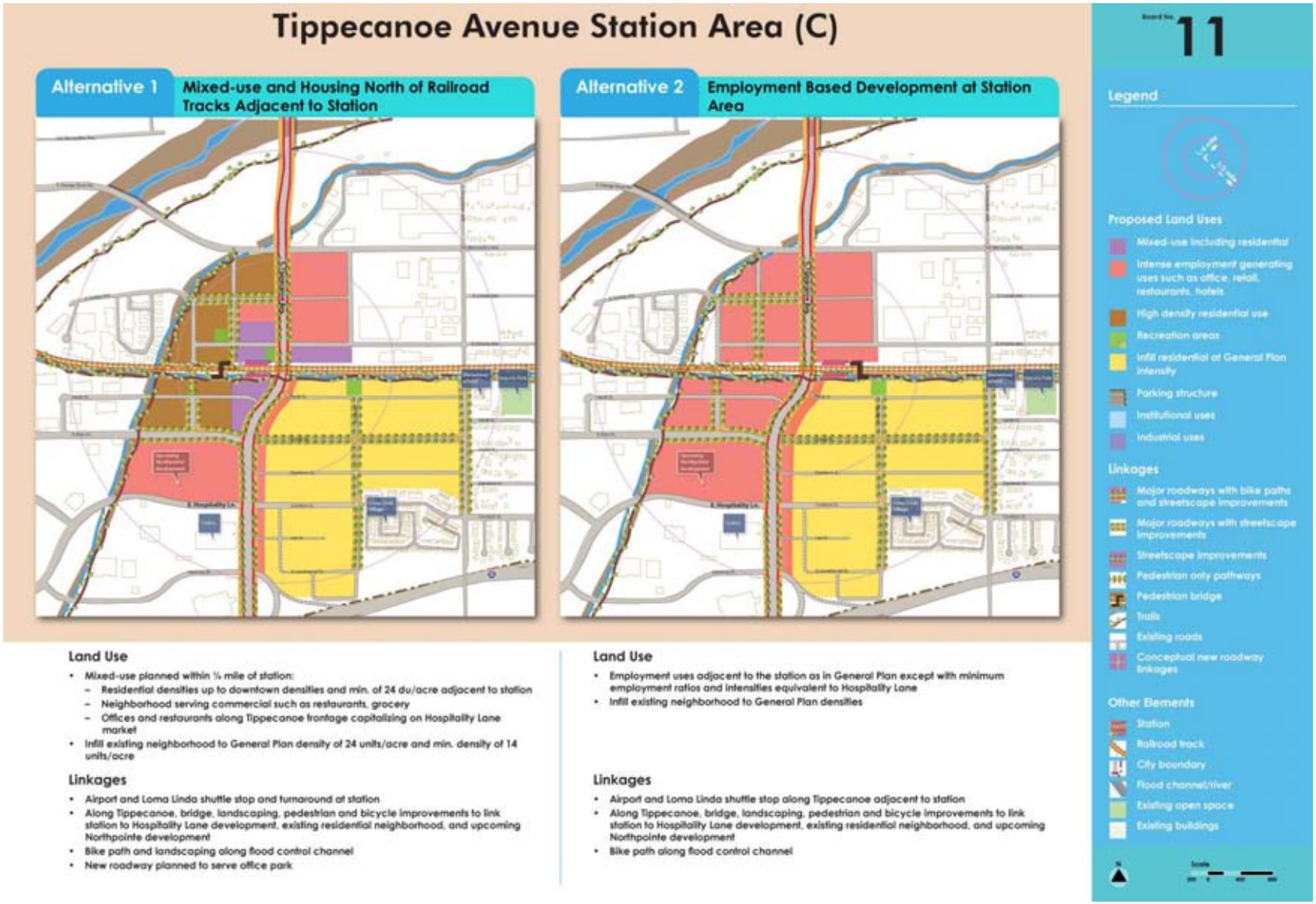


Figure 4-3: Tippecanoe Avenue Station Area Land Use Planning Alternative

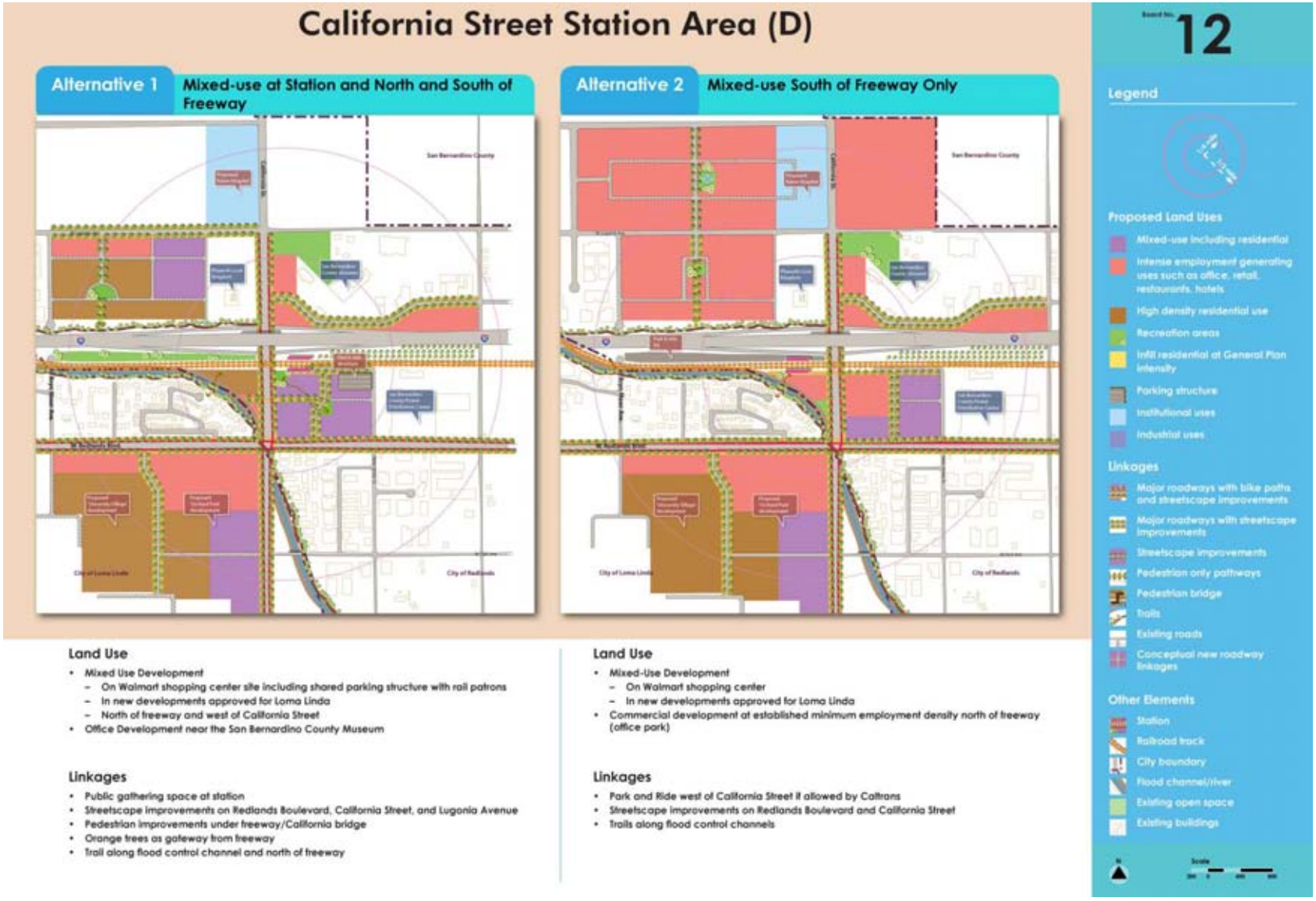


Figure 4-4: California Street Station Area Land Use Planning Alternative

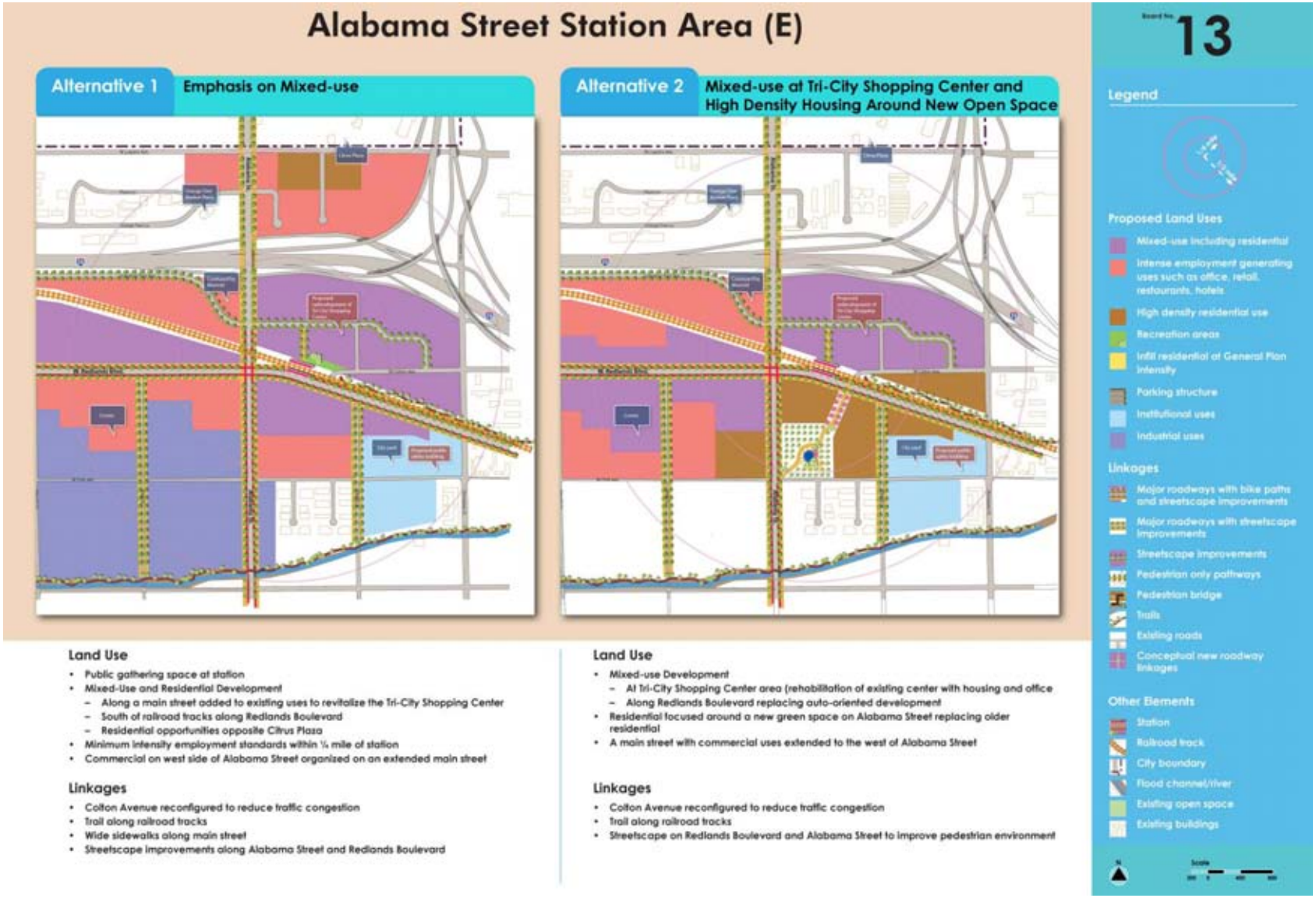


Figure 4-5: Alabama Street Station Area Land Use Planning Alternative

Downtown Redlands Alternative Station Locations

Board No. 14

1 • Orange Street

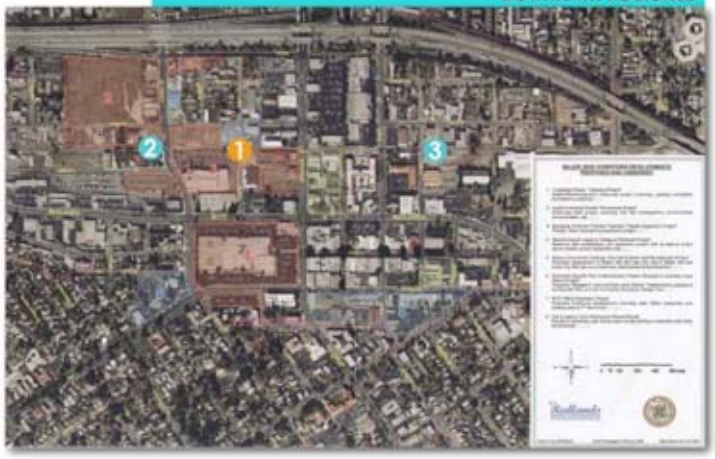
2 • Oriental Avenue/Eureka Street

3 • Stuart Street/7th Street

All alternatives assume rail would continue to University of Redlands

Alternative Station Locations	Opportunities	Constraints
1 Between Orange Street and Eureka Street	• Central location and good linkages • Existing transit-supportive uses • Shared city parking opportunities • Station already there	• Traffic access from freeway • Reduces catalytic opportunity on 7th Street • Property owner adjacent does not currently support
2 Oriental Avenue/ Eureka Street	• Large sites for development planned • Shared city parking opportunities	• Remote locations from current activities • Indirect pedestrian connectivity • Limits rail extension if developed per Draft Downtown Plan
3 Stuart Street/ 7th Street	• Redevelop on underutilized area • Site available for parking • Easy freeway access • Good connection to State Street	• Displaces uses previously moved • Weak connections to west planned through Von's • Remote from existing uses

Major Proposed Developments in Downtown Redlands



Goals to Guide the Future of Redlands from Draft Downtown Plan

- Promote downtown Redland's economic vitality by encouraging a mix of uses
- Create pedestrian-oriented environment
- Maintain and enhance a distinct Redlands character
- Enhance and extend the civic realm

Goals to Guide the Comprehensive Strategy for Downtown Redlands from Downtown Specific Plan

Goal 1 - Develop the Specific Plan area as an extension of downtown Redlands, providing high-quality pedestrian-oriented development character consistent with the rest of the Town Center

Goal 2 - Provide opportunities for the expansion and development of small businesses that provide local services

Goal 3 - Provide public improvements for traffic circulation, flood control, utility services and aesthetic amenities that will attract new private investment and economic development

Goal 4 - Preserve historic buildings and sites

Figure 4-6: Downtown Redlands Matrix of Evaluation for the Three Station Sites

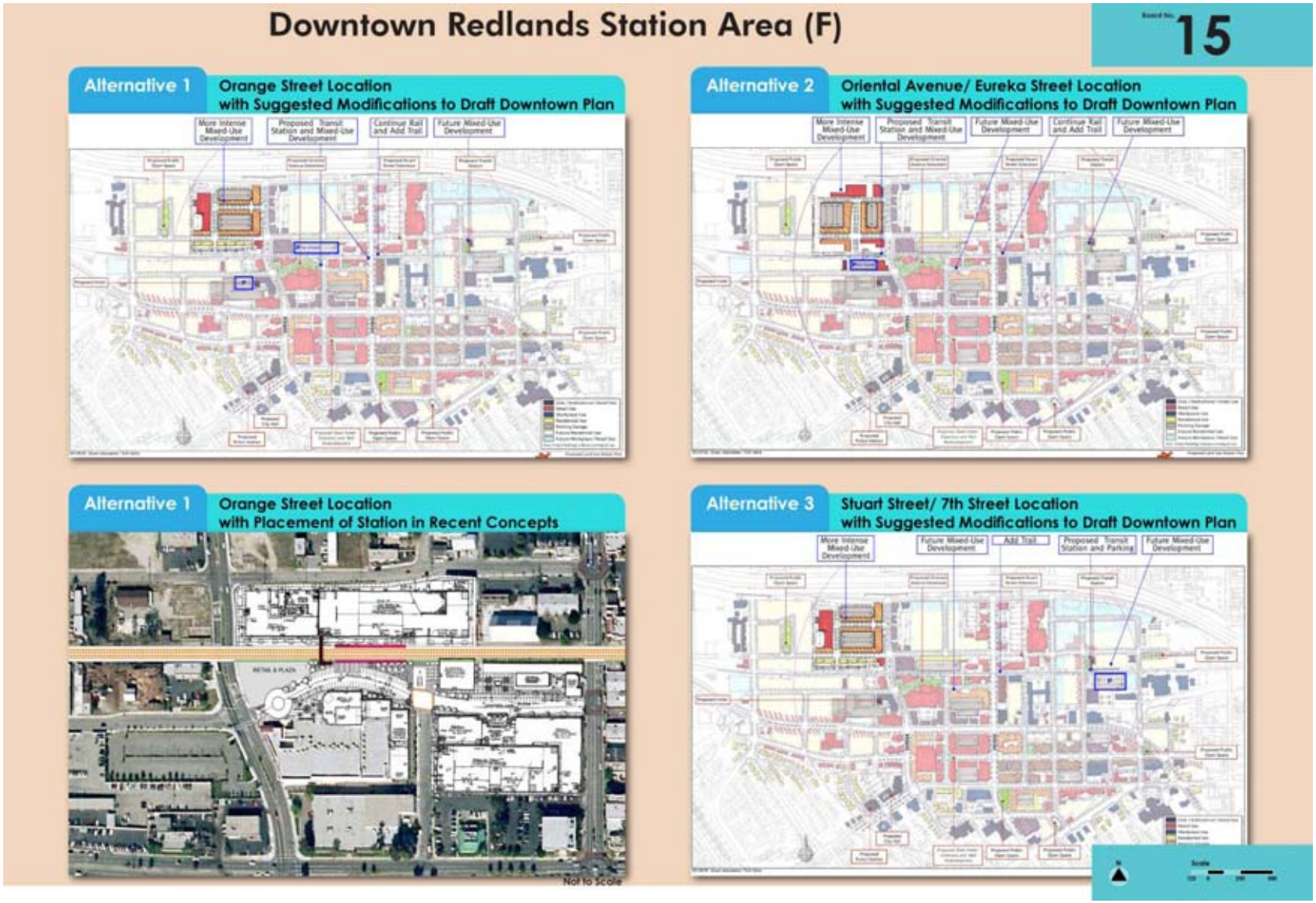


Figure 4-7: Downtown Redlands Station Location Alternatives

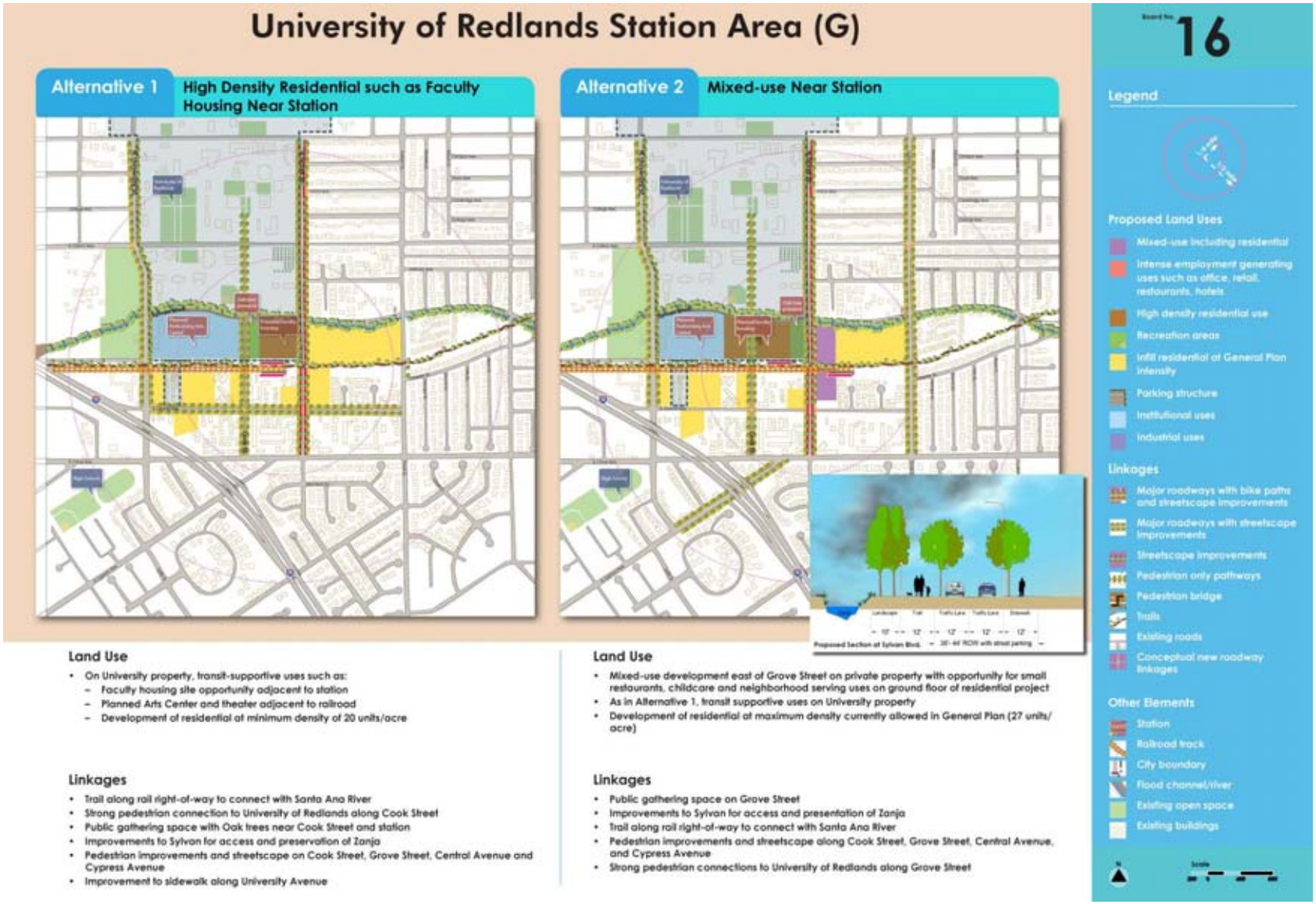


Figure 4-8: University of Redlands Station Area Land Use Planning Alternative

Each workshop involved self-paced visits, facilitated by resource persons where participants could view, discuss and provide input on options for rail extension, potential station areas, and transit village concepts. Participants also reviewed display boards regarding the proposed Long Range Transit Plan (LRTP), which will address the region's current and future travel challenges. Project staff from SANBAG and Omnitrans, as well as project consultants from Gruen Associates; Parsons; and Moore Iacofano Goltsman, Inc.; answered participants' questions and further explained project elements.

Participants provided written feedback via comment booklets with sections that corresponded to the display boards, including general questions about their ideas. The following is a synopsis of key findings and observations from participants' written feedback. A more detailed transcription of comments follows the synopsis in Attachment A.

Key Findings and Observations: Transit Village Concepts and Existing Conditions

The workshops were organized into various display areas for each of the topics discussed below.

Overall Redlands Passenger Rail Routing and Stations

Participants commented on the proposed overall Redlands Rail Extension routing, stations, and current and proposed intermodal connections. Almost all participants expressed support for the rail extension and proposed station locations, with a few participants also emphasizing the importance of rail-bus connections and providing ideas for specific connections.

The Transit Village Concept

The exhibit included a tutorial on the "building blocks of a transit village" (Figure 1-2). These include walking pathways that link the station to the neighborhood in a one-quarter (¼) to one-half (½) mile radius, a compact mix of uses and amenities, and landscaping that improves the overall area. Most participants expressed support for these concepts, noting positive impacts on the environment, energy use, and pollution, as well local retail and housing opportunities. A few questioned these positive outcomes, or suggested that a public education process would be needed for the community to fully understand and support the benefits of and need for the concept in the region.

Transit Villages and Mixed Use Examples

This exhibit provided images and descriptions of transit villages and mixed use examples from California—including Pasadena, Santa Clarita, Brea, Santa Monica, Long Beach, San Francisco and Oakland—and other areas of the Western United States such as Lake Oswego and Portland, Oregon. Almost all participants expressed positive reactions to these examples, and some suggested additional examples should be featured from Eugene, Oregon, as well as CalTrain redevelopment projects along the Peninsula of the San Francisco Bay Area. One participant suggested developing a test project in the area to showcase the benefits, while others suggested including a wide mix of amenities and retail and transit connections to other shopping areas. However, a few others expressed concern about such development changing the character of Redlands, or inviting negative elements.

Transit Village Benefits

This exhibit provided images and descriptions of economic, environmental, and social benefits from transit villages such as improving air quality by reducing auto trips and emissions, assisting in revitalization or redevelopment of an area, and health benefits from walking and bicycling. Again, almost all participants expressed support for these benefits, with some emphasizing the opportunity for new community spaces, access to transit, reduced commute times, living and working in closer proximity, bicycle connectivity, and convenience. Several participants in Redlands emphasized the importance of retaining Redlands' historic

character. One participant expressed concern that these benefits are not realistic.

San Bernardino Station Areas – Existing Conditions

This area displayed land use maps along with descriptions of opportunities, issues and constraints for the proposed San Bernardino station areas of E Street, Mill Street, Tippecanoe Avenue, Waterman Avenue, and Mountain View Avenue. Many participants suggested that the proposed stations would bring positive redevelopment to these areas, which some consider to be under-developed or undesirable. A few emphasized the need to think creatively, link with nearby rail service, or to plan for increased density in these areas.

Redlands / Loma Linda Station Areas - Existing Conditions

This area displayed land use maps along with descriptions of opportunities, issues and constraints for the proposed Redlands / Loma Linda station areas of California Street, Downtown-Orange Street, University Avenue, Downtown-Oriental / Eureka, Alabama Street, and Downtown-Stuart / 7th Street. Again, most participants expressed support for the potential redevelopment opportunities. Some participants noted the importance of connecting to local medical centers and hospitals in Loma Linda.

Table 4-1. Task Force and Community Preference Survey Tabulations

		Task Force		Community Workshops						Total	
				San Bernardino		Redlands		Loma Linda			
	Station Area	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2
1	E Street (at San Bernardino Transcenter)	4	3	8	4	6	4	3	3	21	14
2	Mill	3	4	4	7	4	5	4	1	15	17
3	Tippecanoe	2	6	4	7	4	7	3	3	13	23
4	California	7	0	9	0	17	3	3	3	36	6
5	Alabama	4	4	2	7	5	13	2	3	13	27
6	Downtown Redlands 1st Choice										
	Orange	7	0	10	0	21	0	3	0	41	-
	Oriental / Eureka	0	0	0	0	3	0	2	0	5	-
	Stuart / 7th	0	0	0	0	0	0	0	0	0	-
7	University of Redlands	7	0	7	3	12	8	4	1	30	

Connections

At this display, maps outlined bicycle and transit connectivity to the proposed rail extension and station areas, as well as cross-sectional, conceptual drawings of right-of-way usages at station areas that could integrate train platforms, bicycle trails, pathways, and landscaping. Participants provided a range of comments such as the need for efficient transit connections, maximum right-of-way, buffer zones, frequent bus and train service, and more connections to Redlands, Moreno Valley, and Loma Linda.

Key Findings and Observations: References for Land Use and Linkage Alternatives

There were separate displays of land use maps and descriptions of station area plan alternatives for each proposed Redlands Rail station. Participants were asked to indicate in their comment books which alternative direction they preferred for each station, and also provide comments about positive and negative aspects of each alternative. Table 4-1 tabulates the preferences of the Task Force and those attending the community workshops

for each alternative. The text below describes written comments made in the preference survey.

E Street Station Area (at San Bernardino Transcenter site)

Alternative 1—Emphasis on mixed-use and housing opportunities
Preferred by 4 Task Force members and 17 community workshop participants. Some supported the mixed use design as a driver of revitalization for the station area. One participant suggested the alternative over-emphasizes residential, but still preferred it to the other alternative. Another encouraged endowing and securing the park and flood control feature. Yet another participant questioned the impact on crime.

Alternative 2—Emphasis on more intense employment-based development
Preferred by 3 Task Force members and 11 community workshop participants. Those who commented expressed concerns regarding increased traffic, excessive employment, and freeway-focused development.

Mill Street Station Area

Alternative 1—Housing and amenities maximized (station split platform north and south of Mill St.)
Preferred by 3 Task Force members and 12 community workshop participants. Those who commented provided a range of observations. Concerns included the heavy land requirement, possibly increasing opportunities for violence, and the split platform design. There was a positive comment about its holistic design. In this and Alternative 2, a participant suggested linking bikes to Santa Ana River Trail.

Alternative 2—Mixed-use adjacent to station and along Mill St. with employment emphasized in other areas (station located north of Mill St.)
Preferred by 4 Task Force members and 13 community workshop participants. Those who commented indicated their belief that this alternative could increase property values and rents due to high levels of employment. One participant noted that this was a non-holistic design.

Tippecanoe Station Area

Alternative 1— Mixed-use and housing north of railroad tracks adjacent to station (station west of Tippecanoe Avenue)
Preferred by 2 Task Force members and 11 workshop participants. One participant suggested that mixed use in this area may contradict locals' preferred quiet environment, while another participant expressed concern about locating such development in a flood zone. Another participant supported including a housing element at all station locations, while another suggested the location is ideal for restaurants and shops.

Alternative 2— Employment based development at station area (station east of Tippecanoe Avenue)
Preferred by 6 Task Force members and 17 workshop participants. Some expressed concerns similar to those expressed about the previous station, including the potential for over-emphasis on employment negatively affecting street traffic and property values. However, other participants suggested that emphasizing employment in this area is important, with one participant suggesting links to West Redlands and Loma Linda.

California Station Area

Alternative 1— Mixed-use at station and north and south of freeway (station and park and ride east of freeway)
Preferred by 7 Task Force members and 29 workshop participants. Some expressed support for including mixed use development to encourage transit use and discourage automobile use, including mitigating excessive parking in the area. Additionally, a few participants supported the proposed redevelopment of the Wal-Mart site with a mixed-use concept. Other suggestions included locations of park and ride lots, underpasses, sidewalk improvements, and housing.

Alternative 2 – Mixed-use south of the freeway only (station and park and ride on west side of freeway)
Preferred by 6 participants, not preferred by any Task Force member. Few provided specific feedback regarding this alternative other than questions or comments about the proposed location of the housing, park and ride lot, redevelopment of the Wal-Mart site, and concerns about too much constraining development.

Alabama Street Station Area

Alternative 1 – Emphasis on mixed-use
Preferred by 4 Task Force members and 9 workshop participants. Some suggested that the station is undesirable due to either small size of the city or impacts on open space. One participant suggested increasing the emphasis on housing.

Alternative 2 – Mixed-Use at Tri City and high density housing focused around new open space
Preferred by 4 Task Force members and 23 workshop participants. Those who commented on the alternative provided a range of feedback. Some participants suggested that the proposed housing would support transit in the area or provide low-income community members with an opportunity to purchase a home. Another participant noted that the alternative would change the character of the town, while another suggested that the proposal fits well with the current park. Another participant suggested extending the bike lane to Highland's Palm Avenue for bike connectivity.

Downtown Redlands Station Area

Among the three alternatives for the Downtown Redlands Station Area, participants noted their first and second choices for the preferred alternatives and provided comments for each.

Alternative 1 – Between Orange and Eureka
Preferred as a first choice by 7 Task Force members and 34 workshop participants, and as a second choice by 6 participants. Most who provided comments encouraged use of the existing historic train station. Others noted that the Downtown location is more central and close to activity centers. One participant encouraged student use of transit in this area.

Alternative 2 – Eureka/Oriental
Preferred as a first choice by 5 participants and as a second choice by 19 participants. One participant suggested that the alternative would benefit more areas.

University of Redlands Station Area

Alternative 1 – High density residential such as faculty housing near station (station adjacent to University)
Preferred by 7 Task Force members and 23 community workshop participants. One participant noted that the alternative promotes more automobile traffic to commercial areas. Another suggested using Orange Blossom Trail to link the University of Redlands with the downtown station.

Alternative 2 – Mixed-use near station (station adjacent to private property)
Preferred by 12 participants, not preferred by any Task Force member. Some noted that the University community would benefit from mixed-use development with access to more services. Another suggested that mixed-use development would provide a needed buffer between the rail line and private property. Another suggested providing light rail to the Downtown area.

This page intentionally left blank.

5

TRAVEL DEMAND FORECASTS

The travel demand forecasts for the Redlands Rail Corridor are used to estimate the ridership demand for the railway alignment in the corridor. The travel forecasts are estimated using a travel demand model that is calibrated to replicate existing travel demand in the study area.

For the Redlands Passenger Rail Station Area Plans, the model assumes a single transportation network and two land use alternatives. The two land use alternatives are designed to provide a range of estimates for the future transit demand in the Redlands Rail Corridor.

The transportation network modeled for the Station Area Plans assumes that the highway and transit systems in the San Bernardino Valley will be developed according to plans currently under development by SANBAG, Omnitrans, Metrolink, and other jurisdictions in the study area.

The land use alternatives include a Baseline Land Use Alternative and an Intensified Land Use Alternative. The Baseline Land Use Alternative assumes that development in the study area will progress on vacant land according to current planning documents. The Intensified Land Use Alternative assumes that growth in the study area will be concentrated around the station areas in the Redlands Rail Corridor, which will result in higher transit demand in the corridor.

The San Bernardino Valley Travel Model (SBVM) was developed for the purpose of creating travel demand forecasts of transit ridership in the San Bernardino Valley. These forecasts are used to estimate future transit ridership on various network alternatives and land use alternatives, and to assess the relative benefits of the alternatives.

The SBVM is similar in structure to the Southern California Association of Governments (SCAG) model, with additional detail added in the San Bernardino Valley. The SBVM is a focused model that was originally developed for use in Phase 1 of the E Street Corridor project. Since the focus area of the SBVM also includes the Redlands Rail Corridor, the SBVM was the logical choice to perform the transit ridership forecasts for the Redlands Rail project.

One major difference between the SBVM and SCAG models is that SBVM includes a more robust mode choice model that is better suited for testing the range of transit modes available in the San Bernardino Valley. Section 5.1 presents model specifications of various components of the SBVM.

One of the major requirements of the SBVM is that it be able to create future travel forecasts that are acceptable to FTA. Section 5.2 presents details of the steps taken to satisfy FTA's concerns.

As with any travel demand model, the SBVM model could not be used to create future year forecasts until it was demonstrated capable of replicating existing travel demand. Section 5.3 presents results from the base year (2000) validation of various elements of the SBVM.

The validated model was used to test the future ridership impacts of the transportation alternatives carried into the alternatives analysis phase. The future model runs use the Year 2030 as the horizon year. Section 5.4 presents summaries of the background assumptions used to define the Year 2030 baseline, definitions of the alternatives, and results of the ridership forecasts for the alternatives.

5.1 METHODOLOGY FOR TRAVEL MODEL DEVELOPMENT

Several different existing models were considered as the basis for the transit ridership forecasts for the detailed alternatives analysis. Unfortunately, all of the existing models had fatal flaws that prevented them from being fully acceptable for these purposes.

- The SCAG regional model covers all or parts of five counties in southern California and over 16 million residents. The existing SCAG model (Year 2000) does not have the level of detail required in the San Bernardino Valley, and it includes a mode choice model that is not robust enough.
- The updated SCAG model (Year 2004) is considered the preferred mode choice model for the SBVM but the SCAG update was not ready as of a predetermined target date (December 2004).
- The SCAG regional model is also the basis for numerous sub-regional models
    - The OCTAM model focuses on Orange County, and has a more robust mode choice model than SCAG, but without the detailed definition in the San Bernardino Valley.
    - The CTP model focuses on the San Bernardino County portion of the SCAG region, but without a mode choice component.
    - The East Valley Models (EVM) focuses on highway forecasts for the eastern half of the San Bernardino Valley, but without a mode choice component.

Based on consultation with FTA, it was decided that the best course of action to complete the alternatives analysis phase was to use the OCTAM mode choice model for the SBVM until the updated SCAG model is ready for application. The OCTAM mode choice model is more robust than the existing SCAG mode choice model because it contains additional premium modes. The OCTAM mode choice model has the added benefit that it has been used for previous New Starts analyses in Orange County.

The SBVM model combines elements of the above models to allow regional compatibility, transit forecasting, and a focused level of analysis in the SBV area, which is currently home to over 1.25 million residents and is growing rapidly. The SBVM model uses the basic structure of the SCAG model, a version of the OCTAM mode choice model customized for use in the San Bernardino Valley, and an increased level of definition based on the networks and zone systems found in the CTP and East Valley models. The SBVM model employs the traditional 4-step modeling process used in the SCAG model. Special features of the SBVM include:

- All person trips are modeled (including non-motorized);
- Auto-ownership is tied to transit accessibility;
- Person trip data is split into peak and off-peak trips before application of distribution models;
- Feed-back loops are used for highway and transit skims;
- Vehicle trip data is split into four time periods and converted to origin-destination format using time-of-day models ; and

- Transit trip data is assigned to peak (AM) and off-peak (midday) time periods in production-attraction format.

Zone System

The SBVM uses a zone system comprising 3,261 transportation analysis zones (TAZs) in the SCAG region. The development of the SBVM zone system was accomplished in two steps. First, 264 TAZs in the two regional statistical areas (RSAs) that comprise the San Bernardino Valley area were split into 1,365 TAZs, using zone boundaries defined in the CTP and East Valley models. Then, 1,047 SCAG TAZs in remote areas of Ventura, Los Angeles, and Riverside Counties were aggregated to the RSA level of detail, creating 16 TAZs in the SBVM zone system. The net result was to increase the number of zones in the SCAG region from 3,191 to 3,261. Table 5-1 displays a comparison of the number of TAZs in each of the five SCAG counties in the SCAG zone system and in the SBVM zone system. The zone splits and zone aggregations used to develop the SBVM zone system are displayed in graphics in Appendix 2-1.

Table 5-1: Transportation Analysis Zones in SCAG Counties

County	SCAG TAZs	SBVM TAZs
Los Angeles	1,721	910
Orange	549	549
Riverside	347	320
San Bernardino	375	1,476
Ventura	199	6
Total	3,191	3,261

Socioeconomic Data

The SBVM model uses the same socioeconomic input data used in the SCAG model, except that the data has been aggregated or split to fit into the SBVM zone system. Key socioeconomic data used in the SBVM include the following variables:

- Total population
- Resident population
- Workers
- Single-family households
- Multiple family households
- K-12 school enrollment
- College/university enrollment
- Retail employment
- Service employment
- Basic employment
- Median household income

Trip Purposes

Trips made for different purposes have been found to have different characteristics, such as average trip lengths and mode shares. Therefore, separate models are used to estimate the different trip purposes. The most popular trip purposes used in travel demand models are home-based work, home-based other, and non-home based.
The SBVM uses the same 13 trip purposes that are used in the SCAG models. These include six home-based work trip purposes, five home-based other trip purposes, and two non-home based trip purposes. These trip purposes are summarized below:

- Home-based work-direct
  - Low income (<$19,999 in 1989$)
  - Middle income ($20,000 - $49,999)
  - High income ($50,000 or more)
- Home-based work-strategic
  - Low income
  - Middle income
  - High income
- Home-based elementary & high school
- Home-based college & university

- Home-based shopping
- Home-based social-recreational
- Home-based other
- Work-based other
- Other-based other

Trip Generation

Trip generation is the process of estimating how many person trips are generated within each TAZ. The trip generation procedures used in the SBVM model are identical to the procedures used in the SCAG model. Trip generation models estimate both productions (the home end of trips) and attractions (the non-home end of trips). Finally, the productions and attractions are "balanced" so that the regional totals match for each trip purpose.

Trip productions are estimated for each TAZ using a cross-classification procedure. First, the households in each TAZ are stratified into household categories. For example, for home-based work trips the households are stratified into a matrix of household categories based on the number of persons in the household, the number of workers in the household, and the income level of the household. The cross-classification variables for the work and non-work trip purposes are summarized below.

- Home-based work & work-based other (3-way cross classification)
  - 6 household sizes (1, 2, 3, 4, 5, 6+)
  - 4 workers per household groups (0, 1, 2, 3+)
  - 3 income levels (low, middle, high)
- Home-based non-work & other-based other (2-way cross classification)
  - 6 household sizes (1, 2, 3, 4, 5, 6+)
  - 5 auto ownership levels (0, 1, 2, 3, 4+)

After households have been stratified, trip production rates are applied to each household category, and the resulting trips are aggregated in each TAZ for use in subsequent models.

Tables of trip production rates for the 13 trip purposes used in the SBVM are presented in Appendix 2-2.

Trip attractions are estimated by a set of linear equations that convert households, employees, and school enrollment to trip attractions. The trip attraction models for the 13 trip purposes used in both the SBVM and SCAG models are summarized in Appendix 2-3.

Transportation Networks

The SBVM model uses an integrated transportation network that includes mixed-flow and exclusive facilities for highway, truck and transit modes. The network structure is similar to the structure developed for the SCAG models, with some refinements designed to ease the analysis of trips that may be influenced by the transportation alternatives in the detailed analysis.

Highway Networks

The SBVM model uses separate networks for four different time periods:

- AM Peak - 6 to 9 AM
- Midday - 9 AM to 3 PM
- PM Peak - 3 to 7 PM
- Nighttime - 7 PM to 6 AM

The primary difference between the four networks is the highway capacity, which is a function of the number of hours of duration of each time period.

The links in the networks are coded with each of the modes that are available. The available highway modes include mixed flow links, shared ride HOV links (two or more persons), carpool HOV links (three or more persons), toll links, and three classes of truck links.

The highway networks are comprised of nodes and links that connect centroids that represent the 3,261 TAZs in the SCAG region. The Year 2000 highway network also includes 26 external stations that represent highway connections to areas outside of the SCAG region, and 122 park-and-ride stations that allow the model to simulate travel between the highway network and the integrated transit network.

The highway network comprises over 95,000 directional highway links. Each link is characterized by several attributes, including seven area types, ten facility types, the number of travel lanes, the link capacity, free-flow speed, and observed speed. The latter three attributes can be estimated for each link with the use of lookup tables, based on the area type, facility type, and number of lanes on the link. These lookup tables are displayed in Appendix 2-4.

The highway network includes attributes and modes that identify toll facilities and truck facilities. Toll facilities in the region are currently restricted to Orange County. Link attributes defining truck facilities serve two purposes. First, they allow the user to restrict or prohibit the use of links by certain classes of heavy duty trucks. Second, they allow the model assignment algorithm to assign truck trips separately from other modes, which allows the user to convert truck trips to Passenger Car Equivalents (PCEs).

Transit Networks

The SBVM model includes two transit networks integrated with the AM Peak period and Midday period highway networks. The AM Peak transit network is used to assign and model transit trips made in the peak periods, and the Midday transit network is used to assign and model transit trips made in the off-peak periods.

The transit networks are integrated with the highway networks so that mixed flow links can carry both highway and transit modes, and exclusive links can carry various transit modes. The transit networks also include auxiliary transit links that allow trips to access transit services and to transfer between transit routes. In all, the SBVM transit networks include 13 transit modes and eight auxiliary transit modes.

The transit networks include transit lines that are characterized by itineraries, stop locations, and headways. The AM Peak transit network includes over 1,000 transit lines in the region, including 35 Omnitrans routes, two Metrolink routes, and two other operators serving the San Bernardino Valley.

Highway and Transit Skims

One of the main objectives of the highway and transit networks is to allow an accurate and comparative representation of the travel times and costs between centroids by various modes of travel. The travel times and costs estimated by the model are commonly referred to as skims. The highway and transit skims are used as input to both the trip distribution and mode choice models.

Highway skims for both the peak and off-peak time periods are based on the travel time on the shortest time paths. The highway operating speeds are estimated using equilibrium assignment algorithms that adjust the operating speeds on the links as a function of the demand-capacity ratio for the link. In model application, the highway skims are based on feedback speeds resulting from three iterations of the four-step modeling procedure. The in-vehicle highway travel times are augmented with terminal times associated with the locations of the trip ends. The SBVM model calculates separate highway skims for both HOV trips and drive alone trips (which are restricted from using HOV links).

Transit skims comprise a combination of variables that have been found to affect both the choice of the transit mode and the path choice for transit options. These variables include the in-vehicle transit travel time, access time between centroids and transit stops, wait time, number of transfers, and transit fare. The in-vehicle travel times are estimated using different procedures for transit routes using mixed-flow and exclusive

facilities. For transit routes that operate on links that are coded as mixed flow facilities, the transit operating speeds are estimated as a function of the highway operating speed.

For exclusive transit links, the operating speeds are derived from published schedules. The SBVM model calculates separate transit skims for four sets of transit paths for both walk-access and drive-access paths. The four sets of transit paths are distinguished by the transit modes that are allowed for the trip, as follows:

- The *local bus* paths allow only transit modes defined as local;
- The *premium express bus* paths can use transit modes described as either local or express bus;
- The *premium LRT/BRT* paths can use any transit mode described as bus or LRT; and
- The *premium commuter rail* paths can use any transit mode.

Trip Distribution

The SBVM trip distribution models use a gravity model to distribute trips. These models use the same procedures and gamma functions similar to those developed for the SCAG trip distribution models. However, the gamma function coefficients are recalibrated specifically for use in the SBVM.

The input data to the trip distribution models include productions and attractions output from the trip generation models, and impedance data from highway and transit skims. Three different types of travel impedance are used for different types of trip distribution models. The six home-based work trip purposes use composite impedance logsums, which also serve as the denominator in the mode choice equations. The composite impedance logsums for the medium income and high income households include all travel modes, while the composite impedance logsums for the low income households exclude drive alone skims from the logsum calculation. The other seven trip purposes use impedances derived exclusively from highway travel times.

The distribution process creates 26 person trip tables, including both peak period and off-peak period trip tables for each of the 13 trip purposes estimated by the trip generation models. Following application of the trip distribution models, the 26 resulting trip tables are aggregated to 14 person trip tables, as summarized in Table 5-2.

Mode Choice

The SBVM mode choice model uses the basic structure developed for the OCTAM mode choice model. However the modal bias constants have been recalibrated specifically for use in the SBVM.

The mode choice model application is performed separately for the peak and off-peak time periods for five trip purposes (home-based work, home-based school, home-based other, work-based other, and other-based other).

Different model constants are used for households in the three income classes for home-based work and home-based other trips. The home-based work stratification of households by income class is output from the trip distribution models. The home-based other stratification of households by income class is estimated for each TAZ as a constant share of the total person trips.

The TAZ data is split into three walk access markets - short walk, long walk, and no transit - based on a GIS analysis of the relationship between the zone boundaries and the transit stop locations.

The regional modal bias constants were adjusted to match observed modal shares derived from regional household survey data. The modal bias constants were further refined for San Bernardino County to match data from transit boarding counts collected for Omnitrans and Metrolink in the Year 2002.

Table 5-2: Trip Purposes from Trip Generation and Trip Distribution Models

Trip Generation Models (26 Tables)	Trip Distribution Models (14 Tables)
Peak Period Home-Based Work Direct - Low Income	Peak Period Home-Based Work - Low Income
Peak Period Home-Based Work Strategic - Low Income	
Peak Period Home-Based Work Direct - Medium Income	Peak Period Home-Based Work - Medium Income
Peak Period Home-Based Work Strategic - Medium Income	
Peak Period College/University	
Peak Period Home-Based Work Direct - High Income	Peak Period Home-Based Work - High Income
Peak Period Home-Based Work Strategic - High Income	
Peak Period School (K-12)	Peak Period School (K-12)
Peak Period Home-Based Shopping	Peak Period Home-Based Other
Peak Period Home-Based Social-Recreational	
Peak Period Home-Based Other	
Peak Period Work-Based Other	Peak Period Work-Based Other
Peak Period Other-Based Other	Peak Period Other-Based Other
Off-Peak Period Home-Based Work Direct - Low Income	Off-Peak Period Home-Based Work - Low Income
Off-Peak Period Home-Based Work Strategic - Low Income	
Off-Peak Period Home-Based Work Direct - Medium Income	Off-Peak Period Home-Based Work - Medium Income
Off-Peak Period Home-Based Work Strategic - Medium Income	
Off-Peak Period College/University	
Off-Peak Period Home-Based Work Direct - High Income	Off-Peak Period Home-Based Work - High Income
Off-Peak Period Home-Based Work Strategic - High Income	
Off-Peak Period School (K-12)	Off-Peak Period School (K-12)
Off-Peak Period Home-Based Shopping	Off-Peak Period Home-Based Other
Off-Peak Period Home-Based Social-Recreational	
Off-Peak Period Home-Based Other	
Off-Peak Period Work-Based Other	Off-Peak Period Work-Based Other
Off-Peak Period Other-Based Other	Off-Peak Period Other-Based Other

Time-of-Day and Assignment Procedures

The procedures from the preceding three steps (trip generation, trip distribution, and mode choice) are used to create vehicle and transit trip tables in production-attraction format for peak and off-peak trips for five trip purposes.

The time-of-day factors are used to convert the vehicle trip tables from production-attraction format to origin-destination format for the four time periods (AM Peak, Midday, PM Peak, and Nighttime). These time-of-day factors are presented in Appendix 2-5. The resulting vehicle trip tables are then assigned to the highway networks using a multi-class assignment procedure for three auto modes (drive alone, two-person, and three-or-more person) and three truck modes (light-heavy vehicle, medium-heavy vehicle, and heavy-heavy vehicle).

The transit trip tables are assigned in production-attraction format to the AM Peak transit network (peak transit trips) and the midday transit network (off-peak transit trips). The transit trips are assigned separately to the four sets of transit paths before the assignment results are aggregated together.

5.2 TRAVEL DEMAND FORECASTING REQUIREMENTS AND FTA MODEL APPROVAL

The SBVM model includes several enhancements designed to improve the accuracy and reliability of the travel forecasts. Many of the enhancements are based on recommendations made by the Federal Transit Administration (FTA).

The FTA staff were consulted often during the model development process to identify issues of concern and to formulate improvements to the modeling procedures. Some of the issues raised by the FTA are discussed in this section.

Mode Choice Model

The FTA had expressed a desire to use the mode choice model from the latest update of the SCAG model. However, that update was not completed in time for the detailed analysis of the alternatives. The next best choice, as recommended by FTA, was the OCTAM mode choice model. The OCTAM model was then recalibrated for use in the SBVM model. The resulting model has several features that make it preferable to the existing SCAG mode choice model, including:

- More premium modes in the transit nests;
- Value of time as a function of the household income;
- Composite impedance used as a feedback to trip distribution, with low income impedance estimated based on shared ride and transit skims only;
- Walk access markets for transit trips.

Mode Choice Bias Constants

The SBVM mode choice model calibration includes modal bias constants calibrated for the SCAG region, with county specific constants calibrated for transit mode shares observed in San Bernardino. The bias constants calibrated for the SBVM model were analyzed for reasonableness, and the constants applied in San Bernardino were adjusted to prevent the model from benefiting or punishing certain modes.

Following an initial presentation of the model methodology and validation results, FTA expressed concern in two basic areas: the data sources for the data used in the validation of the trip distribution and mode choice models; and the application of modal bias constants. FTA asked for further analysis using additional validation data. They also asked for sensitivity tests of the impacts of the modal bias constants.

After a follow-up presentation where these concerns were addressed, FTA stated that they were generally satisfied with the other aspects of the model validation. They agreed that the transit assignment results demonstrated a reasonable validation to the observed transit ridership in the Corridor, and that they recommended that we use the calibrated model to proceed with model application for the No Build and TSM Alternatives. They added that they would continue to study the issue of the application and magnitude of the bias constant to be applied for the BRT mode for the Build Alternatives.

On July 18, FTA announced that it was now their policy that they would not accept the use of mode specific bias constants in order to level the playing field between new start projects. In September we found that FTA was allowing the use of modal bias constants equivalent to 2-3 minutes of travel time savings for BRT/LRT modes. Accordingly, the forecasts presented in this report apply a small time benefit of 2.5 minutes for BRT/LRT modes in the SBVM models. This constant has a very minor effect on the ridership forecasts.

5.3 BASE YEAR MODEL VALIDATION

This section documents the results of the Base Year Model Validation process for the SBVM Transportation Model. Model validation is defined as the process by which base year

model results are compared to "known" data such as traffic counts and transit ridership data. The Base Year Model Validation process ensures that the SBVM Transportation Model accurately predicts traffic volumes and transit usage in the Base Year 2000.

The model validation process for the SBVM Transportation Model follows the validation process for the SCAG Transportation Model through the four-step modeling process, beginning with trip generation and preceding through trip distribution, mode choice and assignment.

Trip Generation Models

The results of the trip generation models are summarized in Table 5-3. This table shows that the SBVM trip generation models produce over 54,000,000 total person trips in the SCAG region, and over 4,000,000 trips in the San Bernardino Valley.

Table 5-3: Trip Generation Summary - SBVM - Daily Trips

Purpose	Income	SCAG Region		San Bernardino Valley	
		Trips	Percent	Trips	Percent
HBW-Direct	Low	1,131,800		92,100	
HBW-Direct	Medium	3,104,100		253,500	
HBW-Direct	High	3,649,400		237,500	
HBW-Strategic	Low	151,400		12,400	
HBW-Strategic	Medium	473,400		42,600	
HBW-Strategic	High	543,800		37,900	
Total Home Based Work		9,053,900	17%	676,100	16%
Home Based School		5,211,300	10%	466,800	11%
Home Based University		1,756,400	3%	145,500	3%
Home Based Shopping		4,870,800	9%	355,900	9%
Home Based Social-Rec		5,434,700	10%	414,200	10%
Home Based Other		10,628,900	20%	795,500	19%
Work Based Other		6,016,200	11%	427,800	10%
Other Based Other		11,460,900	21%	905,100	22%
Total Person Trips		54,433,100		4,186,900	
Total Resident Population		16,120,700		1,256,500	
Trips per Person per Day		3.38		3.33	

Trip Distribution Models

The Year 2000 SBVM trip distribution models estimated inter-county travel patterns consistent with validation of the Year 2000 SCAG model. Table 5-4 displays inter-county trip distribution results for home-based work and university trips, and Table 5-4 displays trip distribution results for total trips.

The SBVM model estimated that 66 percent of the home-based work and university trips originating in San Bernardino County also had destinations within San Bernardino County. The most popular inter-county destination for San Bernardino workers is Los Angeles County, which attracts over 17 percent of home-based work and university trips.

The SBVM model estimated that over 83 percent of the total trips originating in San Bernardino County also had destinations within San Bernardino County.

Table 5-4: Trip Distribution Summary - County-County HBW and Total Daily Trips						
County	**Los Angeles**	**Orange**	**Riverside**	**San Bernardino**	**Ventura**	**Total**
Home-Based Work (plus University) Trip Distribution - Daily						
Los Angeles	5,754,600	312,800	12,400	63,400	103,200	6,246,400
Orange	358,200	1,670,300	19,400	18,300	600	2,066,800
Riverside	52,000	121,200	615,200	125,900	100	914,400
San Bernardino	181,200	67,200	103,400	683,200	400	1,035,400
Ventura	170,700	1,200	100	300	375,200	547,500
Total	**6,516,700**	**2,172,700**	**750,500**	**891,100**	**479,500**	**10,810,500**
Total Person Trip Distribution - Daily						
County	**Los Angeles**	**Orange**	**Riverside**	**San Bernardino**	**Ventura**	**Total**
Los Angeles	29,831,100	954,100	49,800	305,100	186,600	31,326,700
Orange	934,000	9,243,800	66,800	56,200	900	10,301,700
Riverside	87,500	169,700	4,133,100	355,100	100	4,745,500
San Bernardino	391,600	108,000	361,100	4,379,300	500	5,240,500
Ventura	482,900	3,400	200	800	2,331,400	2,818,700
Total	**31,727,100**	**10,479,000**	**4,611,000**	**5,096,500**	**2,519,500**	**54,433,100**

Mode Choice Models

Table 5-5 presents an overview of the home-based work mode choice modeling results for the Year 2000 model validation run. This table shows a comparison of the observed an estimated mode shares for both the SCAG region as a whole and San Bernardino County.

Table 5-6 presents a summary of the observed and modeled mode shares, by trip purpose, for both the SCAG region and San Bernardino County.

Assignment Models

The SBVM transit assignment models are validated to different targets for the overall region and for trips in the San Bernardino Valley. The validation targets for regional transit trips are derived from the SCAG household survey, and the primary validation targets are the number and shares of transit trips made by the different transit modes.

For transit trips in the San Bernardino Valley, the validation targets are supplemented by data from the Omnitrans bus survey, which includes ridership characteristics, transfer rates and average trip lengths. The primary validation targets in the San Bernardino Valley are derived from boarding counts from Omnitrans and Metrolink services.

The results of the transit assignment validation are summarized in Table 5-7, which demonstrates a good validation of the transit trips for the San Bernardino Valley.

Table 5-5: Mode Choice Validation Summary for Home-Based Work Trips

Mode	SCAG Region		San Bernardino County	
	Observed	**Modeled**	**Observed**	**Modeled**
	Shares	Shares	Shares	Shares
Drive Alone	71.8%	71.7%	78.3%	74.9%
Carpool - 2 Person	10.5%	10.5%	11.3%	12.5%
Carpool - 3+ Person	3.8%	3.8%	3.1%	5.0%
Auto Passenger	2.8%	2.8%	2.5%	3.4%
Total transit	7.4%	7.4%	3.2%	2.1%
Non-motorized	3.7%	3.8%	1.7%	2.1%
Transit by Access Mode				
Walk Access	89.1%	89.5%	65.3%	72.5%
Drive Access	10.9%	10.5%	34.7%	27.5%
Transit by Sub-Mode				
Local Bus	68.0%	67.6%	57.1%	66.3%
Express Bus	9.1%	9.4%	0.0%	7.4%
LRT/BRT	17.6%	17.8%	0.0%	0.1%
Commuter Rail	5.3%	5.2%	42.9%	26.2%

Table 5-6: Mode Choice Validation Summary by Trip Purpose

Purpose	Regional		San Bernardino	
	Observed	**Modeled**	**Observed**	**Modeled**
Home Based Work	7.38%	7.36%	3.21%	2.02%
Home Based School	2.87%	2.85%	4.22%	2.83%
Home Based Other	1.95%	1.93%	1.31%	1.13%
Other Based Other	0.54%	0.53%	0.24%	0.57%
Work Based Other	0.98%	0.97%	0.97%	0.80%
Total	**2.71%**	**2.69%**	**1.50%**	**1.24%**

Table 5-7: Mode Choice Validation Summary by Trip Purpose

Variable	Transit Survey Data		Model Results
	Household	On-board	Validation
Local Transit Trips	58,700	43,000	52,300
Premium Transit Trips	10,200	6,500	7,300
Total Linked Trips	68,900	49,500	59,600
Omnitrans Boardings	N/A	53,300	72,200
Metrolink Boardings	N/A	7,000	5,200
Total Boardings	N/A	60,300	77,400
Boardings per Trip	N/A	1.22	1.30
Passenger Miles on Bus	N/A	253,500	242,800
Average Trip Length on Bus	N/A	4.76	3.36

5.4 HORIZON YEAR 2030 TRAVEL DEMAND FORECASTS

This section describes the results of the transit assignments for the two land use scenarios – SANBAG Baseline and Intensified Land Use.

Background Assumptions

Both of the model runs for the horizon year (2030) model runs include the same background assumptions. This is done so that the travel demand forecast results isolate the impacts of the land use scenarios and ignore the incremental impacts of other factors.

For the purposes of the Redlands Passenger Rail Station Area Plans, both model runs are based on a single horizon year (2030), a single highway network, and a single transit network. The model runs use two land use alternatives for the horizon year (2030). The two land use alternatives are designed to provide a range of estimates for the future transit demand in the Redlands Rail Corridor.

Socioeconomic Data

The land use alternatives include a Baseline Land Use Alternative and an Intensified Land Use Alternative. The Baseline Land Use Alternative assumes that development in the study area will progress on vacant land according to current planning documents. The Intensified Land Use Alternative assumes that growth in the study area will be concentrated around the station areas in the Redlands Rail Corridor, which will result in higher transit demand in the corridor.

The background socioeconomic data used in the travel demand forecasts is based on the Year 2030 SCAG data for most of the five-county SCAG region. In the San Bernardino Valley, however, the SCAG data has been redistributed by SANBAG to be more consistent with the availability of vacant land for potential future development.

Detailed analysis of the SCAG data showed that population and employment growth forecasts for some areas of the San Bernardino Valley were applied using constant growth rates. For example, all SCAG TAZs within the City of San Bernardino had the same growth rates for residential data and the same growth rates for employment data. The horizon year (2030) population and employment forecasts used in the detailed analysis are displayed graphically in Figures

5-1, 5-2, 5-3 and 5-4. Figure 5-1 displays the forecast population density for the SBVM TAZs within and adjacent to the Redlands Rail Corridor in the Baseline Land Use Alternative. Figure 5-2 displays the forecast population density for those same zones in the Intensified Land Use Alternative.

Figure 5-3 displays the employment density for those zones in the Baseline Land Use Alternative, and Figure 5-4 displays the forecast employment density in the Intensified Land Use Alternative.

Highway Networks

The horizon year transportation networks are based on the SCAG Baseline networks, plus highway improvements that are funded by the extension of San Bernardino County Measure I. The networks also assume that the construction of Evans Street will be completed from Redlands Boulevard south to Barton Road in Loma Linda.

The highway improvements included in the highway networks are summarized in Appendix 2-6.

Transit Network

The peak period and off-peak period transit networks used for the detailed analysis include over 1,000 regional transit routes in the SCAG Baseline networks.

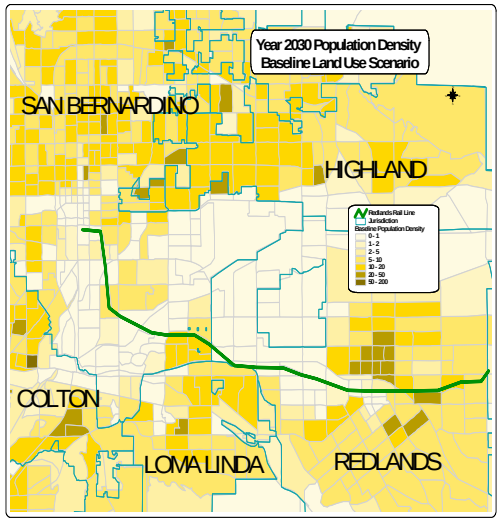


Figure 5-1: Population Density in Redlands Rail Corridor – Baseline Land Use Scenario

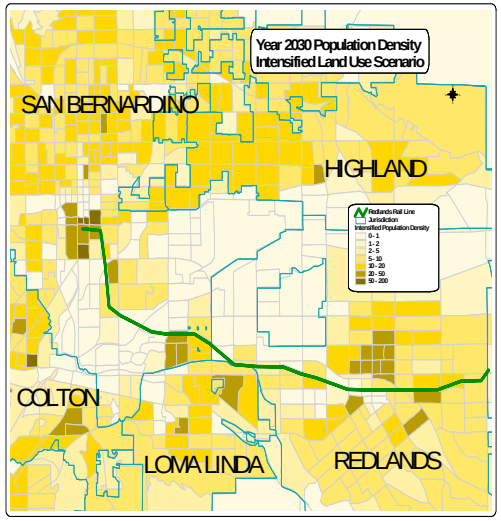


Figure 5-2: Population Density in Redlands Rail Corridor – Intensified Land Use Scenario

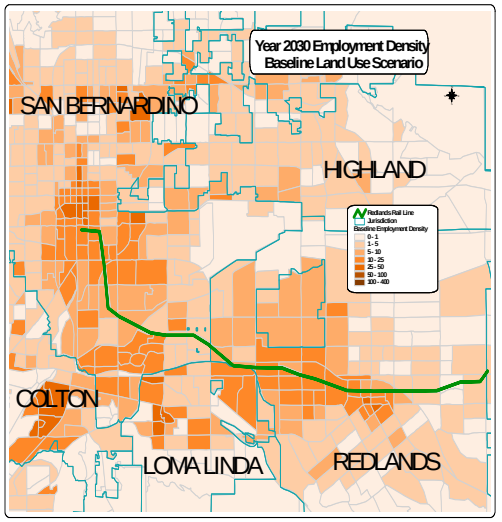


Figure 5-3: Employment Density in Redlands Rail Corridor – Baseline Land Use Scenario

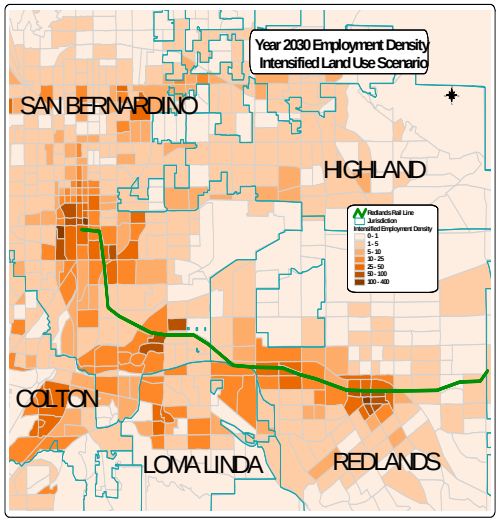


Figure 5-4: Employment Density in Redlands Rail Corridor – Intensified Land Use Scenario

Transit routes serving the San Bernardino Valley, including Omnitrans, Metrolink and other services, were coded to a greater level of detail than routes in the rest of the region.

The transit networks include planned or trend line service enhancements as defined in local service plans for Omnitrans, the Southern California Regional Rail Authority (Metrolink), and the existing level of service of other operators in the area.

The transit networks include the proposed Redlands Rail Line plus supporting shuttles, including a Loma Linda circulator service. All of these services are assumed to operate at 7½ minute headways in the model runs for the Redlands Passenger Rail Station Area Plans. Alignments of these transit services are displayed in Figure 5-5.

The transit networks also include a north-south oriented Bus Rapid Transit (BRT) line that roughly follows the alignment of the existing Omnitrans Route 2. The transit networks include both Route 2 service at 20 minute headways and the premium, sbX service operating at 5 minute headways.

The higher service levels associated with the Omnitrans Short Range Transit Plan's Up to Design Guidelines Scenario are included in the transit networks. Several Omnitrans routes are coded with minor deviations to serve new transit stations on the Redlands Rail and Omnitrans BRT alignments. The most significant changes to the Omnitrans routes are on Routes 8 and 15.

- Route 8, which currently runs from Downtown San Bernardino to Yucaipa, via Downtown Redlands, is shortened to eliminate the portion of the route between San Bernardino and Redlands. The portion of Route 8 that currently operates on Third Street and Tippecanoe Avenue is replaced by Feeder Route 1 in the Redlands Rail transit networks.
- Route 15 is modified to eliminate the detour that is currently operated on San Bernardino Avenue, Alabama Street, and Lugonia Avenue. This area is served by Feeder Route 3 in the Redlands Rail transit networks.

Other changes in transit operations in the study area include: a new San Bernardino Transcenter at Rialto Avenue and E Street; a circulator service for California State University-San Bernardino; and new regional transit services operated by the Victor Valley Transit Authority and Orange County Transit Authority.

All of the transit routes that serve the Redlands Rail Corridor are listed in Appendix 2-7. This appendix lists the existing headways and the Year 2030 headways that are assumed for the Redlands Rail model runs.

Special Generator and Visitor Trips

A small portion of the potential demand for transit in the Redlands Rail Corridor will come from trips that are not estimated in the four-step modeling process. These additional trips include trips made by visitors to the region and trips destined for special events that are not made on a daily basis. A detailed analysis was conducted to identify and quantify these potential trips.

Table 5-8 presents a list of attractions and events within the Redlands Rail Corridor that have the potential to attract a significant number of transit trips to the Corridor. Special care was taken to avoid double counting trips that would have been generated by the standard modeling procedures.

This table includes the number of annual visits to each of these attractions or events, and the estimated number of additional transit trips that could be associated with these sites annually. These annual estimates were converted to daily transit riders. Eventually, these daily trip ends were used to amend the ridership forecasts along the transit alignments. A total of **540 daily transit trip ends (270 transit trips)** were identified in this process. Since these trip ends are not generated by the four-step modeling process, they are not included in the remainder of the ridership forecasts in this document. Eventually, these daily trip ends can be used

to amend the ridership forecasts along the Redlands Rail alignment.

Ridership Forecasts

Transit ridership can be reported as either linked trips or unlinked trips.

Linked trips are trips made for a purpose from an origin point to a destination point. Linked transit trips can include the use of more than one transit vehicle. Unlinked trips are associated with the in-vehicle portion of transit travel on individual transit vehicles.

In general, a linked transit trip with one transfer will include two unlinked transit trips. Linked trips are used to compare the total number of trips, and new trips, associated with a transit alternative. Unlinked trips are used to describe the relative amount of activity on transit routes in a transit alternative.

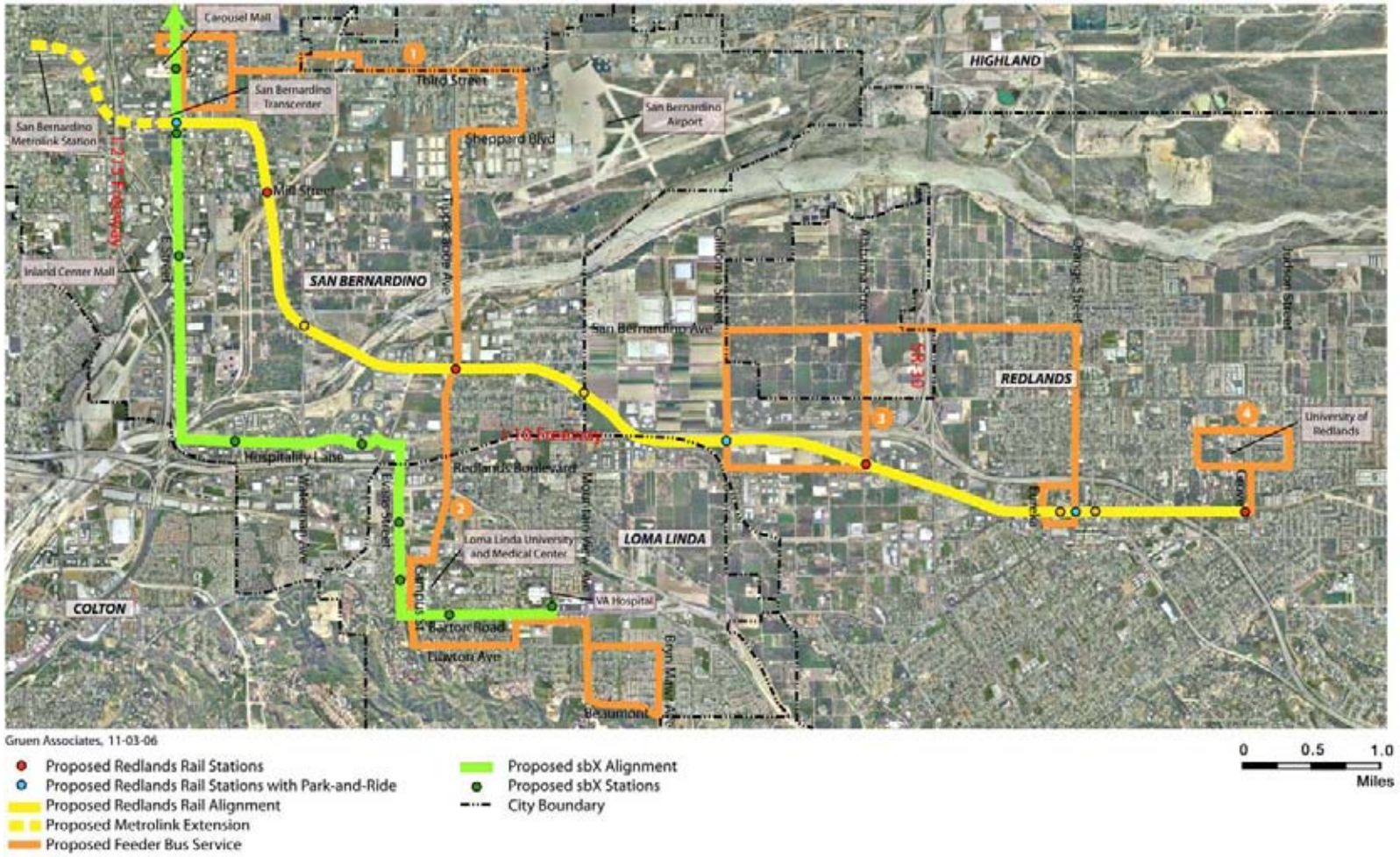


Figure 5-5: Redlands Rail Alignment and Feeder Bus Routes

Table 5-8: Annual Special Event and Visitor Trips in Redlands Rail Corridor

Generator	Annual Attendance	Annual Transit Trips	Daily Transit Trips
Downtown San Bernardino			
Convention Center	100,000	10,000	30
Route 66 Rendezvous	500,000	50,000	160
Hotel Rooms	90,000	9,000	30
Arrowhead Credit Union Park	350,000	35,000	110
Orange Show Fairgrounds			
National Orange Show Festival	100,000	10,000	30
Citrus Fair Festival	50,000	5,000	20
Other Events	50,000	5,000	20
San Bernardino County Museum	50,000	5,000	20
Redlands Market Night	100,000	10,000	30
Redlands Bowl	125,000	12,500	40
Redlands University	150,000	15,000	50
All Generators	1,665,000	166,500	540

The total number of linked transit trips associated with each of the land use scenarios is summarized in Table 5-9. This table shows that the Intensified Land Use Scenario is estimated to attract 5,400 more transit trips in San Bernardino County than the Baseline Land Use Scenario. This increase in transit ridership would be the direct result of moving the population and employment of the study area closer to the stations along the Redlands Rail Corridor.

Table 5-9: Year 2030 Linked Transit Trips by Land Use Scenario

	Land Use Scenario	
	Baseline	Intensified
San Bernardino County	113,000	118,400
New Trips - vs. Baseline	-	5,400
East San Bernardino Valley	58,700	63,500
New Trips - vs. Baseline	-	4,800

The daily unlinked transit ridership forecasts for the land use scenarios are summarized in Table 5-10. This table displays the number of transit riders forecast to use ten transit lines that serve the Redlands Rail Corridor in the horizon year transit network. This table shows that the Redlands Rail Line is expected to experience the greatest ridership benefit from the reallocation of population and employment characterized by the Intensified Land Use Scenario, with 4,000 additional daily riders. This line accounts for approximately 75 percent of the additional boardings for the entire system.

Other performance characteristics for the Redlands Rail line are displayed in Table 5-11. This table shows that the Redlands Rail line will be approximately 40 percent more productive under the Intensified Land Use Scenario.

Route Profiles

Route profiles are graphics used as a visual aid to display the transit ridership along a transit alignment. The Redlands Rail route profiles for the two land use scenarios are displayed in Figure 5-6. This figure shows that the route profiles for the land use scenarios are similar, except that the magnitude of ridership is much higher under the Intensified Land Use Scenario.

Table 5-10: Daily Ridership Statistics for Transit Routes Serving Redlands Rail Corridor

Operator	Transit Route	Land Use Scenario		Difference
		Baseline	Intensified	
SANBAG	Redlands Rail *	7,410	11,410	4,000
Omnitrans	Redlands Feeder 1	2,660	2,540	-120
Omnitrans	Redlands Feeder 2	1,600	1,930	330
Omnitrans	Redlands Feeder 3	2,260	1,870	-390
Omnitrans	Redlands Feeder 4	340	360	20
Omnitrans	Route 8	870	990	120
Omnitrans	Route 9	3,480	3,740	260
Omnitrans	Route 19	9,710	10,350	640
Metrolink	San Bernardino	13,530	13,830	300
Metrolink	Inland Empire	23,840	23,970	130

* The Redlands Rail line is subject to an additional 270 riders on an average weekday as the result of trips associated with special generators and visitor trips. These additional trips would apply to both land use scenarios.

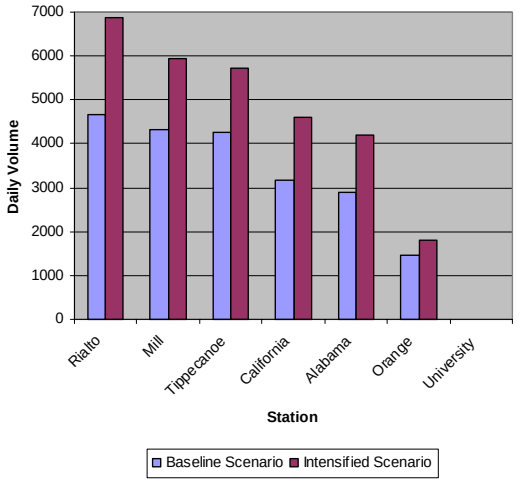


Figure 5-6: Route Profiles (Horizon Year 2030 Land Use Scenarios)

Table 5-11: Daily Ridership Characteristics for Redland Rail Route

Measure	Land Use Scenario	
	Baseline	Intensified
Travel Time in Minutes	38	38
Vehicles Required	6	6
Forecast Riders	7,410	11,410
Passenger Miles	32,400	45,100
Passenger Hours	1,130	1,600

The peak ridership points for both scenarios are located at the western end of the corridor, between the E Street and Mill Street stations.

Activity at Stations

The total daily station activity forecasts for the Redlands Rail line are summarized in Table 5-12. This table shows the boarding and alighting forecasts for the stations along the Redland Rail alignment. The table displays the access and egress forecasts in production-attraction format, where the "home-end" of trips are at the access end of trips, and the "work-end" of trips are at the egress end.

This data shows that the E Street station will be the busiest station in the system in both land use scenarios. All stations are forecast to benefit from the Intensified Land Use Scenario, with increases of between 25 percent and 125 percent in total access volumes.

Activity at transit stations by modes of access and egress is summarized in Table 5-13. This table shows that in the Baseline Land Use Scenario, 44 percent of the Redlands Rail trips are expected to use another transit route to access the system, and 38 percent transfer to another route when they exit the system.

In the Intensified Land Use Scenario, these transfer rates are reduced to 38 percent accessing the system and 23 percent exiting the system. The majority of the additional ridership attracted to the Redland Rail line in the Intensified Land Use Scenario uses the walk mode, as a result of the large increase in the number of residents and employees within walking distance of the stations.

Drive access to stations with park-and-ride lots is summarized in Table 5-14. This table shows the horizon year demand for parking spaces at the park-and-ride lots for the Redland Rail transit line. Under the Baseline Land Use Scenario 670 parking spaces are required to serve the drive access demand at the three Redlands Rail stations that are planned to include park-and-ride lots. The demand for parking spaces increases to 860 parking spaces in the Intensified Land Use Scenario. More than half of the parking demand in both scenarios is at the California Street station.

Table 5-12: Station Activity by Land Use Scenario

Station	Baseline Land Use Scenario			Intensified Land Use Scenario		
	Access	**Egress**	**Total**	**Access**	**Egress**	**Total**
E Street	2,220	2,450	4,670	3880	2990	6,870
Mill	220	690	910	640	1430	2,070
Tippecanoe	460	780	1,240	770	1630	2,400
California	1,380	1,190	2,570	1980	1460	3,440
Alabama	320	960	1,280	600	1420	2,020
Orange	1,980	720	2,700	2410	1810	4,220
University	830	620	1,450	1130	670	1,800

Table 5-13: Modes of Access and Egress at Redlands Rail Stations

Land Use Scenario	Access to Redlands Rail by Mode				Egress from Redlands Rail by Mode		
	Walk	Drive	Transfer	Total	Walk	Transfer	Total
Baseline	2,480 33%	1,690 23%	3,240 44%	7,410	4,630 62%	2,780 38%	7,410
Intensified	4,880 43%	2,150 19%	4,380 38%	11,410	8,750 77%	2,660 23%	11,410

Table 5-14: Drive Access and Parking Demand at Stations

Station	Drive Access to Stations Land Use Scenario		Parking Spaces Land Use Scenario	
	Baseline	**Intensified**	**Baseline**	**Intensified**
E Street	110	220	40	90
California Street	920	1,190	370	480
Orange Street	660	740	260	290
Total	1,690	2,150	670	860

6

SAN BERNARDINO TRANSCENTER STATION AREA PLAN

The E Street Redlands Rail Passenger Station, the westerly terminal station, would be located at the San Bernardino Transcenter at E Street and Rialto Avenue in the City of San Bernardino. Metrolink service is planned to be extended to the Transcenter to interface with the Redlands Passenger Rail service, and the planned bus rapid transit system (sbX) along E Street which would also have a station at the Transcenter. Buses currently utilizing the Downtown Transit Mall on 4th Street would be rerouted to the Transcenter site. The San Bernardino Transcenter ½ mile station area is located entirely in the City of San Bernardino.

6.1 BACKGROUND AND PLANNING CONTEXT

Existing Land Uses and Demographics

The acreage of existing land uses within ½ mile of the station area is shown in Table 6-1. The proposed San Bernardino Transcenter site, located at the southwest corner of E Street and Rialto Avenue is currently vacant (Figure 6-1). The majority of the land use within ½ mile of the station is commercial and industrial uses. Within a half mile and to the north of the station site are the Carousel Mall, the San Bernardino City Hall, the Clarion Hotel, and other downtown uses. There are older industrial areas, a motel, restaurants, and the Arrowhead Credit Union Park within ¼ mile of the station. Only 27 acres are devoted to residential uses at an average density of approximately 25 units/ acre.

Table 6-1: Existing Land Uses within ½ mile of the San Bernardino Transcenter (E Street) Station

Land Use	Acres
Commercial	230
Industrial	102
Low Density Residential	17
Medium-High Density Residential	10
Office	32
Open Space and Recreation	7
Public Facilities	24
Transportation and Utilities	26
Vacant	45
Grand Total	492

Source: SANBAG, Gruen Associates (2003)
Note: Station areas are 1/2 mile around each station location, with overlapping station areas being apportioned equally between individual stations.

The existing railroad crossing on E Street south of Rialto Avenue

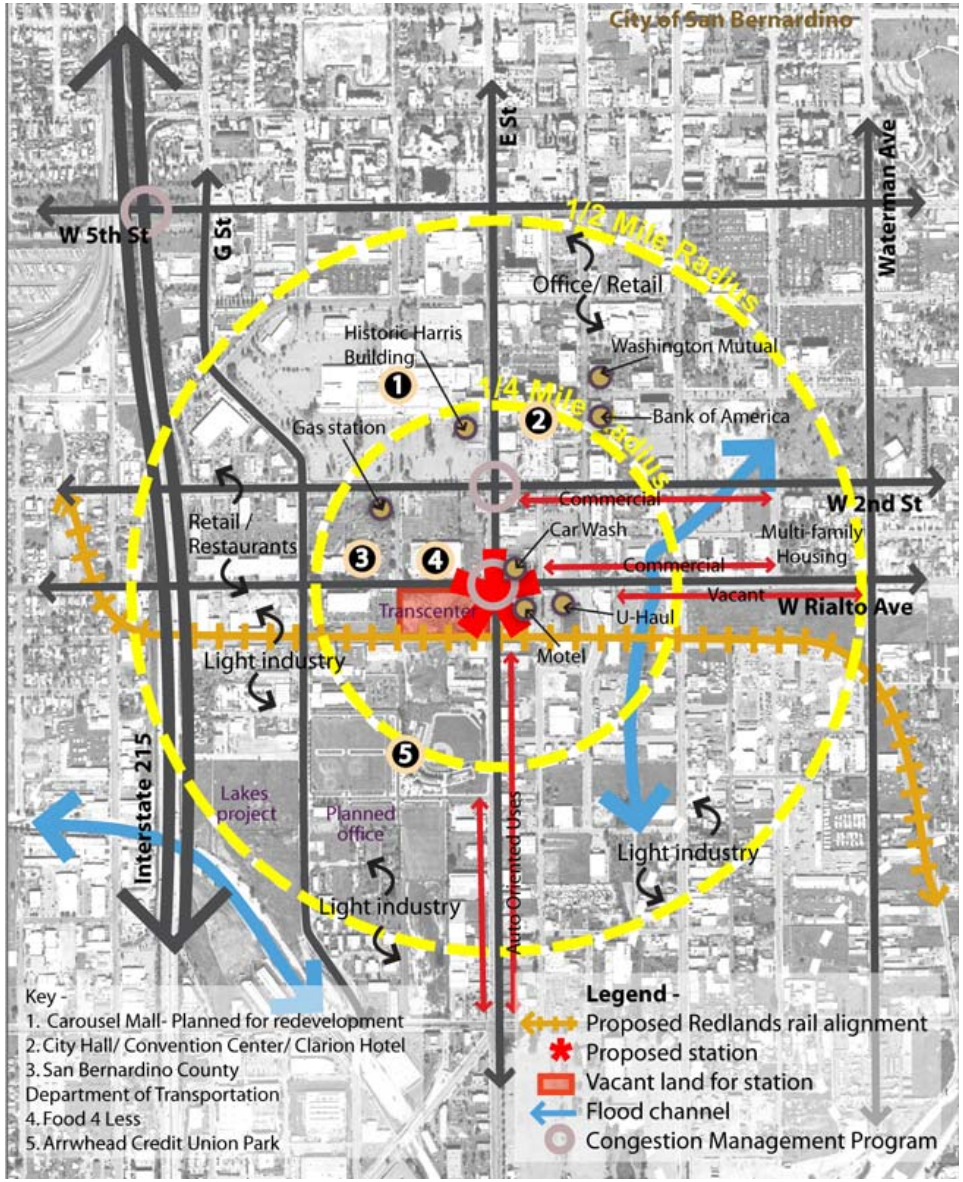


Figure 6-1: Existing Conditions Analysis at San Bernardino Transcenter Site

Socio-economics within 1/2 mile of the station are shown in Table 6-2:

Table 6-2: Socio-economics within ½ mile of the E Street Station (Census 2000)

Population	Total Population	1,656
	Under 18	524
	Over 65	213
	% under 18, over 65	44%
Housing Units	Total Housing Units	662
	0-Vehicle	258
	%0Vehicle	39%
Households	Total Households	561
	Below Poverty	206
	% Below Poverty	37%
Workers 16 years and over	Total Employment	404
	Using Public Transit	26
	% Using Public Transit	7%

General Architectural and Landscape Character

The San Bernardino downtown area along E Street has a number of mid-rise distinctive buildings including the historic Harris Building and the City Hall, which won a national American Institute of Architects Award. The Clarion Hotel, the Convention Center and the Carousel Mall are all interconnected through a series of open and landscaped public spaces and plazas. The new Caltrans building and the

Superior Courts are other significant buildings in the area. Portions of E Street and D Street in downtown are tree-lined and have pedestrian amenities to make walking more pleasant. Directly around the station area, the character changes to primarily one- and two-story older industrial buildings and vacant land with few pedestrian amenities or landscaping.

Accessibility to Each Station Area

Vehicular accessibility is excellent to the station from Interstate 215 along west 2nd Street and along major arterials including G Street, 2nd Street, E Street, and Waterman Avenue. Two intersections, E Street with Rialto Avenue and 2nd Street are under the Congestion Management Program (CMP) of San Bernardino County (The CMP was originally adopted in 1992 and the latest revision update was prepared in 2003. The CMP defines a network of state highways and arterials, level of service standards and related procedures, and provides technical justification for the approach). The E Street station located at the planned Transcenter site will interconnect with Metrolink, most Omnitrans bus lines, and the planned sbX bus rapid transit along E Street. Current pedestrian linkages to the proposed station would be along the sidewalks of major streets such as E Street and Rialto Avenue as well as F Street.

Intersection of E Street and Rialto Avenue looking towards the vacant Transcenter site


Building on E Street adjacent to the Carousel Mall


Streetscape in downtown


City hall plaza in downtown

E Street south of Rialto Avenue with older retail and industrial uses


Large surface parking lots typical of the station area

6.2
CITY PLANS AND POLICIES

San Bernardino General Plan

The City of San Bernardino adopted an update of its General Plan in November 2005. The land use map and the station area is shown in Figure in 3-2.

- Land Use
  - The southwest quadrant of the ½ mile ring which includes the Transcenter site is designated as Central City South-1 (CCS-1). This designation allows for local and regional serving retail and service uses, and a maximum intensity of 1.0 FAR.
  - The area to the north of 2nd Street including the Carousel Mall, San Bernardino City Hall, Court Street Square and the Clarion Hotel is designated Commercial Regional-2 (CR-2) which permits a mixture of regional serving retail, service, outdoor dining, entertainment, cultural, and residential uses that enhance the downtown area as the functional and symbolic center of the City of San Bernardino. Non-residential intensity of 3.0 FAR (4.0 FAR for a vertical mixed use project), and residential density of 54 units per acre is allowed in the CR-2 designation.
  - The area along D Street, south of Rialto Avenue is designated for light industrial uses (IL).
- Strategic Area
  - Approximately three-quarters of the area within ½ mile of the San Bernardino Transcenter station is located within the Downtown Strategic Area. Mixed-use projects, pedestrian amenities and pedestrian-active retail uses are envisioned for this area.
- Circulation/Enhancements
  - E Street and 2nd Street are designated for Corridor Enhancement in the General Plan.
  - A regional multi-purpose trail is planned along Lytle Creek to serve bicycle and pedestrian users, and to provide regional connections.

Redevelopment Plan

- The majority of the area within ½ mile of the station is part of the Central City Projects Redevelopment Area. Other redevelopment areas within ½ mile of the station include the Central City West and Mount Vernon Corridor.

Other Plans and Studies

- The planned “South Lakes” project is located off of G Street in the southwestern quadrant of the station area. The South Lakes project is envisioned as 450,000 square feet of office space and 31,500 square feet of retail with a 5-acre wetland/water body.
- San Bernardino Transcenter Project Site Selection- Final Report was completed by Omnitrans on April 12, 2006. This study recommends that the Transcenter include an approximately 11-acre site on E Street with approximately 450 ft frontage south of the railroad tracks on Rialto Avenue. At the time the report was prepared, the program included 28 bus bays, 4 layover bus bays, 83,000 SF of retail/office development and associated parking. No park and ride was included. The City has begun the process for working with consultants and developers to refine the program and design for a mixed-use project on this site.
- Working with the City’s Economic Development Agency, a developer has prepared a major mixed-use village on the Carousel Mall site. An early scheme contained residential units in addition to 700,000 sq ft of office space and 120,000 sq ft of retail. The developer and the city are continuing to refine the project.
- A 2% Compass Plan by SCAG for demonstration projects for TODs in downtown is under way. The plan will include TODs near the San Bernardino Transcenter.
- Arrowhead Credit Union is planning a major office development for 440 employees near the Arrowhead Credit Union Stadium.

- Bounded by D Street, Court Street, Arrowhead Avenue, and 4th Street, American Sport University has proposed a college serving up to 550 students, a 36,484 sq ft health club, and a 8,250 sq ft food court.
- A 6 mile stretch of Interstate-215 north of Interstate-10 in San Bernardino is being planned for improvements. The project consists of adding a carpool lane both northbound and southbound, widening and replacing bridges, reconstructing interchanges and providing additional mixed flow lanes in either direction.
- SbX, a bus rapid transit, is planned for E Street connecting California State University in the north, downtown San Bernardino, Hospitality Lane, Loma Linda University, Medical Center, and the VA Hospital.

6.3 ISSUES, OPPORTUNITIES AND CONSTRAINTS

Issues

- In the station area, several plans and projects are underway (Carousel Mall redevelopment, Transcenter project, the Arrowhead Credit Union office complex, and other projects in downtown). These projects may not have been considered in the Redlands Passenger Rail Feasibility Study.
- The station area is primarily employment based and currently lacks a 24-hr, 7-days a week activity cycle, although mixed use is permitted in downtown.
- Park and ride facilities are not planned at the Transcenter site according to the April 2006 report.
- The retail/office uses and intensity that the market will be able to support in the future is undetermined.

Opportunities

- This station would serve San Bernardino downtown, the convention center and the Arrowhead Credit Union Park. The station area would therefore have the potential to support additional uses to serve this employment and entertainment base.
- The multi-modal Transcenter under planning at the intersection of E Street and W Rialto Avenue would make this a significant area along the Redlands Rail Line alignment.
- Carousel Mall is being planned for redevelopment with a large residential component. This would introduce housing in the station area and further attract more housing developments.
- The station and vicinity is in a redevelopment area and portions of the station are designated by the General Plan for the highest densities and floor area ratios in the City as well as mixed use.
- The area has a large percentage of transit-dependent population.
- Large surface parking lots adjacent to the proposed station site could be developed with more intense and mix of uses.
- San Bernardino downtown has pedestrian oriented sidewalks, street trees, plazas and bridge connections. These concepts could be applied at other appropriate places in the station area.
- The City of San Bernardino has designated West 2nd Street, E Street and the Interstate 215 corridor for streetscape enhancement, which would improve pedestrian linkages to the station.
- The mayor and other city staff have expressed support for making San Bernardino downtown and the San Bernardino Transcenter site in particular, attractive for new businesses and housing to make it a 24/7 destination.

Constraints

- There is not much vacant land for new developments in connection with the TOD strategy proposed by this study; however, the older commercial and industrial areas near the station offer excellent opportunities for redevelopment.
- Large parcels of land south of West Rialto Avenue have industrial and manufacturing oriented uses. These uses are not very transit dependent. Redevelopment of some of the parcels could be costly.

- From the hazardous materials assessment, a foundry in the area is found to be in the CERCLIS database of current and potential Superfund sites. Two additional sites in the station area are in the Leaking Underground Storage Tank (LUST) database.

6.4 ALTERNATIVES

Chapter 4 discusses the land use alternatives and the task force and community, preferences for the alternatives. Alternative 1 – "Emphasis on Mixed Use and Housing Opportunities" was preferred by the community.

6.5 GOALS AND OBJECTIVES

Goals and objectives for the San Bernardino Transcenter area include:

- Integrate the Redlands Passenger Rail Station with other multi-modal transit and joint development on the Transcenter site.
- Emphasize mixed-use and housing opportunities in the station area at downtown densities and intensities.
- Extend downtown uses and pedestrian-friendly character to the E Street Station area.
- Capitalize on the Arrowhead Credit Union Park and the flood control channels as amenities for development.
- Provide attractively landscaped pedestrian linkages from downtown activity area and proposed new development to stimulate ridership at the Transcenter.

6.6 LAND USE CONCEPT AND LINKAGES

The land use and linkage concept envisioned for the San Bernardino Transcenter Station area emphasizes mixed-use and housing opportunities at downtown densities to provide a 24/7 usage, "eyes on the street" and a market for downtown retail. Examples of this type of downtown development are found in Portland, Oregon, San Diego, Long Beach, Brea, Pasadena, and parts of Los Angeles. The land use and linkage concept illustrated in Figure 6-2 and tabulations in Table 6-3 should be used as a guideline for development. This land use concept assumes that adequate open space and community facilities will be provided within areas designated for mixed-use or housing. This concept should be further refined by the City of San Bernardino, Omnitrans, and potential developers using additional technical studies and community input.

Development potential within 1/2 mile of the station is shown in Table 6-3:

Table 6-3: Development Potential within 1/2 mile of the station at maximum build-out (approximate values)

Potential population	29,800
Potential employment	27,900
Proposed dwelling units	8,900

A good precedent for San Bernardino downtown development is in Portland, Oregon particularly the Pearl District. Pearl District is an amenity laden mixed-use district that includes relatively dense residential with retail and large open spaces. Shown are some images of Pearl District:

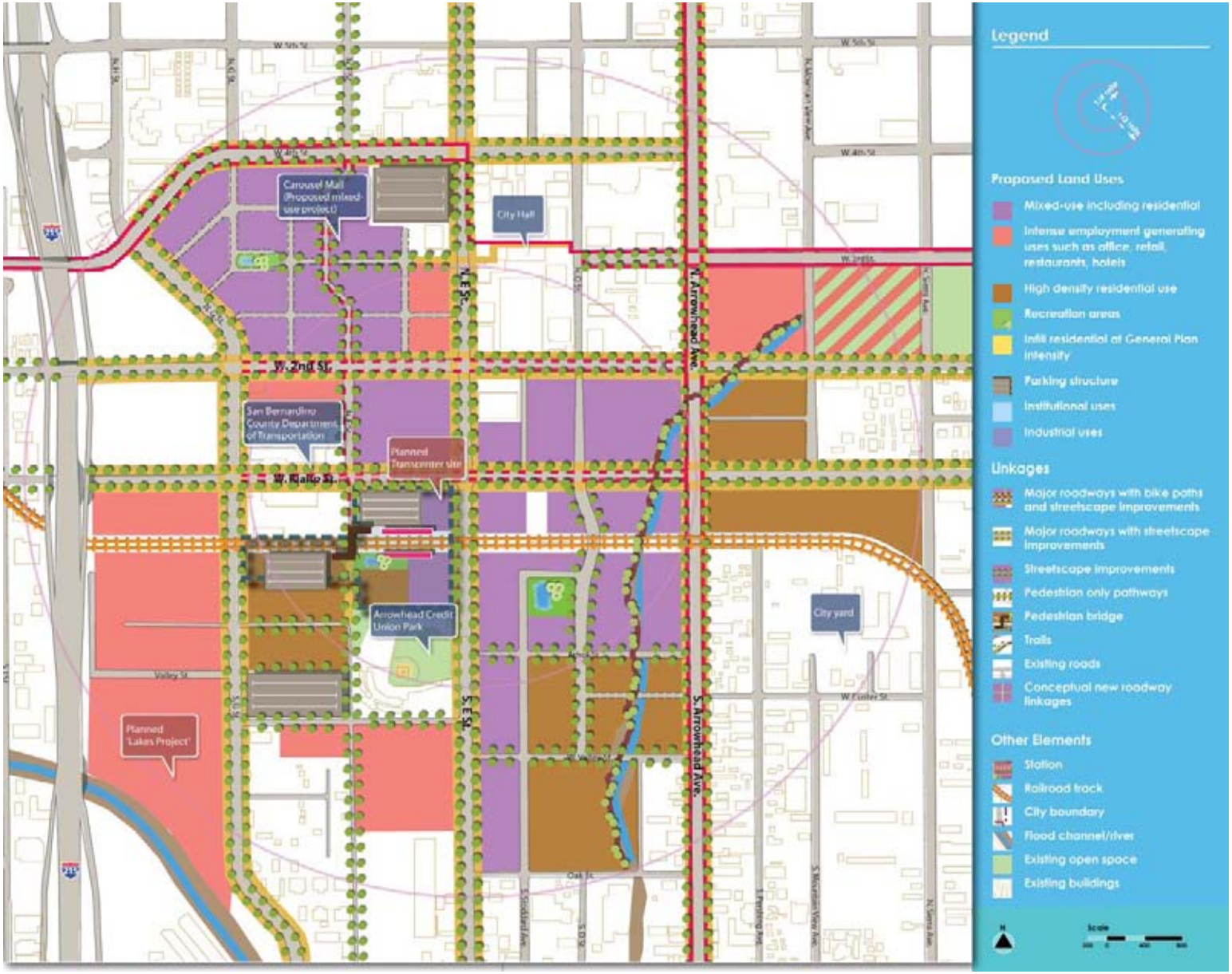


Figure 6-2: E Street Station Area Land Use and Linkage Concept

Another example is the development underway near the Petco Stadium in San Diego. The area near the Arrowhead Credit Union Park could have some of the same characteristics.

6.7 LAND USE POLICY RECOMMENDATIONS

Land use polices to be followed to implement the land use concept include:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of this report to plan and design each project and streetscape in addition to the more specific recommendations in this Chapter.
- Plan for mixed-use and housing on underutilized areas and opportunity sites including:
  - The Transcenter site
  - The Carousel Mall with a variety of housing types and a strong retail presence along E Street, providing a critical mass of new development to transform the area's character
  - On large parking lots south of 2nd Street adding more intense development with vertical mixed use and parking structures
  - Adjacent to the Arrowhead Credit Union Park similar to the area around the Petco Stadium in San Diego
  - In the industrial areas east of E Street
- Plan for additional employment generating uses north of the planned South Lakes Project with linkages to the Transcenter site.
- Provide incentives for owner-occupied residential development with appropriate amenities. Incentives could include increased density, increased height, reduced parking, and expedited processing.
- Provide lot consolidation incentives and redevelopment for the land currently in industrial use south of the railroad.
- Allow densities up to 54 units/acre (the maximum permitted in downtown), and building heights up to five stories if certain amenities are provided. Allow greater densities and heights for senior housing and up to 10 stories if certain amenities, such as station improvements, public gathering spaces, shared parking and other need community benefits are provided.
- Allow floor area ratio (FAR) up to 4.0 for vertical mixed-use housing if certain amenities, such as station, pedestrian improvements, public gathering spaces, shared parking, owner-occupied housing, and other community benefits are provided.
- Provide active, public gathering spaces near the station with pedestrian amenities and public/private usable open space in property with residential improvements.

6.8 CIRCULATION AND LINKAGE POLICY RECOMMENDATIONS

Circulation and linkage policies include (Figure 6-3):

- Allow for parking structures for park-and-ride shared with private development close to the San Bernardino Transcenter.
- Provide attractive streetscapes along E, G and N Streets, Arrowhead Avenue, 2nd Street, and Rialto Avenue linking developments with the station. Plan for at least 15 feet area for sidewalks and landscaping along these arterials.
- Consider bike lanes along 2nd Street and Rialto Avenue in addition to those proposed along 4th Street, 3rd Street and Arrowhead Avenue to connect developments with the station area.
- Connect developments to bicycle paths planned along 2nd Street.
- Provide streetscape improvements and a major pedestrian pathway connection along F Street from the mixed use planned at the Carousel Mall to Mill Street.

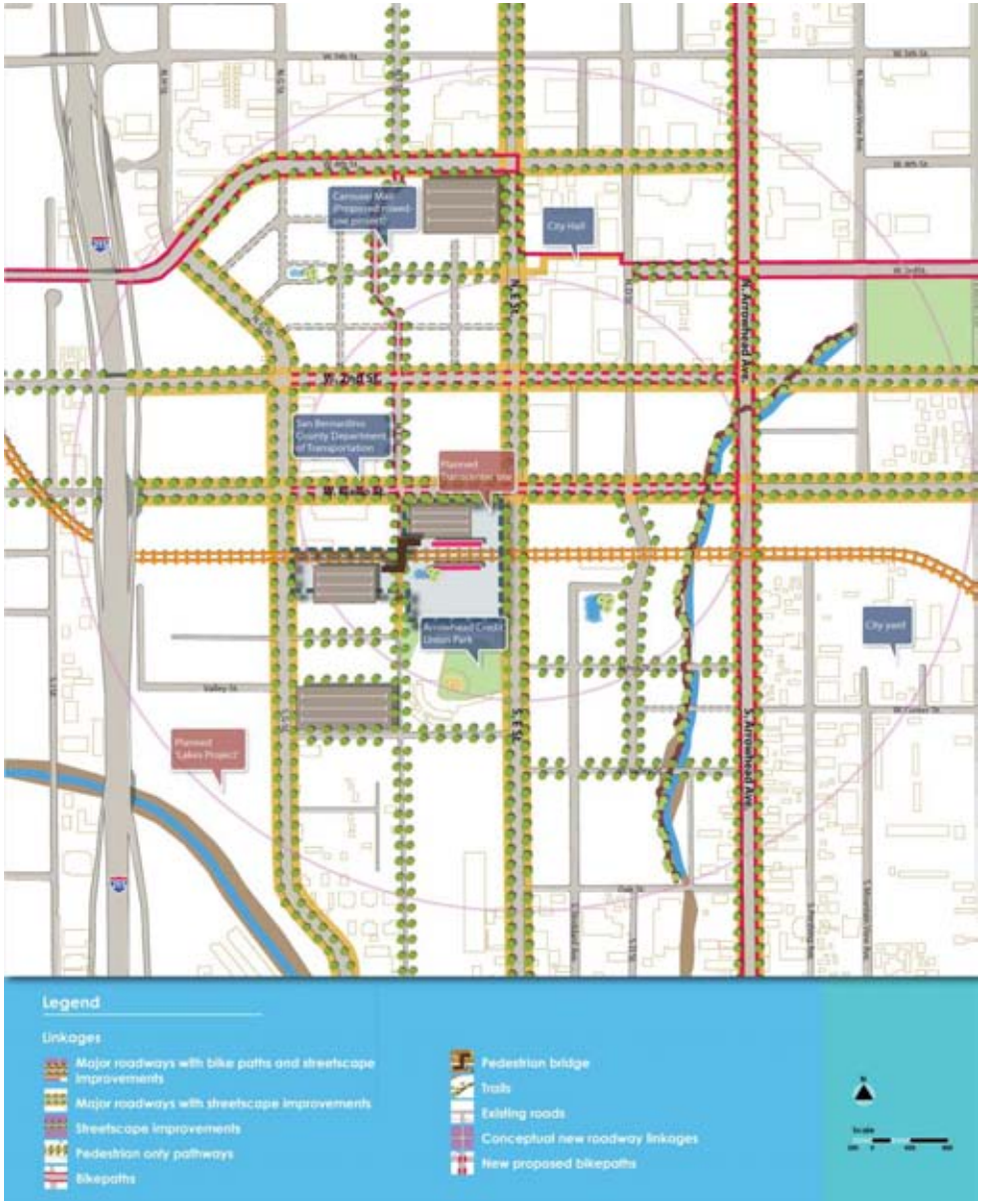


Figure 6-3: Circulation and Linkage Map

- Consider a grade separated connection over the railroad tracks constructed jointly with private development.
- Provide landscaped pedestrian connections to the planned South Lakes Project (office development) and Arrowhead Credit Union Park to the E Street Station.
- Plan a trail along the existing north/south flood control channel which is west of Arrowhead Avenue to link new residential, mixed use, and live-work areas in existing industrial areas.
- Provide open space with water features distributed throughout to serve new development.
- Provide a grid of new roadways primarily east of E Street and within the Carousel Mall site to serve new development.

6.9 IMPLEMENTING POLICIES

- Amend the City of San Bernardino General Plan Map and Zoning Map to designate more of the area within the ½ mile of the Transcenter Redlands Rail Passenger Station to CR-2 (Commercial Regional 2) except City yard area and other areas that the city determines are critical industrial areas. Alternatively create a transit village zone.
- Amend the City's General Plan to include the ½ mile E Street Station area within the Downtown Strategic Plan area.

- Explore public/private partnerships to construct the station, its amenities and new development.
- Develop an incentive program for certain amenities needed in the downtown area to allow for the increased densities and FARs and design review.

6.10 RIDERSHIP AND TRANSPORTATION ANALYSIS

The travel demand model described in Chapter 5 was used to estimate the Redlands Rail ridership at the San Bernardino Transcenter Station. The model results show that this station would be the busiest station in the Redlands Rail system in either of the land use scenarios.

Table 6-4 shows that the San Bernardino Transcenter Station serves as the boarding or alighting point for 4,670 daily passengers in the Baseline Land Use Scenario. This represents more than 60 percent of the daily ridership forecast for the Redlands Rail system in that scenario. The ridership demand at this station increases to 6,870 passengers in the Intensified Land Use Scenario.

The most popular mode of access at the San Bernardino Transcenter Station is transferring to or from another transit vehicle. This is expected because the San Bernardino Transcenter serves 17 Omnitrans routes, two Metrolink routes, two MARTA routes, and one Victor Valley route in the horizon year (2030) transit network.

Table 6-4: Ridership Statistics at San Bernardino Transcenter Station

Measure	Land Use Scenario	
	Baseline	Intensified
Daily Ridership by Access Mode		
Walk	580	1,500
Auto	110	220
Transfer	3,980	5,150
Daily Total	4,670	6,870
AM Peak Hour	450	760
PM Peak Hour	480	630
Parking Spaces	40	90

Walk access is also expected to be a popular mode of access at the San Bernardino Transcenter Station, especially in the Intensified Land Use Scenario. The greater level of residential and employment density assumed for this scenario results in almost three times as much pedestrian traffic as the Baseline Land Use Scenario.

This station is assumed to be the site of one of a park-and-ride lot in the horizon year (2030) transit network. This station attracts the lowest magnitude of auto access of the three park-and-ride lots along the Redlands Rail Corridor. The estimated demand for parking spaces due to the Redlands Rail line is 40 spaces in the Baseline Scenario and 90 spaces in the Intensified Scenario.

The peak hour of ridership demand at the San Bernardino Transcenter Station in the Baseline Scenario is the 480 passengers forecast to board or alight from Redlands Rail trains during the AM Peak Hour. This represents an average of 60 passengers per train. In the Intensified Scenario, the peak hour of ridership demand at this station is the 760 passengers during the PM Peak Hour, which translates to almost 100 passengers per train.

7

MILL STREET STATION AREA PLAN

The Mill Street Redlands Rail Passenger Station is proposed just north of Mill Street, east of the railroad tracks, where approximately 75 ft of right-of-way is available for the station.

7.1 BACKGROUND AND PLANNING CONTEXT

Existing Land Uses and Demographics

As shown in Table 7-1, the majority of the area within ½ mile of the Mill Street station is currently in industrial use and approximately 118 acres of land within the station area was vacant at the time of the survey. Older low-density residential uses, some in poor condition, are located just south of Rialto Avenue in the northern part of the ½ mile station area. A portion of the Orange Show Fairgrounds, which has events with attendance up to 50,000 to 100,000 people, is located at the western edge of the station area. An older elementary school and a newly built distribution center is on the north side of Mill Street (Figure 7-1). The corresponding existing land use map is found in Appendix 3.

Table 7-1: Existing Land Uses within ½ mile of the Mill Street Station

Land Use	Acres
Commercial	91
Industrial	9
Low Density Residential	164
Medium-High Density Residential	78
Office	5
Public Facilities	5
Transportation and Utilities	23
Vacant	118
Grand Total	493

Source: SANBAG, Gruen Associates (2003)
Note: Station areas are 1/2 mile around each station location, with overlapping station areas being apportioned equally between individual stations.

View along Mill Street

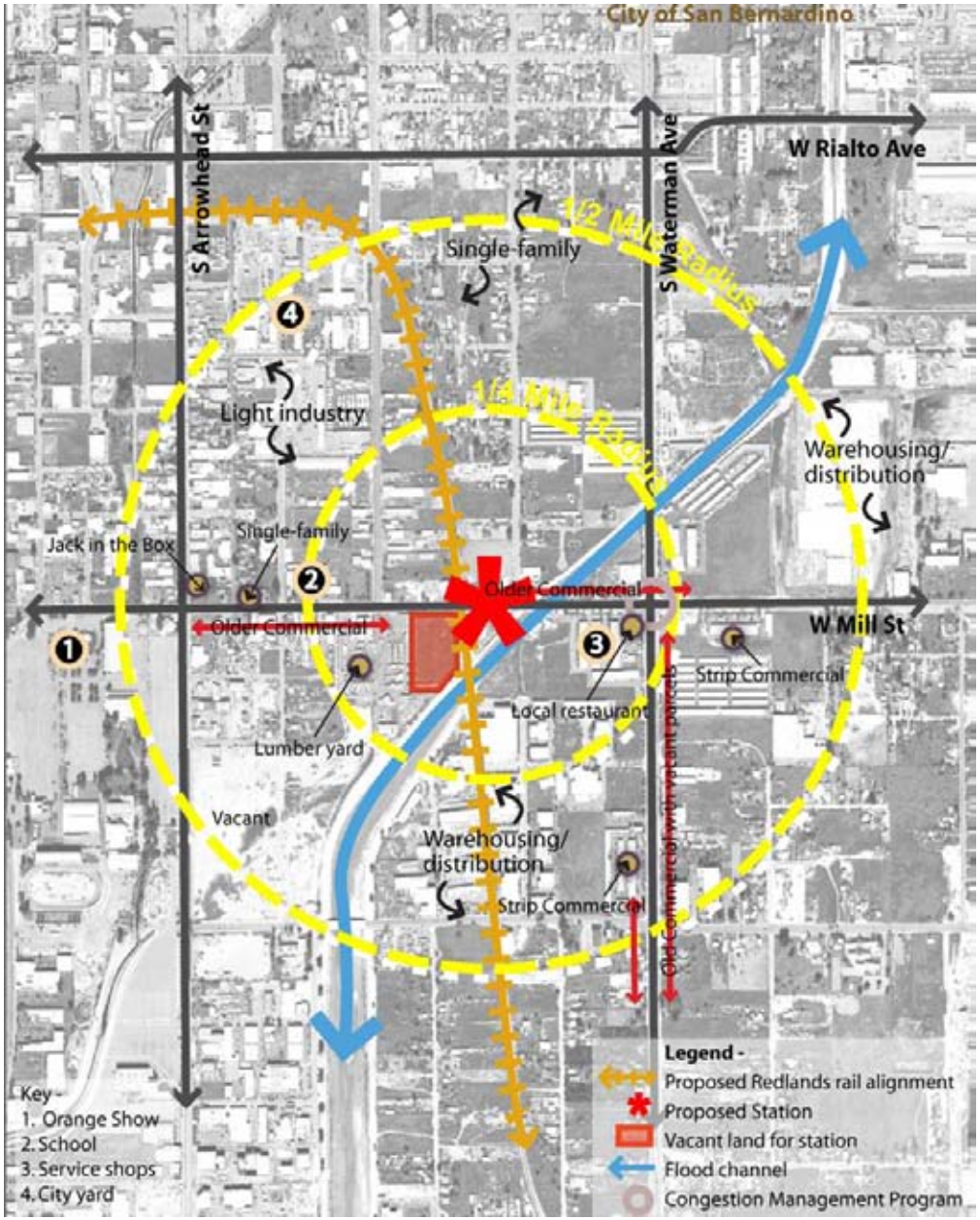


Figure 7-1: Existing Conditions Analysis at Mill Street Station Area

Socio-economics within 1/2 mile of the station are shown in Table 7-2:

Table 7-2: Socio-economics within ½ mile of the Mill Street Station (Census 2000)

Population	Total Population	1,174
	Under 18	419
	Over 65	72
	% under 18, over 65	42%
Housing Units	Total Housing Units	364
	0-Vehicle	75
	%0Vehicle	21%
Households	Total Households	316
	Below Poverty	100
	% Below Poverty	32%
Workers 16 years and over	Total Employment	302
	Using Public Transit	13
	% Using Public Transit	4%

General Architectural and Landscape Character

Other than the Orange Show Fairgrounds, the area has no distinctive architectural character. Building condition and landscaping in much of the area is poor, although there are some newer industrial buildings.

Accessibility to Each Station Area

- Primary vehicular access to the station would be along Mill Street either from Waterman Avenue or Arrowhead Avenue. The northern portion of the station area is served by a grid of streets serving large blocks providing relatively good access for future development. The southern and eastern portions of the station area are bisected by a flood control channel that limits access as well as large parcels with relatively few through streets.
- The station area is served by a number of Omnitrans bus services including Route 1 and 2 that have stops along E Street, ½ mile from the station.
- The station area is in close proximity to San Bernardino International Airport which is planned for 1.0 million passengers in 2013 and 2.3 million passengers in 2023. Access would be via Mill Street to Waterman Avenue to the airport.

7.2 CITY PLANS AND POLICIES

San Bernardino General Plan (November 2005)

- Land Use (refer to Figure 3-2 and Appendix 3)
  - Approximately one-half of the station area is designated Commercial Heavy (CH) in the San Bernardino General Plan. This area is generally located north and south of Mill Street, west of Waterman Avenue. The CH designation allows for an FAR of 0.7, and large scale, regional serving retail and service uses and limited commercial and industrial uses that are characterized by an extensive use of outdoor or indoor space for their sales, service, and/or storage.
  - The area along Waterman Avenue is designated Office Industrial Park (OIP), which permits an FAR of 1.0, and allows offices in a park-like setting including research and development, technology centers, corporate offices, light manufacturing, and supporting retail.
  - The northern portion of the station area is designated for residential suburban (RS) uses with an allowable density of 4.5 dwelling units per acre.
  - The Orange Show Fairgrounds property is designated as Public/Commercial Recreation (PCR).
- Strategic Area
  - Almost the entire station area falls within the Tippecanoe Strategic Area. The Tippecanoe Strategic Area seeks to address the area's infrastructure needs, capitalize upon the adjacent economic opportunities such as the San Bernardino International Airport, improve the area's circulation system and aesthetics, and redevelop vacant and underutilized lands into their highest potential.
- Circulation/Enhancements
  - A Regional Multi-Purpose Trail is planned along the flood control channel within the Mill Street station area.
  - Corridor enhancements including right-of-way improvements are proposed along Waterman Avenue and Sierra Way.
  - Bicycle routes are proposed along Arrowhead Avenue, Waterman Avenue, and Mill Street.

Redevelopment Plan

- A small part of the station area, mainly the Orange Show Fairgrounds, is located within the Central City Projects Redevelopment Area.

Airport Influence Area

- Some portion of the station area east of Sierra Highway is located within the San Bernardino International Airport (SBIA) Influence Area.

Proposed Projects

- A new distribution facility is being planned on a triangular site south of Mill Street and bound by railroad tracks and the flood channel on either side.

7.3 ISSUES, OPPORTUNITIES AND CONSTRAINTS

Issues

- The area is a mix of vacant land, older industrial, strip commercial and some older non-conforming housing in poor condition.
- There are few major destinations or large employment generators in the station area.
- The area close to the station is planned for heavy commercial uses which are not transit dependent.
- The flood control channel and railroad tracks diagonally cross the station area acting as potential barriers to development.

Opportunities

- Approximately ¼ of the area is vacant properties.
- Proximity to the San Bernardino International Airport may provide opportunities to develop vacant land for supporting uses.
- The designation in the General Plan of a large portion of the area for recreation and the presence of an elementary school site may provide opportunity to provide more housing in the area.
- Access improvements are being made on Waterman Avenue and a bicycle trail is planned on Waterman.
- If the transit system and flood control channel are developed with a landscaped bicycle trail, access could be provided from residential areas to jobs in the station area.

Constraints

- The area is designated in the General Plan for relatively low intensity Commercial Heavy uses and some office park uses, therefore uses associated with transit-oriented development is somewhat limited unless the General Plan is modified.
- The run down, uneven development in the area may detract from attracting quality employment intensive uses that are transit supportive.

7.4 ALTERNATIVES

Chapter 4 shows the land use alternatives considered and the preference of the task force and participants at the community workshops for the alternatives. “Alternative 2 – Mixed Use Adjacent to the Station and Along Mill Street and Employment Emphasis” was preferred by the community.

7.5 GOALS AND OBJECTIVES

The goals and objectives for planning the Mill Street transit village include:

- Plan a catalyst project as an independent development to attract first time home buyers, empty nesters, and those choosing to use transit. As the city attracts newer office establishments in downtown, this project could be an attractive option for new city dwellers. Planned with numerous amenities, good linkages and transit options, these could create a new niche market fueling further quality development.
- Revitalize the area along Mill Street with new mixed-use development oriented to the station and housing opportunities near the existing school.
- Plan for increased employment opportunities for San Bernardino International Airport related services.
- Link new development, the station and existing residential and employment with streetscape and waterfront trails.

7.6 LAND USE CONCEPT AND LINKAGES

The land use and linkage concept (Figure 7-2) envisioned for the Mill Street Station area

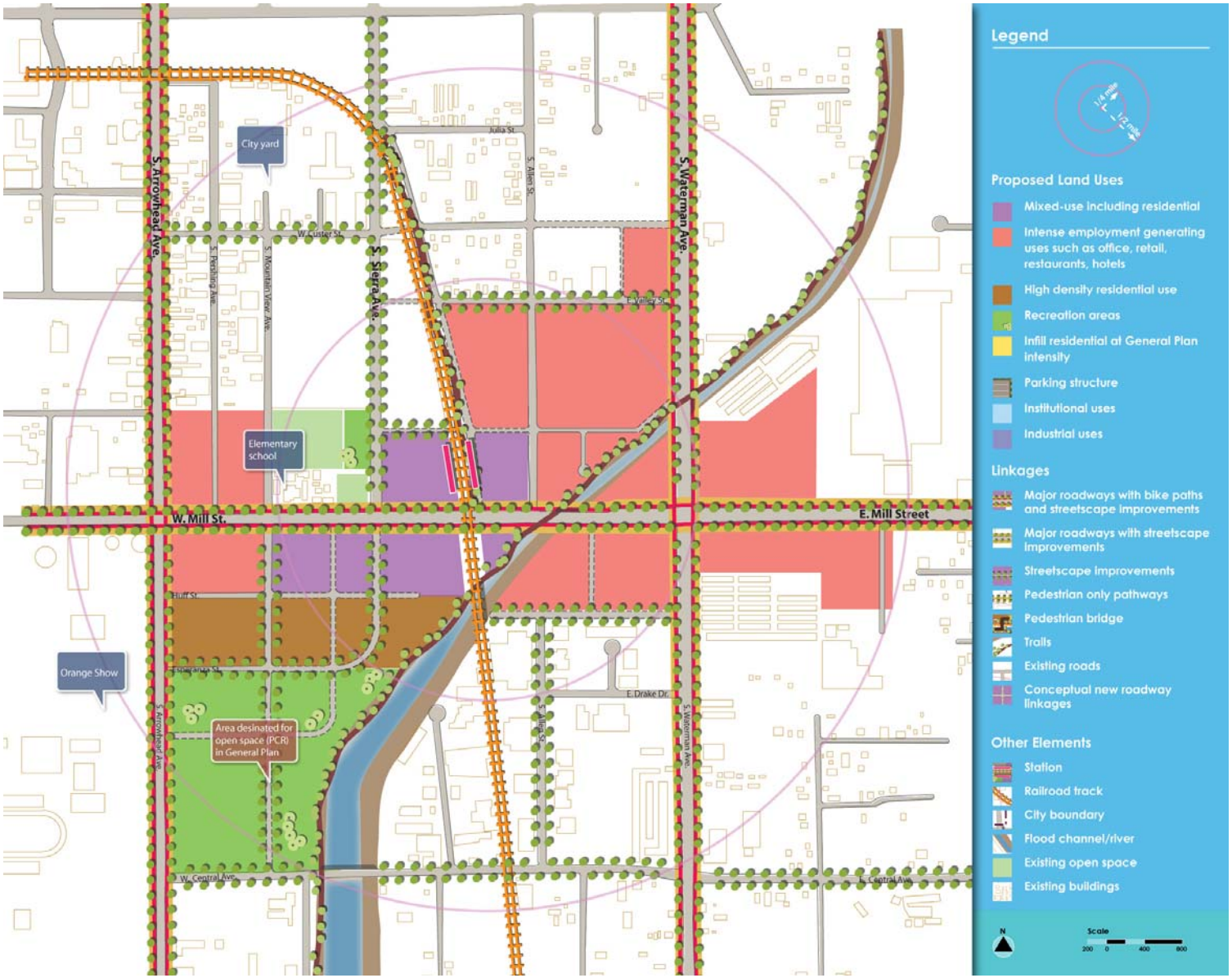


Figure 7-2: Mill Street Station Area Land Use Concept

emphasizes employment in the eastern quadrant of the station area which is nearer to the San Bernardino International Airport and concentrates mixed-use adjacent to the proposed Mill Street passenger rail station and along Mill Street (Figure 7-2 and Table 7-3). High density housing is suggested near the large vacant site designated for open space in the General Plan. Regional multi-purpose trails are planned along the flood control channel and along the rail alignment which would connect the existing residential neighborhood to the north, new high-density housing, and employment uses to the station. This land use concept will require a revision of the City's General Plan around the station and along Mill Street to allow for residential and mixed use near the station, existing school and planned open space. Figure 7-3 is one illustrative concept which follows the general policies, general guidelines and land use concept. Table 7-3 shows the development potential within ½ mile of the station.

Table 7-3: Development Potential within 1/2 mile of the station at maximum build-out (approximate values)	
Potential population	4,900
Potential employment	17,500
Proposed dwelling units	1,700

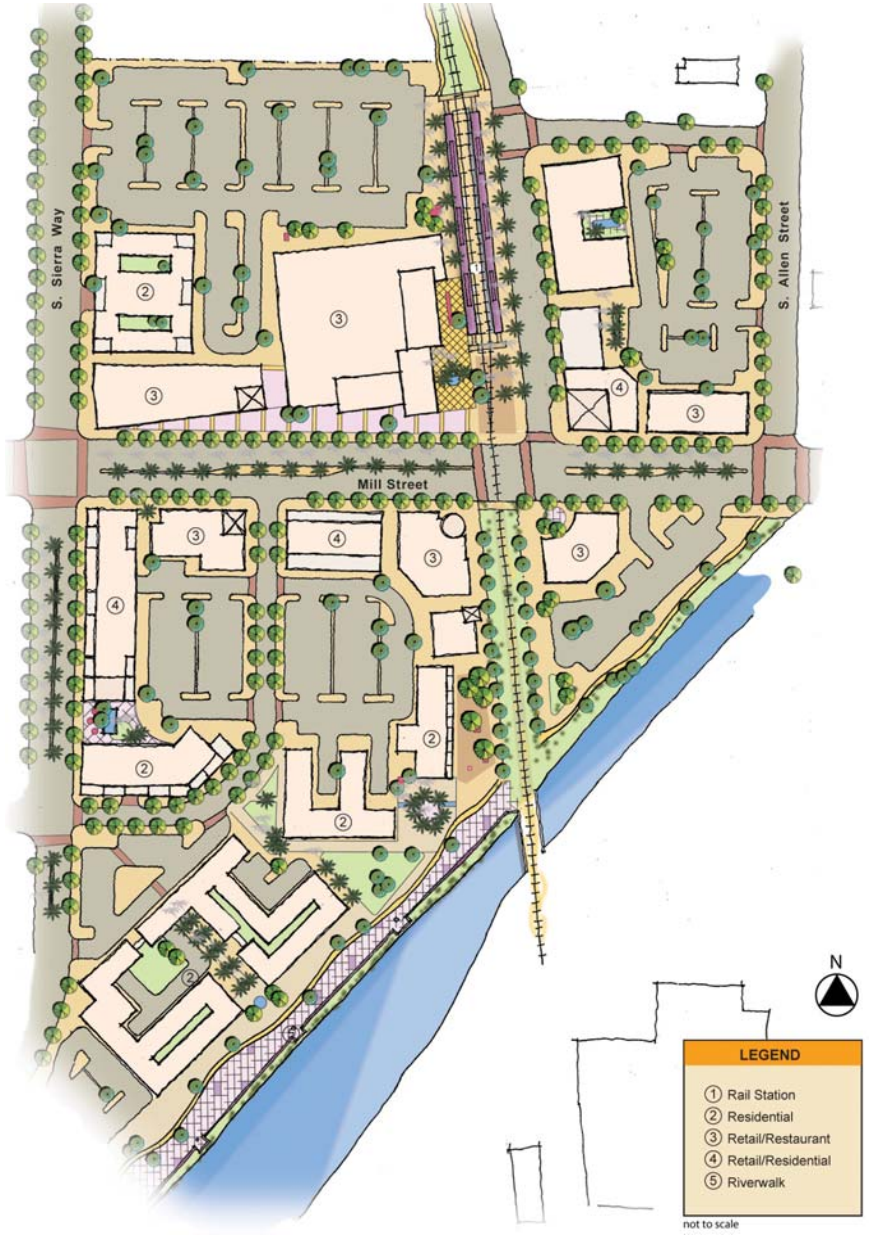


Figure 7-3: Illustrative concept for Mill Street Station Area

7.7 LAND USE POLICY RECOMMENDATIONS

Land use polices to realize this land use concept (Figure 7-2) include:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of this report to plan and design each project and the public realm streetscape.
- Locate station north of Mill Street with an adjacent public gathering space to create a vibrant, active central focus for the area.

- Plan for mixed-use, housing, and more intensive employment generating uses including:
  - Mixed use on both sides of Mill Street between Arrowhead and the flood control channel

  - High density residential uses at a minimum of 24 units/acre concentrated adjacent to the recreation area designated in the General Plan
  - High employment generating uses such as offices on both sides of Waterman Avenue
- Provide incentives for densities up to 54 units/acre, FAR's to 2.0, and building heights up to five stories for redevelopment of underutilized parcels to more transit supportive uses with amenities focusing on uses near the station. Figure 7-4 shows the urban design concept with buildings located along the arterial streets, near the station and along the flood control channel.

- Provide incentives for owner-occupied residential development with appropriate amenities. Incentives could include increased density, increased height, reduced parking, and expedited processing.
- Encourage low intensity employment uses such as warehousing and distribution centers to locate outside the ½ mile area.
- Discourage new uses with outdoor storage, sales, and services in the mixed-use areas.

Figure 7-4: Suggested massing for Mill Street Station Area at 1.0 FAR

- Provide buffering concepts between airport-oriented employment uses and residential uses when appropriate.

7.8 CIRCULATION AND LINKAGE POLICY RECOMMENDATIONS

Circulation and linkage policies (Figure 7-5) include:

- As called out in the San Bernardino Countywide Bicycle Map and as projects develop, link and phase the construction of a multi-purpose trail along the flood control channel leading to the station.
- Provide a trail system in the railroad right-of-way where possible to link the station to the existing single-family neighborhood in the northern portion of the station area. As railroad right-of-way is only 50 feet, also create a landscaped linkage adjacent to the right-of-way and along north-south streets.
- Along Mill Street, provide attractive streetscape improvements including sidewalks of 12 ft to 15 ft wide and tall street trees of a similar species along Mill Street to change the overall character of the area and provide pedestrian access from the station to the Orange Show and new mixed-use developments. Also implement the planned Countywide bicycle path on Mill Street.

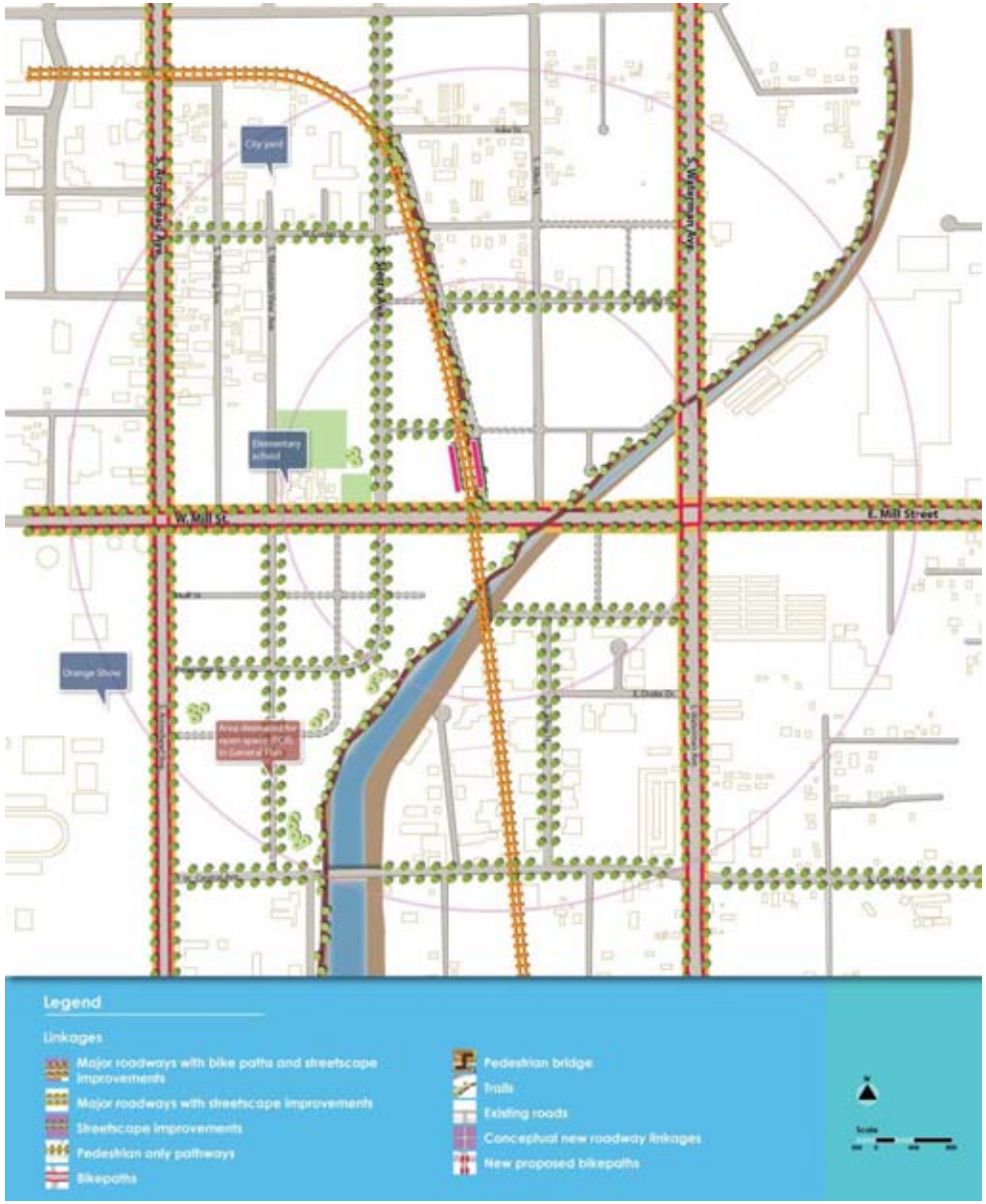


Figure 7-5: Circulation and Linkages Plan for Mill Street Station Area

- Provide landscaped pedestrian connections and crosswalks to the elementary school from the residential areas.
- Implement streetscape improvements on Arrowhead and Waterman Avenues to improve visual and pedestrian connections as well as the planned countywide bicycle paths on these streets.
- With new development, create new landscaped roadways with pedestrian improvements.
- Rerouted local bus service to the station.

7.9 IMPLEMENTING POLICIES

- Change General Plan "Heavy Commercial" near the station to a more transit-supportive land use designation which includes mixed-use, high density housing, office uses, and other more intensive employment uses.
- Develop incentive program for amenities needed in the area.
- Consider Economic Development Agency assistance in creating a catalyst project with a residential component in the ¼ mile area around the station which is of sufficient size to change the overall character of the area and is developed concurrent with the station.
- Create a set of incentives for the city to attract quality development as a signature public/private project for the Mill Street area such as reduction in permit fees, expedited permit process, parking reductions when transit is in construction, density and intensity bonuses, and lot consolidation.
- Provide incentives for high employment generating uses within ½ mile of the station area in cooperation with IVDA.

7.10 RIDERSHIP AND TRANSPORTATION ANALYSIS

The travel demand model described in Chapter 5 was used to estimate the Redlands Rail ridership at the Mill Street Station. The model results show that this station would have the lowest ridership demand in the Redlands Rail system in the Baseline Land Use Scenario.

Table 7-4 shows that the Mill Street Station serves as the boarding or alighting point for 910 daily passengers in the Baseline Land Use Scenario. The ridership demand at this station increases by more than 125 percent to 2,060 passengers in the Intensified Land Use Scenario.

Walking is the only mode of access allowed at the Mill Street Station. This is because no other transit routes are assumed to serve this location and no park-and-ride lot is assumed in the horizon year (2030) transit network.

The peak hour of ridership demand at the Mill Street Station in the Baseline Land Use Scenario is the 120 passengers forecast to board or alight from Redlands Rail trains during the PM Peak Hour. This represents an average of eight passengers per train (assuming eight trains per hour in each direction of travel). In the Intensified Land Use Scenario, the peak hour of ridership demand at this station is the 250 passengers during the PM Peak Hour, which translates to more than 15 passengers per train.

Table 7-4: Ridership Statistics at Mill Street Station

Measure	Land Use Scenario	
	Baseline	Intensified
Daily Ridership by Access Mode		
Walk	910	2,070
Auto	-	-
Transfer	-	-
Daily Total	910	2,070
AM Peak Hour	54	140
PM Peak Hour	120	250
Parking Spaces	-	-

8

TIPPECANOE AVENUE STATION AREA PLAN

The Redlands Passenger Rail Tippecanoe Avenue Station could be located east or west of Tippecanoe Avenue and north of the flood control channel. As there are railroad spurs to the east of Tippecanoe Avenue not owned by SANBAG, the station is located west of Tippecanoe Avenue in the 100-ft wide rail ROW. The station area is located entirely in the City of San Bernardino.

8.1 BACKGROUND AND PLANNING CONTEXT

Existing Land Uses and Demographics

Existing land uses within ½ mile of the Tippecanoe Avenue station are shown in Table 8-1. Approximately 1/3 of the land is devoted to industrial uses, 1/3 to residential uses, and 1/3 is vacant. The very southwestern portion of the station area includes commercial uses along Hospitality Lane, a relatively new low intensity mixed-use development of retail, business park and restaurants known as Tri-City. The southeastern portion of the station area is an older single-family neighborhood with some multi-family housing units and the northern portion of the area has primarily industrial and warehousing uses (Figure 8-1).

Table 8-1: Existing Land Uses within ½ mile of the Tippecanoe Avenue Station

Land Use	Acres
Commercial	20
Industrial	165
Low Density Residential	138
Medium-High Density Residential	13
Office	14
Public Facilities	9
Transportation and Utilities	2
Vacant	142
Grand Total	501

Source: SANBAG, Gruen Associates (2003)

Railroad intersection at Tippecanoe Avenue

Figure 8-1: Existing Conditions Analysis at Tippecanoe Avenue Station Area

Socio-economics within 1/2 mile of the station are shown in Table 8-2:

Table 8-2: Socio-economics within ½ mile of the Tippecanoe Avenue Station (Census 2000)

Population	Total Population	1,461
	Under 18	514
	Over 65	122
	% under 18, over 65	44%
Housing Units	Total Housing Units	443
	0-Vehicle	48
	%0Vehicle	11%
Households	Total Households	399
	Below Poverty	93
	% Below Poverty	23%
Workers 16 years and over	Total Employment	428
	Using Public Transit	27
	% Using Public Transit	6%

General Architectural and Landscape Character

The architectural and landscape character of the area varies. Newer developments in the southwest quadrant (the Hospitality Lane area) have attractively landscaped streetscapes and one to two story large footprint buildings typical of vehicular-oriented shopping centers of today.

The southwest quadrant primarily has older commercial, single-family houses, some in poor condition and some multi-family residential units. The northwest and northeast quadrants include older industrial facilities, in some cases with no landscaping or sidewalks along the streets. The bridge over the flood control channel is narrow and has no sidewalks.

Accessibility to Each Station Area

Bus, vehicular and pedestrian circulation to the station site is limited to Tippecanoe Avenue, due to both the flood channel and the railroad, which parallel each other and bisect the station area into two parts. Congestion along Tippecanoe Avenue and from I-10 freeway to and from Tippecanoe Avenue is moderate to severe today. However, the proposed I-10 freeway and South Tippecanoe Avenue/ Anderson Street ramps and widening should improve traffic conditions to and from I-10 freeway.

8.2 CITY PLANS AND POLICIES

San Bernardino General Plan (November 2005)

The City of San Bernardino designates the station area for a mix of commercial, industrial and residential with varying densities.

- Land Use
  - The northern half of the station area is designated Industrial Light (IL). An FAR of .75 is permitted. The IL designation allows for light industrial uses including warehousing/distribution, mini storage, and repair facilities conducted within enclosed structures as well as supporting retail and personal uses.


Existing industrial uses

  - A small portion located east of Tippecanoe Avenue, between San Bernardino Avenue and Victoria Avenue is designated Office Industrial Park (OIP). The OIP designation permits an FAR of 1.0, and allows offices in a park-like setting including research and development, technology centers, corporate offices, light manufacturing, and supporting retail.
  - The southwest quadrant is designated Commercial Regional-3 (CR-3). An FAR of .7 for commercial uses, 3.0 for hotels and offices, and 1.5 for research and development facilities is permitted. Intended uses include a mixture of regional serving retail, service, tourist, office, entertainment, financial establishments, restaurants, hotels/motels, research and development, high technology, business parks, warehouse/promotional retail, and supporting services that capitalize on the location along the I-10 corridor.
  - Residential uses are planned in the southeast quadrant. Approximately half of this quadrant is planned for Residential Medium High (RMH) uses which allow for 24 dwelling units per acre as multi-family dwellings including apartments and condominiums.
  - The area in the southeast quadrant, east of Feree Street, is designated for Residential Urban (RU) use in the north which allows for a density of 9 dwelling units per acre, and Residential Medium (RM) in the south which allows for a density of 14 dwelling units per acre.
- Strategic Area
  - The Tippecanoe station area is located within the Southeast (northern half), Southeast Industrial (southeast quadrant) and Urban Conservation and Enhancement (southwest quadrant) Strategic Areas.

- The Southeast Strategic Area seeks to rehabilitate residential areas, and separate them from surrounding industrial areas with berming and buffers.
- The Southeast Industrial Strategic Area is intended to protect the industrial job base, help improve residential conditions, and help mitigate impacts such as traffic, noise and odor, to adjacent residences.
- The intent of the Urban Conservation and Enhancement Area is to achieve a fundamental change is the land use pattern or quality of development.

- Circulation/Enhancements
  - Corridor enhancements are planned along Tippecanoe Avenue.
  - Bicycle routes are planned along Tippecanoe Avenue and San Bernardino Avenue.
  - A Primary Regional Multi-Purpose Trail is planned along Santa Ana River, a portion of which is located in the northern part of the station area.

Redevelopment Plan

The Tippecanoe Avenue station area is located within the Tri-City, and Southeast Industrial Park Redevelopment Areas. The entire station area is located within the Airport Influence Area of SBIA.

Other Plans and Studies

Proposed projects and other relevant plans include:

- Northpointe, a 284,000 square foot complex of office buildings and approximately 60,000 square feet in restaurants and shops, is under construction on 24-acre site on Tippecanoe Avenue between Hospitality Lane and Brier Drive. Wells Fargo will have approximately 1,400 employees in two five-story buildings.
- Caltrans and SANBAG have prepared plans for improvements to the I-10 intersection of Tippecanoe included a loop ramp, which will remove some housing from the ramp area and will improve traffic flow at the freeway. Current plans for widening of Tippecanoe Avenue are at the freeway and short of station area. In communication with the City of San Bernardino engineers, it was found that Tippecanoe Avenue in the station area would eventually have 3 lanes on either side with a 24 foot wide median or two turning lanes. In addition, there would be 8 foot wide sidewalks on either side and the remaining available right of way would be landscaped. Non-signalizes turns would be reduced for uninterrupted flow of traffic. The bridge at the flood channel would also be taken up for widening. However, there is no specific timeline for these improvements and no detailed studies are currently available.
- San Bernardino County has planned a trail system along the Santa Ana River and the City of San Bernardino has an amenity plan for the area.

8.3 ISSUES, OPPORTUNITIES AND CONSTRAINTS

Issues

- The Tippecanoe station area has a mix of residential and employment uses; however, much of the employment and retail are vehicle-oriented, low intensity, and the pattern of development and amenities do not create a pedestrian-friendly environment.
- The flood control channel and railroad tracks are barriers to both pedestrian and vehicular access to the station. However, planned office uses and the planned infill of existing residential neighborhood at higher densities with appropriate planning guidance could change the character to a more transit supportive environment.

Opportunities

- A large portion of the area is within redevelopment areas.
- The proximity to the successful Hospitality Lane which has limited vacant land may encourage redevelopment of the older

adjacent industrial facilities and other vacant lands in the station area.

- The Northpointe development will place approximately 1,400 new employees in walking distance to the station.
- The southeast quadrant is an older residential neighborhood which is designated at a higher density in the General Plan providing an opportunity for a large number of residents in walking distance of the station area.
- Redevelopment of the older light industrial uses in the northwest quadrant for more employment intensive uses would increase ridership and provide opportunity for more attractive pedestrian environment near the station.

Constraints

- Although the 2003 SANBAG map (Figure 3-1) shows ¼ of the area vacant, some of this vacant area has been recently developed in big box uses including the area south of Hospitality Lane.
- The flood control channel divides the station area, and limits pedestrian access to the station to the bridge on Tippecanoe Avenue.
- Tippecanoe Avenue is a wide busy street sometimes with no sidewalks making walking to the station difficult.
- An active solid waste site exists immediately adjacent to the station site. Several other hazardous material sites have been identified within half-mile of the station area.

8.4 ALTERNATIVES

Chapter 4 shows the land use alternatives and linkage alternatives and the preferences of the task force and participants in the community workshops for the alternatives. Alternative 2 – "Employment Based Development at the Station Area" was the preferred alternative.

8.5 GOALS AND OBJECTIVES

The goals and objectives for planning the Tippecanoe transit village include:

- Plan for more intensive employment uses including offices, and retail, restaurants, and entertainment uses linked to the station.
- Infill the existing residential neighborhood creating compact development with direct linkages to the station.
- Make Tippecanoe Avenue an attractive multi-modal boulevard with tall trees, wider sidewalks, shuttle and bus service, pedestrian amenities, in addition to improved vehicular carrying capacity.
- Utilize the existing flood control channel as a multi-purpose trail.

8.6 LAND USE CONCEPT AND LINKAGES

The land use and linkage concept envisioned for the Tippecanoe Station is to continue employment based development in the northwest, northeast, and southwest quadrants of the station area, however focusing new development on more intensive employment generating uses such as offices, restaurants, and retail rather than industrial uses (Figure 8-2). These employment generating uses, when developed, should be designed with clear pedestrian pathways to an improved Tippecanoe Avenue which would then lead directly to the station (Figure 8-3).

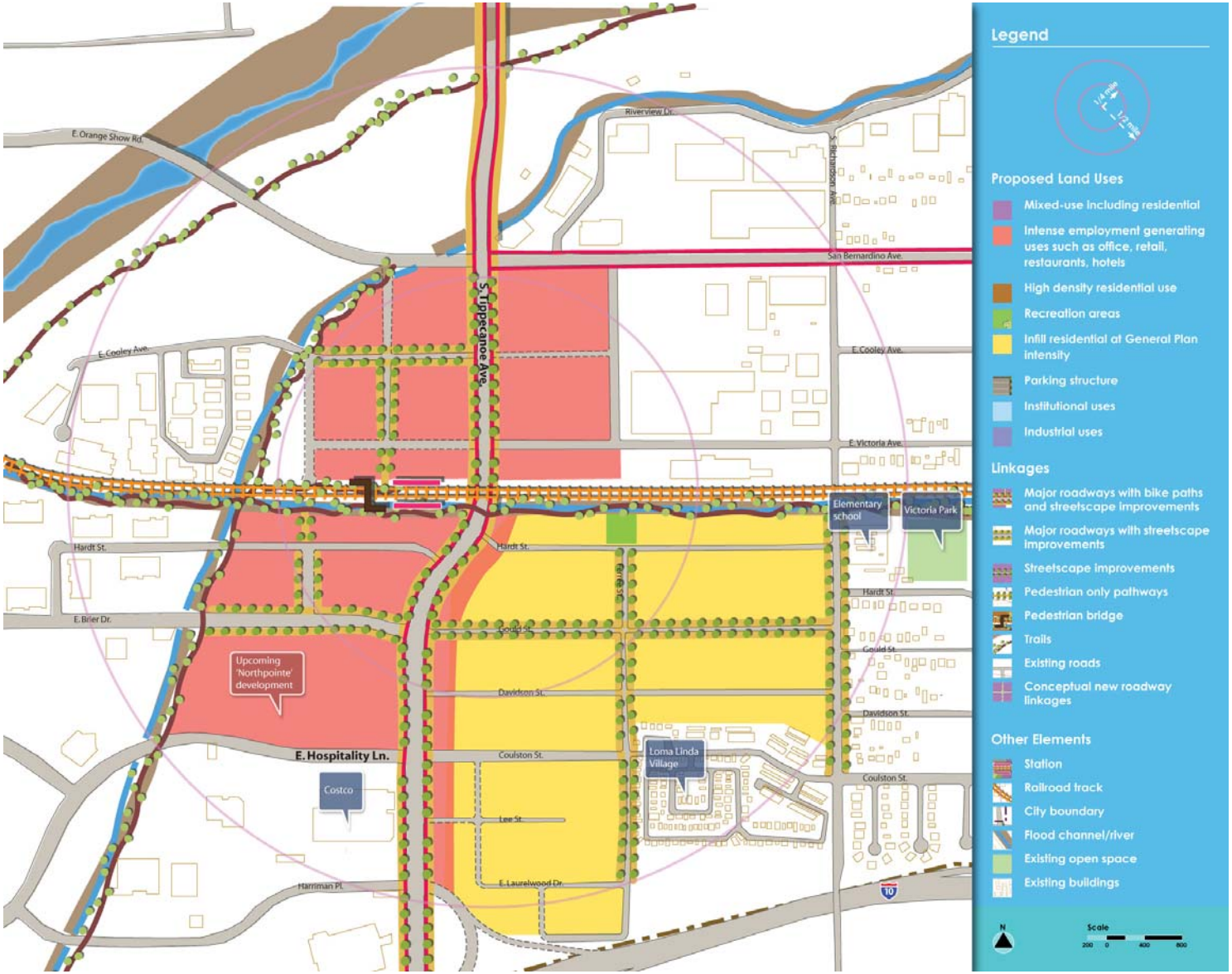


Figure 8-2: Tippecanoe Avenue Station Area Land Use Concept

Infill existing residential neighborhood to maximum densities permitted in the General Plan and provide landscaped pathways along collector streets leading to Tippecanoe Avenue and a new landscaped linkage along the flood control channel.

Tippecanoe Avenue is improved as a boulevard with tree-lined walkways on either side to protect the pedestrian, landscaped medians, new bridge improvements, new ramps, decorative crosswalks, new travel lanes, restaurant, and neighborhood serving retail along the east side replacing the existing deteriorated structures. These new buildings would face the new landscaped walkways along Tippecanoe and parking would be in the rear with landscaped walls buffering the parking from the residential. Table 8-3 shows the land use acreage of each use envisioned.

Table 8-3: Development Potential within 1/2 mile of the station at maximum built-out (approximate values)

Potential population	5,500
Potential employment	17,300
Proposed dwelling units	1,700

Figure 8-3 is an illustrative concept with Tippecanoe Avenue improved with tree-lined pathways and new employment generating uses located close to these pathways which link directly to the station fostering walking to jobs and to housing.

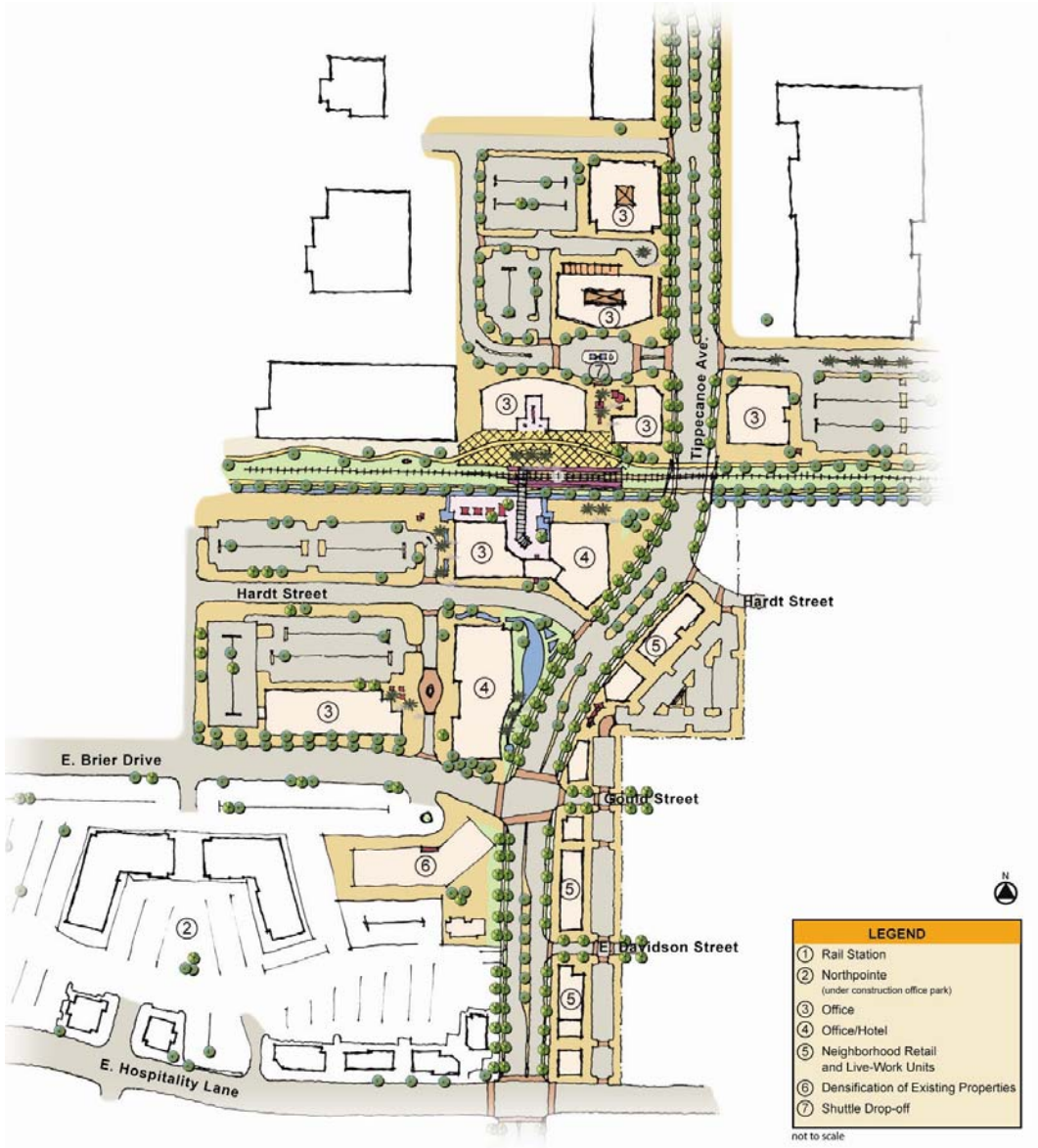


Figure 8-3: Illustrative Concept for Tippecanoe Station Area Development

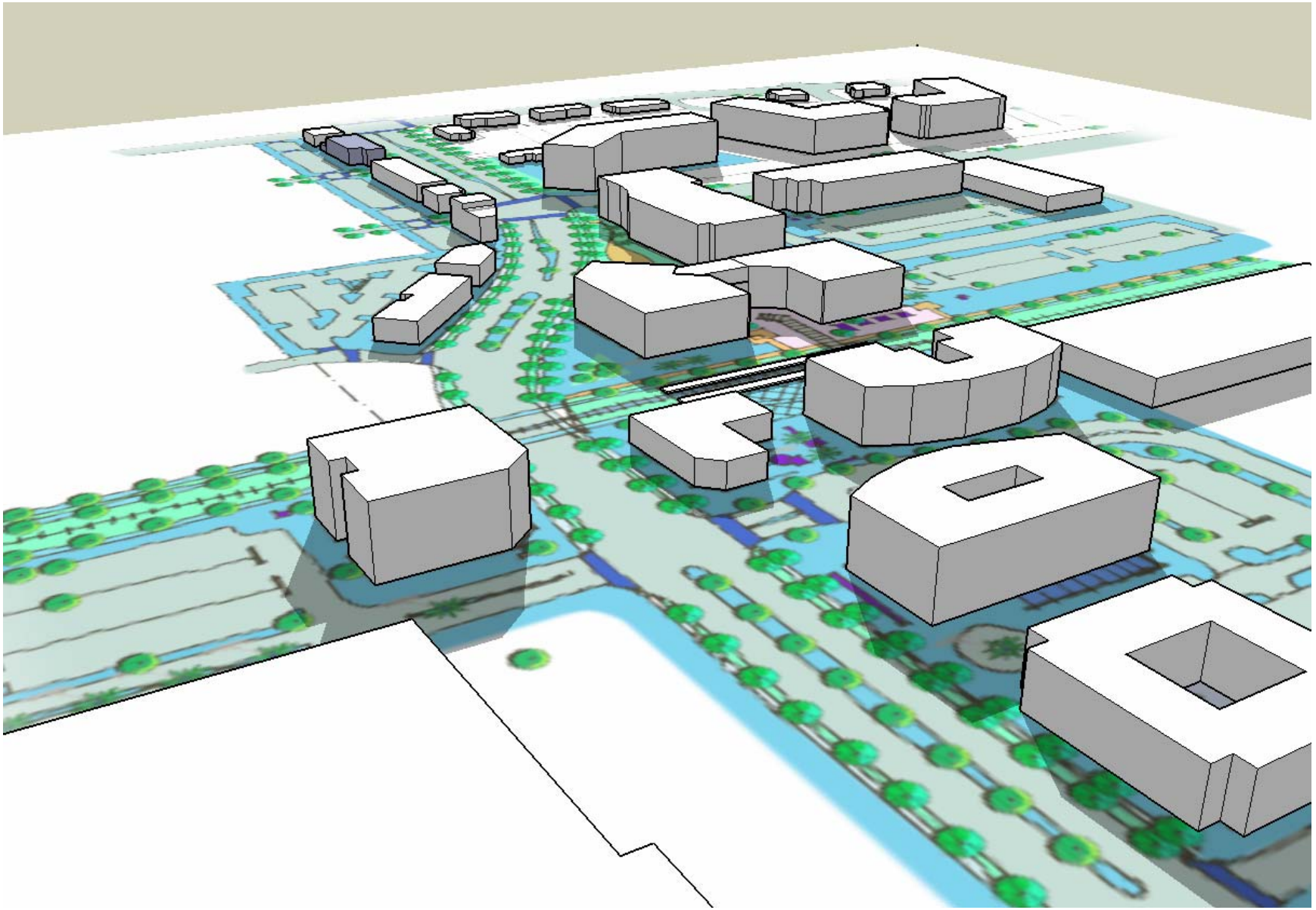
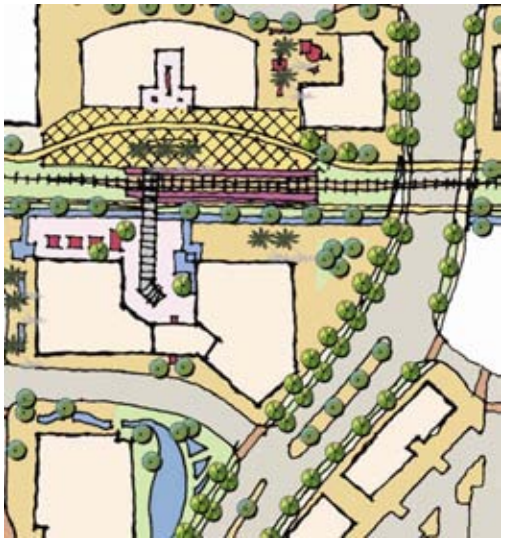


Figure 8-4: Suggested massing for Tippecanoe Avenue Area

8.7 LAND USE POLICY RECOMMENDATIONS

Land use polices to realize the land use concept includes:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of this report to plan and design each project and the public realm streetscape.
- Locate the rail station on west side of Tippecanoe Avenue with a public gathering space adjacent and an optional pedestrian bridge over the railroad tracks and flood control channel.

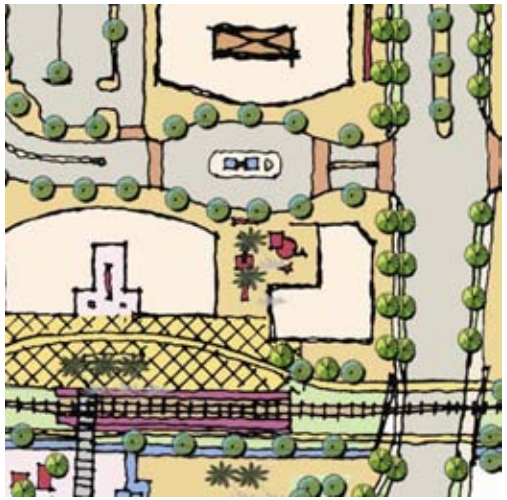


- Plan for development of older industrial uses within ¼ mile of the station into employment intensive uses (that have ratios in the 250-400 square foot per employee range) such as office, retail, and restaurants.
- Consider hotel use incorporated with a new retail, office complex within ¼ mile of the station.
- Infill existing residential neighborhood with new residential units at the maximum densities currently permitted in the General Plan.
- Provide incentives for owner-occupied residential development with appropriate amenities. Incentives could include high density, reduced parking, and expedited processing.
- Along the east side with a frontage along Tippecanoe Avenue, attract neighborhood serving uses such as retail, restaurant, and live-work units that are designed to face the landscaped parkway along Tippecanoe Avenue, and parking in underground or in the rear.
- Before the Redlands Rail is constructed, allow reduced parking standards within ¼ mile of the station if reduced demand is demonstrated by a parking study. Once transit is constructed, consider intensifying existing parcels by adding new buildings with reduced parking standards.

8.8 CIRCULATION AND LINKAGE POLICY RECOMMENDATIONS

Circulation and linkage policies (Figure 8-5) include:

- Provide shuttle drop-off and kiss and ride at the station.



- Make streetscape improvements including landscaping, improved sidewalks and enhanced crosswalks along Feree Street, Gould Street and Coulston Street linking the existing residential neighborhood to pedestrian pathways along Tippecanoe Avenue.

Figure 8-5: Circulation and Linkages Plan for Tippecanoe Avenue Station Area

- Plan Tippecanoe Avenue as a multi-modal boulevard (Figure 8-6) which is not only for vehicular traffic lanes but also for shuttle service to the airport and Loma Linda, and for canopy tree-lined, pedestrian pathways on either side of the travel lanes leading to the passenger rail station. Tippecanoe Avenue pedestrian pathways would link Hospitality Lane development, the upcoming Northpointe development, and the residential neighborhood. This is most critical as Tippecanoe Avenue is currently the only street in the station area crossing the railroad tracks and has heavy truck traffic. The solution may entail acquisition of additional right-of-way along Tippecanoe Avenue and/or requiring setbacks and easements on adjacent private property to accommodate attractively landscaped pedestrian pathways.

- Develop a landscape trail along the existing flood control channel and/or rail right-of-way providing east/west access to the station.

- Within new development, create new landscaped roadways with pedestrian improvements.

- Reroute local bus service to the station.

- Provide feeder bus routes serving SBIA and Loma Linda.

.

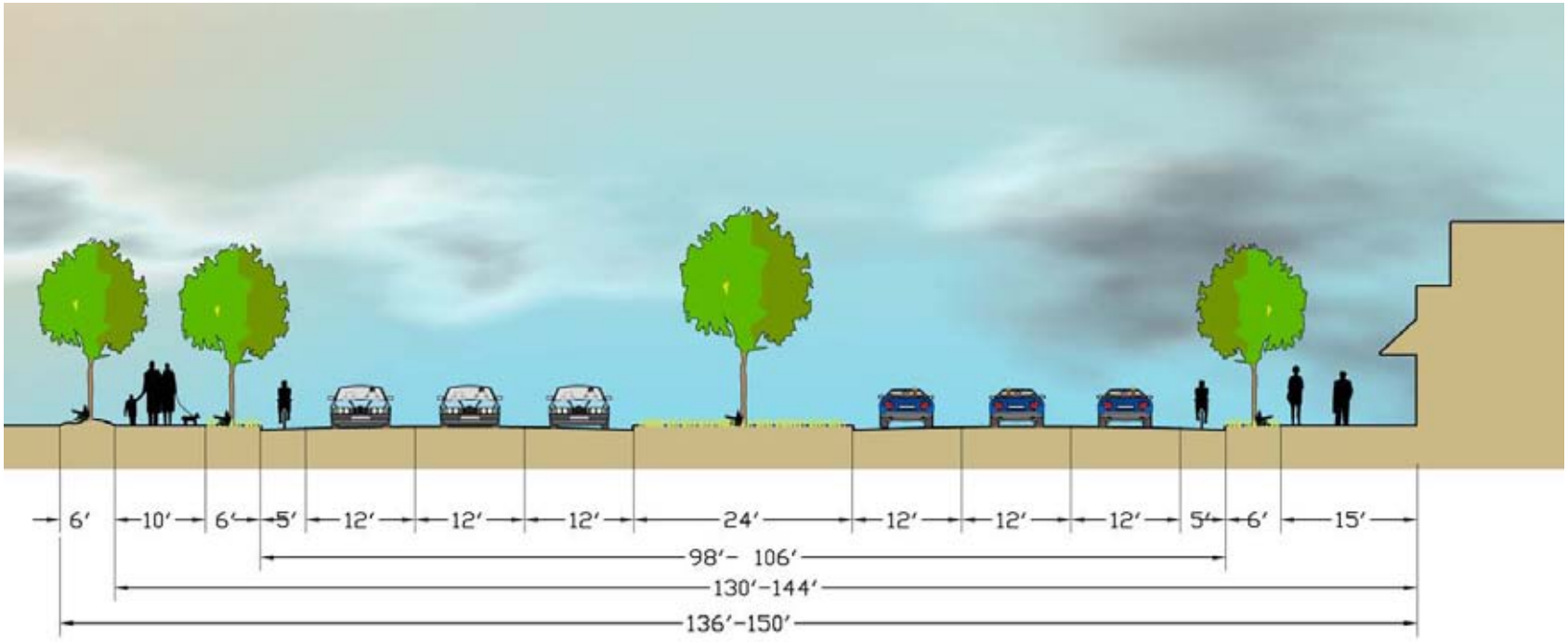


Figure 8-6: Conceptual section across Tippecanoe Avenue looking north

8.9 IMPLEMENTING POLICIES

The following implementing policies are suggested for the City's consideration:

- The City of San Bernardino shall provide urban design input to any widening plans for Tippecanoe Avenue to ensure that ample sidewalks and landscaping are provided on both sides of the boulevard and across the flood control bridge Amend the General Plan to change the area within ¼ mile of the station currently designated IL to more intensive employment uses and with higher FARs which as similar to the FARs permitted along Hospitality Lane.
- Establish a minimum density of 17 units/acre for future development in the existing residential neighborhood within ½ mile of the station and encourage development to maximum density permitted.
- Modify the development standards of CR-3 or create a new TOD designation and zone to allow for more "urban" development with buildings in the front, parking in the rear, parking structures, stacked uses, reduced setbacks and higher FARs in exchange for more pedestrian amenities and community improvements.
- Work with the San Bernardino International Airport and the City of Loma Linda in creating a shuttle system from the station to these areas.

8.10 RIDERSHIP AND TRANSPORTATION ANALYSIS

The travel demand model described in Chapter 5 was used to estimate the Redlands Rail ridership at the Tippecanoe Avenue Station. Table 8-4 shows that the Tippecanoe Avenue Station serves as the boarding or alighting point for 1,240 daily passengers in the Baseline Land Use Scenario. The ridership demand at this station increases by almost 100 percent to 2,400 passengers in the Intensified Land Use Scenario.

Table 8-4: Ridership Statistics at Tippecanoe Avenue Station

Measure	Land Use Scenario	
	Baseline	Intensified
Daily Ridership by Access Mode		
Walk	750	1,980
Auto	-	-
Transfer	490	420
Daily Total	1,240	2,400
AM Peak Hour	100	170
PM Peak Hour	140	290
Parking Spaces	-	-

Walking is the most popular mode of access at the Tippecanoe Avenue Station, with 60 percent of the access share under the Baseline Scenario. The residential and employment development assumed for the Intensified Land Use Scenario causes the walk access share to increase to 82 percent of the total access to this station.

The remainder of the access to the Tippecanoe Avenue Station results from transfers to and from the two Redlands Rail Feeder Routes that serve this station.

There is no auto access forecast at this station because no park-and-ride lot is assumed in the horizon year (2030) transit network.

The peak hour of ridership demand at the Tippecanoe Avenue Station in the Baseline Land Use Scenario is the 140 passengers forecast to board or alight from Redlands Rail trains during the PM Peak Hour. This represents an average of approximately nine passengers per train (assuming eight trains per hour in each direction of travel). In the Intensified Land Use Scenario, the peak hour of ridership demand at this station is the 290 passengers during the PM Peak Hour, which translates to almost 20 passengers per train.

9

CALIFORNIA STREET STATION AREA PLAN

The Redlands Passenger Rail California Street Station is proposed on the east side of California Street. The California Street station area is located within three jurisdictions:

- City of Loma Linda (southwest quadrant)
- City of Redlands
- County of San Bernardino (northeast quadrant)

9.1 BACKGROUND AND PLANNING CONTEXT

Existing Land Uses and Demographics

As shown in Figure 9-1, the I-10 Freeway and the Redlands Rail alignment which bisects the station area generally divides the station area into two halves. Much of the area located in the northwest quadrant is currently used for agriculture. Pharaoh's Lost Kingdom, an amusement park, is also located in this quadrant. Besides agricultural uses, the northeast quadrant includes public facilities and office uses such as the San Bernardino County Museum and the California Plaza Business Center. Big box retail and restaurant uses, and the San Bernardino County Postal Distribution Center are located to the northeast of the intersection of California Street and Redlands Boulevard. Medium-high density residential and industrial uses are located south of Redlands Boulevard in the southeast quadrant. The southwest quadrant, generally located within the City of Loma Linda includes low and medium-high density residential, and some agriculture uses. There is also a pocket of vacant land within this quadrant.

Table 9-1 shows the existing land uses within the station area:

Table 9-1: Existing Land Uses within ½ mile of the California Street Station

Land Use	Acreage
Agriculture	172
Commercial	58
Educational Facilities	14
Industrial	34
Low Density Residential	34
Medium-High Density Residential	44
Office	18
Public Facilities	28
Transportation and Utilities	34
Vacant	65
Grand Total	502

Source: SANBAG, Gruen Associates (2003)
Note: Station areas are 1/2 mile around each station location, with overlapping station areas being apportioned equally between individual stations.

- Almost 50% of the land is vacant or agricultural uses.

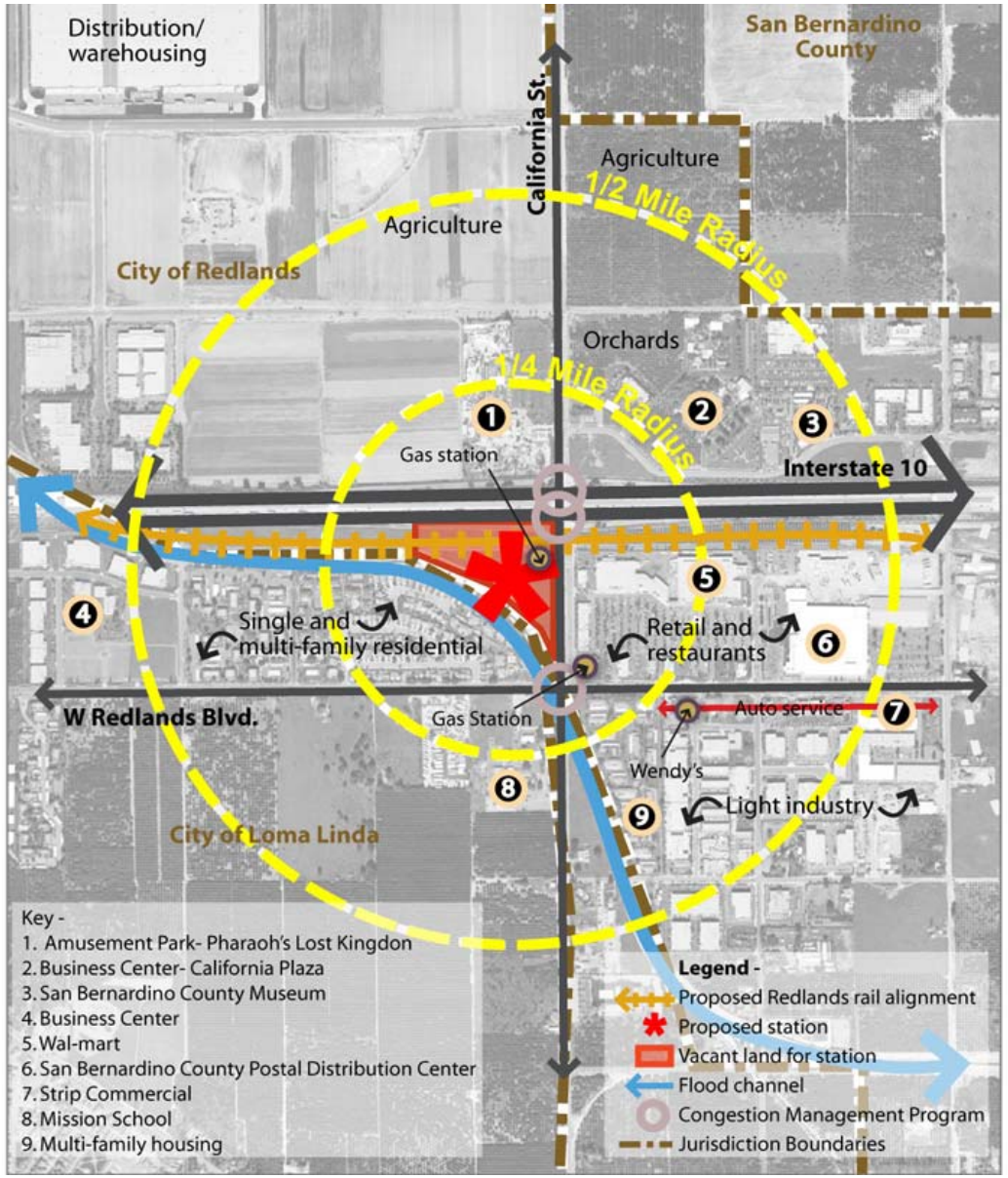


Figure 9-1: Existing Conditions Analysis at California Street Station

- Approximately 65 acres are vacant within ½ mile radius of the station and approximately 172 acres are agricultural land with orchards and other crops.
- The property at the northwest intersection of California Street and Lugonia Avenue has been approved for a new Kaiser Hospital.
- In the City of Loma Linda, approximately 300 acres of land between West Redlands Boulevard and Mission Road are under ownership of Lewis Homes and Cal 88.

Multi-family housing near the proposed station

Employment oriented uses are planned on vacant sites

Socio-economics within 1/2 mile of the Station are shown in Table 9-2.

Table 9-2: Socio-economics within ½ mile of the California Street Station (Census 2000)

Population	Total Population	954
	Under 18	223
	Over 65	83
	% Transit-dependent	32%
Housing Units	Total Housing Units	447
	0-Vehicle	44
	%0Vehicle	10%
Households	Total Households	416
	Below Poverty	69
	% Below Poverty	17%
Employment	Total Employment	440
	Using Public Transit	6
	% Using Public Transit	1%

General Architectural and Landscape Character

There is no single prevalent architectural vocabulary in this station vicinity. Residential buildings are one to two stories in height. Retail buildings such as Wal-Mart, Wendy's etc. are in their usual corporate character. The Pharaoh's Lost Kingdom is designed with eye-catching series of golden pyramidal buildings adding some variety to the more functional architecture in the area.

Accessibility to the Station Area

- Overall the station site has good vehicular accessibility. The location is next to the I-10 freeway on and off ramps. California Street and W Redlands Boulevard are both designated as arterial roadways. West Redlands Boulevard is 4 lanes wide with a tree-lined median and has new sidewalks and landscaping. California Street is 4-5 lanes wide with sidewalks along some sections but no landscaping.
- There are currently no dedicated bike paths. San Bernardino County Bikeway Map provides for Class II and Class III bike paths along W Redlands Boulevard and California Street south of W Redlands Boulevard.
- Pedestrian connections to the station site are currently weak with limited crossing points across the two main arterial streets. The residential development south of the site is fenced and does not provide any access to the station site or in the vicinity.

Barriers to Station Accessibility

- The freeway is a barrier for the north-south connection between the station and other uses north of freeway.
- The freeway ramps on California Street make it a busy street which is more automobile-oriented than pedestrian friendly. This will make provision of street level east-west connections across California Street difficult.
- The flood channel is both an amenity and a barrier for pedestrian trail connections. Consistent with City of Loma Linda's plans, trails can be developed along the channel that would provide exclusive pedestrian and bikeways. However, connections across the channel would require bridges which would be expensive to build.

Additional pedestrian crossings and access points to properties along California Street may not be permitted by Caltrans.

Connection from under the freeway


West Redlands Blvd. with sidewalk and landscaping

9.2 CITY PLANS AND POLICIES

Loma Linda Draft General Plan

- Land Use
  - A part of the southwest quadrant of the station area located south of Redlands Boulevard, and west of California Street is designated as Special Planning Area D (Redlands Boulevard/California Street) in the Loma Linda Draft General Plan. This area is planned for a variety of horizontal and vertical mixed uses, including commercial, office, institutional, business and/or industrial parks, and single family, and where appropriate multi-family residential.
  - The developed area to the north of Redlands Boulevard is designated for Medium High Density Residential (9.1 to 13 dwelling units per acre) and Low Density Residential (2.1 to 5 dwelling units per acre).
  - The area east of California Street is planned for commercial uses (0.5 FAR) and business park uses (0.5 FAR). Intended nature of development within the commercial designation includes shopping centers, specialty shops, stand-alone commercial uses and offices in small storefronts. The Business Park category allows for professional offices, research and development activities and light industrial uses in low to high-rise developments (one to five stories).
- Circulation/Enhancements
  - Improvements are proposed at the California Street/Redlands Boulevard intersection to realign the two streets and eliminate the current offset configuration.

Loma Linda Redevelopment Plan

Within the City of Loma Linda, the portion of the station area north of Redlands Boulevard is located in the Inland Valley Development Agency (IVDA) Project Area, and the portion south of Redlands Boulevard is located in the Merged Project Area.

Airport Influence Area

A small area in the northwest portion of the ½ mile station area is located within the Airport Influence Area.

Redlands General Plan

- Land Use
  - The northwest quadrant and portions of the northeast and southeast quadrants are designated in the Redlands General Plan for commercial/industrial uses. Uses permitted in the Commercial/Industrial category include shopping centers, business parks and manufacturing.
  - The area located between California Street, I-10 Freeway, Lugonia Avenue and Nevada Street, and some areas south of the I-10 Freeway are designated for commercial uses.
  - Public/Institutional uses are planned just south of the railroad right-of-way in the southeast quadrant.
  - Very low density residential use is planned adjacent to the City of Loma Linda, south of Redlands Boulevard. This allows for a density of 0 to 2.7 units per acre on slopes under 15 percent, and up to 1 unit per 2.5 acres on slopes of 15 to 30 percent.

- Circulation/Enhancements
  - The Circulation Element seeks to develop improvement plans for the I-10 freeway interchanges at California Street to ensure adequate capacity to meet future needs associated with the East Valley Corridor Specific Plan.
  - Class I routes (bike path) are planned along portions of California Street within the East Valley Corridor. This route would serve major commute destinations within the East Valley Corridor. Class II routes (bike lanes) are also planned along portions of California Street to provide good bike access between residential areas of Redlands and the East Valley Corridor.
- The General Plan allows a maximum of 400 housing units per year in the City based on an earlier citizen's initiative.
- The City has recently begun updating its General Plan.

East Valley Corridor Specific Plan

The portion of the station area within the City of Redlands is located within the boundaries of the East Valley Corridor Specific Plan, which was last revised in December 20, 2005 (Figure 9-2).

- Land Use Districts:
  - Most of the area north of the I-10 Freeway is located in the Special Development (Specific Plan EV/SD) Land Use District. The Special Development District is intended to provide an alternative, more flexible site planning process which allows for administrative professional commercial or industrial developments, or a mixture of such uses, within the framework of a single cohesive concept plan.
  - The area between the I-10 Freeway and Redlands Boulevard, west of New Jersey Street is located within the General Commercial (EV/CG) land use district. The General Commercial District allows for major department stores, administrative/professional headquarters and community or regional shopping centers. FAR for retail commercial buildings is 0.25, and for a regional mall is 0.4. FAR bonuses are allowed for the following. The total bonus shall not exceed 50% of the permitted FAR.
    - 20% FAR bonus for buildings providing structured parking
    - 15% FAR bonus for buildings providing amenity areas such as pedestrian arcades or plazas with significant visual features
    - 20% for providing additional landscaping, lakes, golf course or other open space amenities
    - 15% for providing a transportation management plan, including car and van pooling and flexible work scheduling
  - Area east of New Jersey Street is located within Public Institutional (EV/PI). The Public Institutional District is intended to preserve public facilities such as schools, post offices, fire stations, hospitals, civic centers, and publicly owned land.
  - Area south of Redlands Boulevard is located within the Multi-Family Residential EV2500RM and Commercial Industrial (EV/IC) land use districts. The Multi-Family Residential -2500 District allows for a density of up to 15 dwelling units per acre. The Commercial Industrial District allows wholesale, retail and service uses and light manufacturing of a non-polluting type.
- Community Design
  - California Street and Redlands Boulevard are designated as major arterials. Typical sections for major arterial include a right-of-way of 120 feet.
  - Sidewalks shall be placed outside of the right-of-way along Redlands Boulevard.

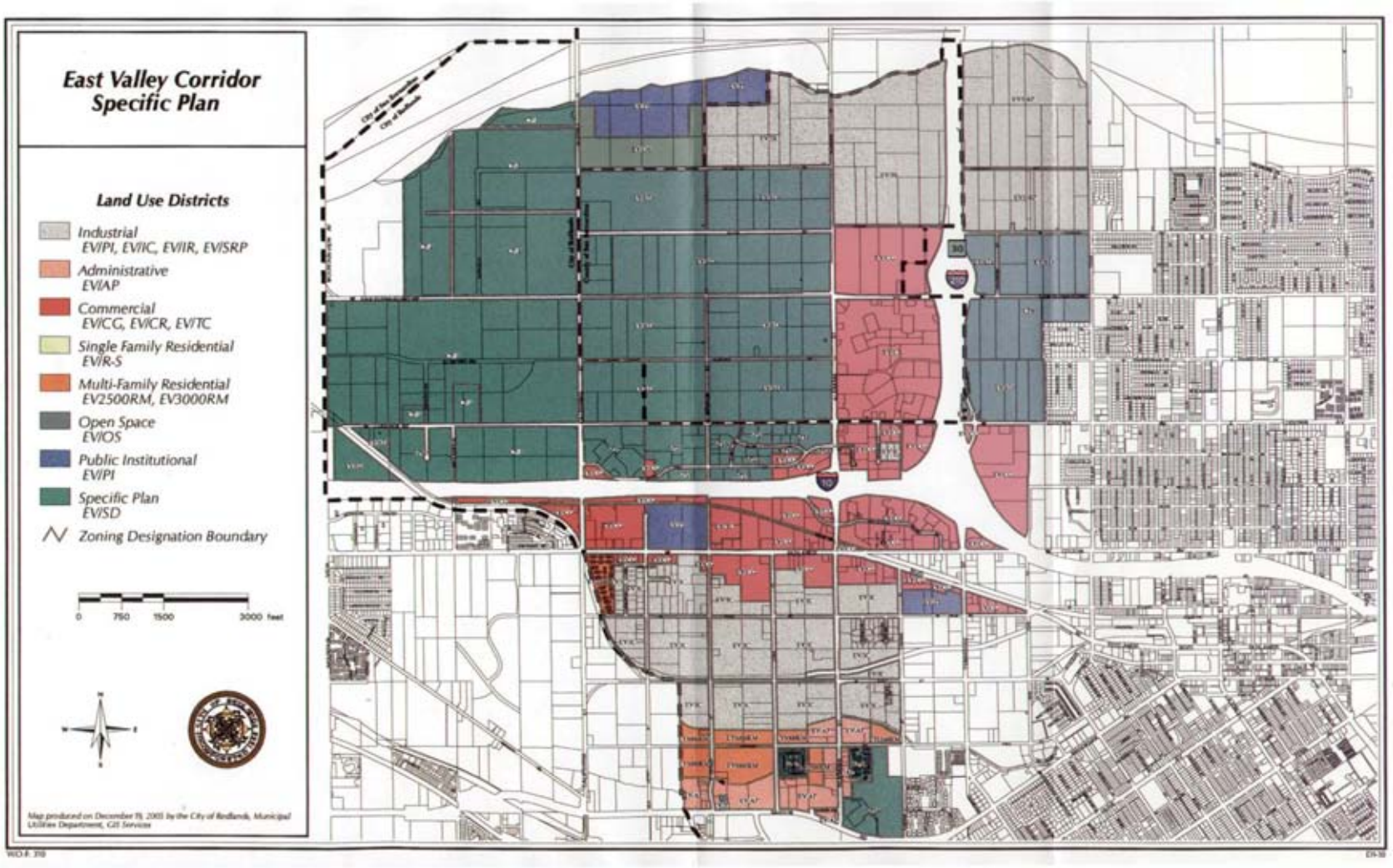


Figure 9-2: East Valley Corridor Specific Plan

- Redlands Boulevard and California Street area are called out as Special Landscaped Streets within the East Valley Corridor area. Specific design guidelines for sidewalks, groundcover within public right-of-way, street trees and medians have been established for each of these streets.
- A trail system including bike paths is proposed along California Street.

- Parking Requirements
  - For multiple-family residential, a minimum of one covered space per unit is required. For studios, 1 space/ unit; for one bedroom, 1.5 spaces/unit with 0.5 space per additional bedrooms; plus for guest parking 0.25 spaces/ bedroom or sleeping quarters is required.

PROPOSED DEVELOPMENTS

Currently there are three major developments planned in the station vicinity:

- Orchard Park Development in the City of Loma Linda
  - Orchard Specific Plan is a development planned by Cal 88 at the south-west intersection of West Redlands Boulevard and California Street.
  - It includes 47.4 acres of mixed-use along California Street and 18.4 acres of commercial use along West Redlands Boulevard.
  - In addition, it also plans for approximately 900 residential uses with the majority planned as multi-family units.
- University Village in the City of Loma Linda
  - This specific plan development is planned by Lewis Homes.
  - The plan includes 14.56 acres of commercial development.
  - It proposes approximately 1200 residential units configured in multi-family apartments, condominium units and small lot single family houses.
  - The plan also provides for a private Community Center and a school.
- Kaiser Hospital Building in the City of Redlands
  - The property at the north-west intersection of California Street and Lugonia Avenue has been approved for Kaiser Hospital building.
- In addition, City of Loma Linda has plans for the realignment of California Street and the development of a pedestrian and bike trail along the flood channel.

9.3 ISSUES, OPPORTUNITIES AND CONSTRAINTS

Issues

- There is existing traffic congestion near the freeway and at the intersection of California Street and I-10 Freeway.
- Nearness to freeway exit would prevent easy pedestrian linkages to the north of freeway.
- Annual housing approval cap and low FAR's in City of Redlands could limit development.
- An initiative is under consideration which would restrict the minimum lot size in City of Loma Linda and could affect densities of proposed projects.

Opportunities

- Major developments planned in the area would increase both housing density and employment in the station vicinity.
- This includes mixed-use and large housing projects (approximately 2,100 units) south of Redlands Boulevard in the City of Loma Linda.
- There exists a healthy mix of uses in the vicinity- residential, retail, office, agriculture, entertainment and institutional.

- Abundant vacant land north of freeway provides opportunity for new employment generating or residential developments.
- There is redevelopment potential for the commercial site adjacent to the station and which currently has Wal-Mart as the anchor (Wal-Mart may move to another site).
- The flood channel with new public amenities could link together existing and new development to the station vicinity.

Constraints

- The freeway which limits crossings to a freeway bridge is a barrier to north-south pedestrian connections.
- Vehicular access to the site directly adjacent to station area is difficult.
- The East Valley Corridor Specific Plan limits residential land use in commercial areas and only allows low FAR's which lead to large surface parking lots which are not conducive to transit development.
- The East Valley Corridor Specific Plan parking requirements for multi-family residential including guest parking are 1.75 spaces per one bedroom unit and 2.25 spaces per two bedroom unit. Also, retail parking requirements are one space per 200 SF for neighborhood centers to one space per 250 SF for large shopping centers. These standards oriented are typical for suburban development, but are excessive for transit-oriented developments.
- A preliminary hazardous materials search uncovered active cases of Leaking Underground Storage Tanks (LUST) in the station area, including one in close proximity to the station site. A number of other hazardous materials sites were identified in the station area.
- Measure U limits areas which were in agricultural uses in 1987 to a residential density of 2.7 units/acre unless certain findings are made by the City Council.

9.4 ALTERNATIVES

Chapter 4 illustrates the land use alternatives and linkage alternatives and the preferences of the task force and participants in the community workshops for these alternatives. Alternative 2 – Mixed-use South of the Freeway only" was preferred by those attending the community workshop. Alternative 2 will be the land use direction refined for this plan, however due to technical considerations the station and park and ride will be located on the east side of California Street, rather than the west side.

9.5 GOALS AND OBJECTIVES

The goals and objectives for planning the California Street transit village include:

- Redevelop the area bounded by California Street, Redlands Boulevard, the railroad tracks and New Jersey Avenue to establish a new mixed-use designation organized around a "town-center" green with the rail station as a focus and with strong linkages to the surrounding neighborhoods.
- Plan for more intensive employment uses north of the freeway with linkages to the planned rail station.
- Provide clearly defined and attractive landscaped pedestrian and bicycle linkages between the planned mixed use development south of Redlands Boulevard in Loma Linda and the planned rail station.

9.6 LAND USE CONCEPTS AND LINKAGES

The land use concepts envisioned for the California Street station area emphasize mixed use south of I-10 freeway and intensive employment uses north of the freeway (Figure 9-3 and Table 9-3). The passenger rail station, planned to the east side of California Street would be located next to the grove of trees and adjacent to an existing shopping

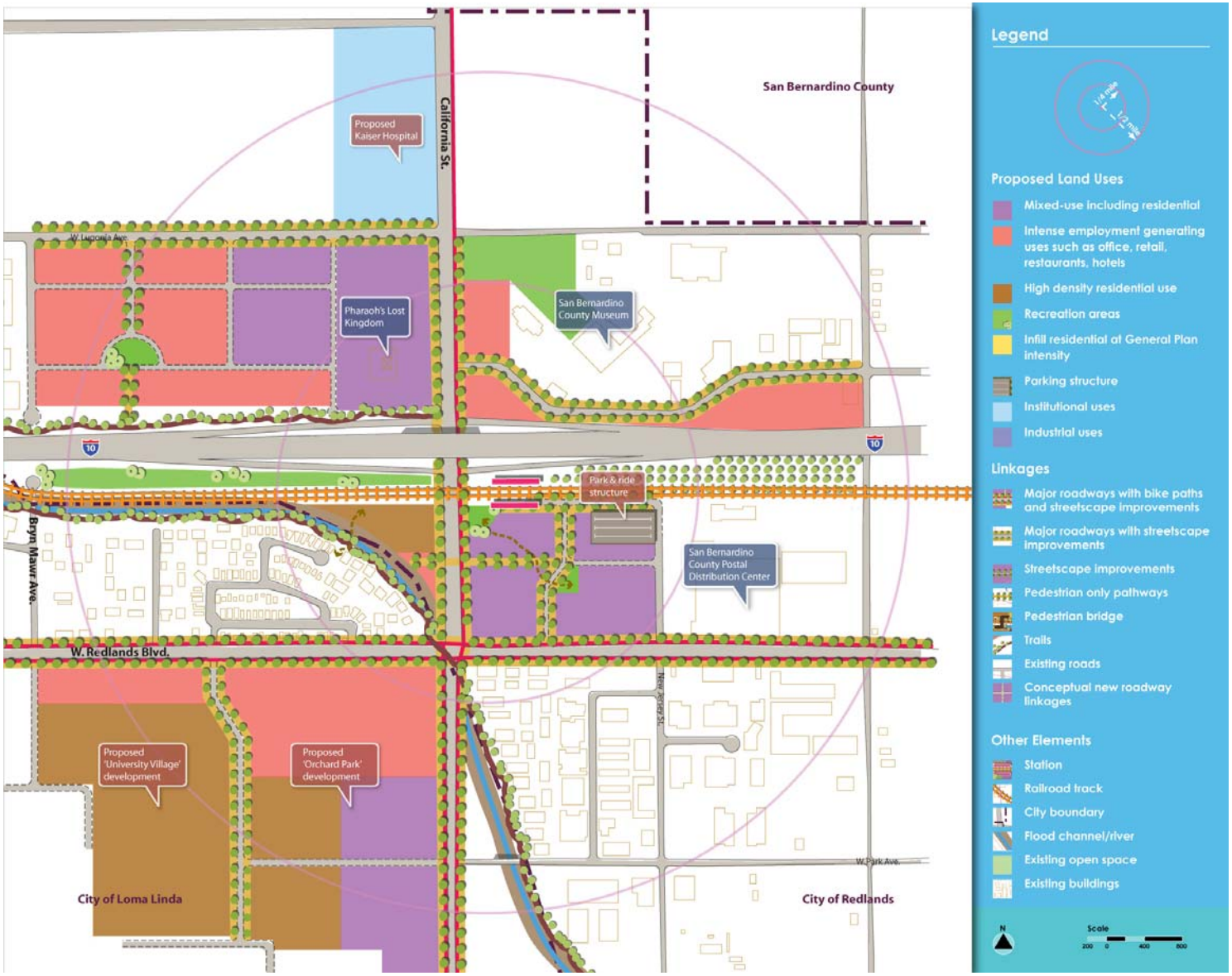


Figure 9-3: California Street Station Area Land Use and Linkage Concept

center which currently has big box retail (Walmart and Food 4 Less) and surface parking. This shopping center could be transformed into more transit-supportive uses including a mix of shops, restaurants, entertainment venues, community facilities, and housing organized around attractively landscaped outdoor pathways interconnecting with the station and a public gathering space for the surrounding neighborhoods. Building height would vary from two to five stories and a parking structure would serve the center and transit. The character could be similar to Victoria Gardens, the Claremont Village or downtown Fullerton.

Table 9-3: Development Potential within 1/2 mile of the station at maximum build-out (approximate values)

Potential population	5,782
Potential employment	10,348
Proposed dwelling units	2,283

Also new streetscape improvements along California Street and Redlands Boulevard would link the new mixed use development planned in Loma Linda and employment intensive uses north of the freeway with the station. Trails planned along the flood control channel would also link developments in ¼-mile area of the station.

Figure 9-4 illustrates one possible layout reflecting the land use and linkages concept.

Figure 9-4: California Street Station Area - Illustrative Concept

Many other layouts are feasible using the same policies.

9.7 LAND USE AND POLICY RECOMMENDATIONS

Land use polices include:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of this report to plan and design each project and the public streetscape along with the East Valley Corridor Specific Plan.
- Redevelop the area between California Street, New Jersey Avenue, the railroad tracks and Redlands Boulevard as a mixed use catalyst project with neighborhood retail, food stores, restaurant, multi-family housing,

entertainment, community facilities, other neighborhood serving, other transit supportive uses, and parking shared between the development and transit riders. Include a public gathering place/focal point at the station, a shared parking structure for park and ride, kiss and ride, wide landscaped sidewalks, and pedestrian pathways/open spaces lined with shops and restaurants leading to the station.

- Locate residential units which are a part of a mixed-use center at least 300 ft away from the I-10 freeway right-of-way and at greater distances if necessary to address noise and air quality concerns.

- Vary the building mass of the mixed use center adjacent to the station with two or three stories in height near Redlands Boulevard and up to four stories in height in the center of the site (Figure 9-5).

- As nearby transit reduces a household's need for multiple automobiles, reduce the residential parking requirements for a project which is part of a mixed use center and is within ¼ miles of the rail transit station. This reduction could be facilitated by sharing the residential parking required for guests with transit park and ride spaces and by requiring only one covered parking space to be assigned for residential units and the other required spaces shared with commercial and transit uses. In this case, a shared use study should be prepared describing the shared nature of parking for proposed uses.

- Plan high employment uses on areas north of the freeway which were used for agricultural uses in 1987.

9.8 CIRCULATION AND LINKAGE POLICY RECOMMENDATIONS

Circulation and linkage policies to implement the linkage concept (Figure 9-6) include:

- Improve both California Street and Redlands Boulevard which are designated in the City's plans as 120 ft wide major arterials with streetscape improvements in adjacent 30 ft setback areas.

  - For California Street, modify the community design concept in the East Valley Corridor Specific Plan which shows a six-foot wide sidewalk at the curb by placing the palms near the curb in a parkway and a widened sidewalk to improve the pedestrian's safety and connections from the neighborhood (Figure 9-4). In addition, keep the Class I bike path recommended in the Specific Plan.

  - For Redlands Boulevard in the mixed-use area, the parking setback should not be less than the building setback as this encourages parking along the street. Allow the setbacks to the buildings in the mixed-use area to be

Figure 9-5: Proposed Cross-Section for the Mixed-Use Center adjacent to the Station

reduced when shops and restaurants and their entrances face Redlands Boulevard's sidewalks and a landscaped pedestrian-friendly character as envisioned in the City's plans is retained.Plan the intersection and pedestrian crossings of California Street and Redlands Boulevard and the flood control channel to facilitate pedestrian access to the rail station.

- Plan for the improvement of the pedestrian undercrossing of the freeway for wider pedestrian crossings which are well lit.

- Incorporate the multi-purpose trail planned along the flood control channel in developing any adjoining development.

- Each project developed in the area should incorporate clearly defined pedestrian connections and signal pedestrian connections to the stations.

- Provide feeder bus service to developed area north of I-10.

9.9 IMPLEMENTING POLICIES

- Make necessary improvements to the General Plan, East Valley Corridor Specific Plan and Zoning to permit mixed use at densities and floor area ratios consistent with other transit-oriented developments in other cities and to implement the above policies.

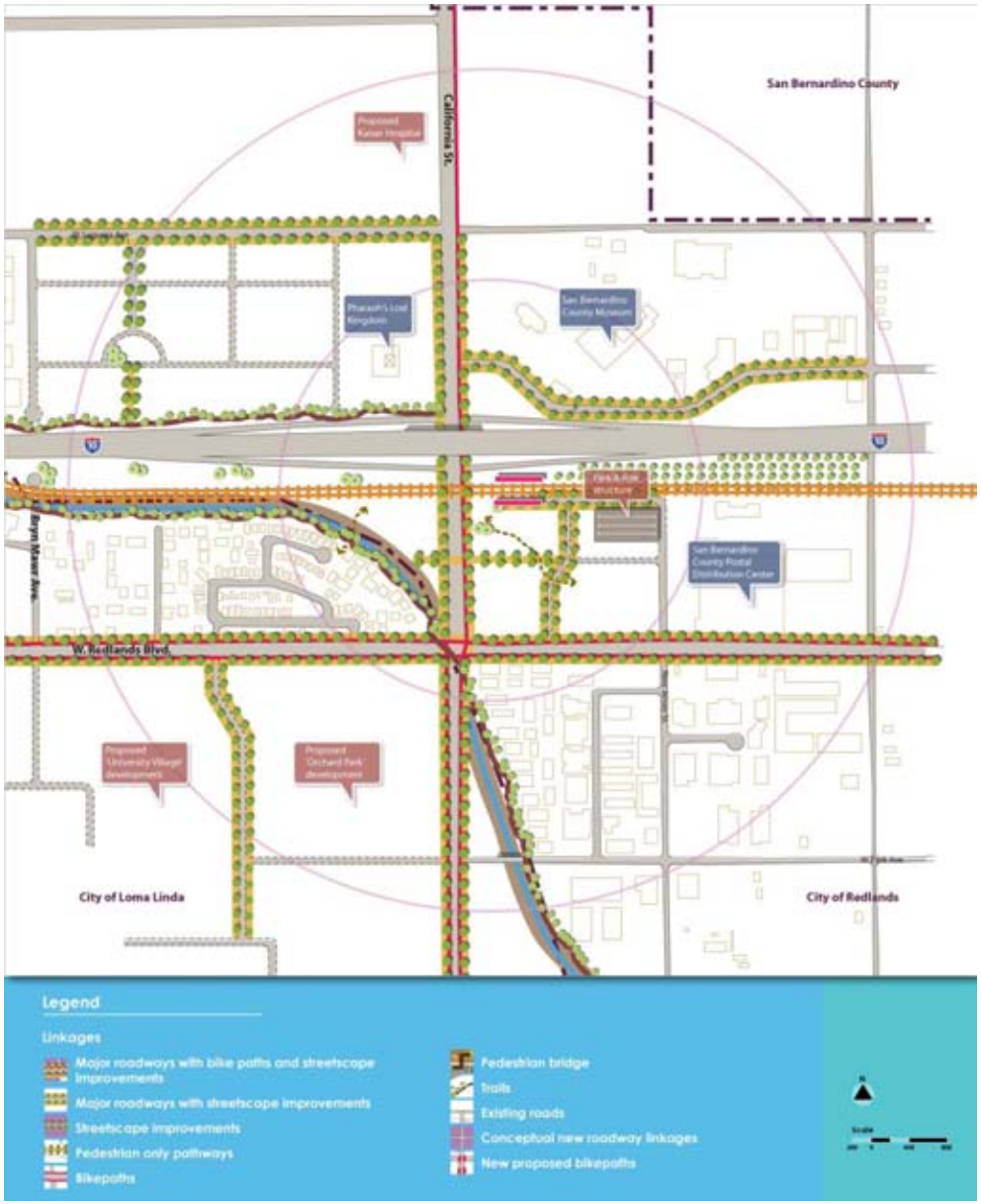


Figure 9-6: California Street Station Area Linkage Concept

- Create a new mixed-use land use category as a part of the East Valley Corridor Specific Plan or modify existing commercial category which permits commercial and residential uses with densities up to 27 units/acre and FARs up to 2.0 in the station areas if community benefits such as station canopy, station amenities, special landscaping, pedestrian improvements and community uses are provided.

- Work with Caltrans on ramp improvements, signalization, station locations, pedestrian crosswalks along California Street, and landscape treatment to ensure that overall TOD character envisioned is achieved.

- As Redlands has a growth limit of 400 units per year, a phased approach to station area development should be considered with downtown as first priority and then priority given to TOD projects in other station areas which provide public benefits and amenities such as pubic gathering spaces, park-and-ride spaces, station construction and amenities, a substantial number of jobs, and high density owner occupied housing with outdoor recreational space.

9.10 RIDERSHIP AND TRANSPORTATION ANALYSIS

The travel demand model described in Chapter 5 was used to estimate the Redlands Rail ridership at the California Street Station. The model results show that this station would have the third highest ridership demand of the seven stations in the Redlands Rail system in either of the land use scenarios.

Table 9-4 shows that the California Street Station serves as the boarding or alighting point for 2,570 daily passengers in the Baseline Land Use Scenario. The ridership demand at this station increases by 34 percent to 3,440 passengers in the Intensified Land Use Scenario.

Walking is the most popular mode of access at the California Street Station, with 60 percent of the access share under both land use scenarios.

Table 9-4: Ridership Statistics at California Street Station

Measure	Land Use Scenario	
	Baseline	Intensified
Daily Ridership by Access Mode		
Walk	1,450	2,150
Auto	920	1,190
Transfer	200	100
Daily Total	2,570	3,440
AM Peak Hour	270	390
PM Peak Hour	250	310
Parking Spaces	370	480

This station is assumed to be the site of one of a park-and-ride lot in the horizon year (2030) transit network. This station attracts the highest magnitude of auto access of the three park-and-ride lots along the Redlands Rail Corridor. The estimated demand for parking spaces due to the Redlands Rail line is 370 spaces in the Baseline Scenario and 480 spaces in the Intensified Scenario.

The remainder of the access to the California Street Station (approximately five percent of total access) results from transfers to and from the two transit routes that serve this station.

The peak hour of ridership demand at the California Street Station in the Baseline Land Use Scenario is the 270 passengers forecast to board or alight from Redlands Rail trains during the AM Peak Hour. This represents an average of 17 passengers per train (assuming eight trains per hour in each direction of travel). In the Intensified Land Use Scenario, the peak hour of ridership demand at this station is the 390 passengers during the AM Peak Hour, which translates to 24 passengers per train.

This page intentionally left blank.

10

ALABAMA STREET STATION AREA PLAN

The station is planned on the east side of Alabama Street and north of West Redlands Boulevard. The Alabama Street station area is located almost entirely in City of Redlands, with a small area at the northern edge in County of San Bernardino (northeast quadrant).

10.1 BACKGROUND AND PLANNING CONTEXT

Existing Land Uses and Demographics

The predominant land use in the area is commercial followed by industrial uses (Figure 10-1 and Table 10-1). The area seems to be developing with low intensity uses such as several commercial centers and a new office complex. A substantial amount of the area is devoted to the I-10 and State Highway 30 interchange. Uses within ¼ mile radius of the proposed station include the Tri-City Shopping Center (anchored by Mervyn's) an auto dealership, several gas stations, a new hotel, several fast food restaurants, strip commercial and light industry. A new large shopping center (Citrus Plaza) anchored by Target is located just outside the northern edge of the ½ mile station area.

Approximately 138 acres or over 30% of the area was vacant in 2003. Some new development to the north of I-10 and to south of West Redlands Boulevard has occurred and this figure would be much lower today. Most of the vacant land is to the south of West Redlands Boulevard, which has some office complexes under construction. The New Redlands Public Safety Building is also planned in this area.

Table 10-1: Existing Land Uses within ½ mile of the Alabama Street Station Area

Land Use	Acres
Agriculture	21
Commercial	192
Industrial	68
Low Density Residential	9
Office	12
Public Facilities	5
Transportation and Utilities	56
Under Construction	1
Vacant	138
Grand Total	502

Source: SANBAG, Gruen Associates (2003)

Retail use in Tri-City Center

Figure 10-1: Existing Conditions Analysis at Alabama Street Station Area

Socio-economics within 1/2 mile of the station are shown in Table 10-2:

Table 10-2: Socio-economics within ½ mile of the Alabama Street Station (Census 2000)

Population	Total Population	457
	Under 18	100
	Over 65	23
	% under 18, over 65	27%
Housing Units	Total Housing Units	227
	0-Vehicle	13
	%0Vehicle	6%
Households	Total Households	213
	Below Poverty	20
	% Below Poverty	10%
Workers 16 years and over	Total Employment	248
	Using Public Transit	1
	% Using Public Transit	0.3%

General Architectural and Landscape Character

The overall character of the area is vehicular-oriented consisting of big box retail establishments with large surface parking visible from the street. The architectural character is primarily established by convenience shopping centers typical of the last several decades and new big box centers of today.

There is limited landscaping in the area except that associated with some of the newer development to the north.


Business Park within the station area

Accessibility to Each Station Area

The station area has excellent vehicular access, bus access, and planned bicycle access as described below:

- There is a direct vehicular access to the station area from I-10 along Alabama Street.
- East-west access to the station is from West Redlands Boulevard. However, closer to the station East Colton Avenue intersects diagonally with West Redlands Boulevard near to the railroad alignment creating traffic congestion in the vicinity of the proposed station area.
- The railroad alignment bisecting the station area restricts both vehicular and pedestrian access in the area limiting the north-south crossings to Alabama Street, Tennessee Street and Nevada Street.


Heavy traffic at Alabama Street and Redlands Boulevard intersection

- Located in the northern portion of the ½ mile circle, I-10 freeway limits pedestrian access to the station.


Streetscape along W Redlands Boulevard

- Alabama Street station area is served by Bus Route 8 and Route 19 of Omnitrans. Route 15 connects West Lugonia Avenue to the northern portions of the City and to City of San Bernardino.
- Alabama Street and West Redlands Boulevard are designated in the San Bernardino Countywide Bicycle Map for Class II and III bike paths, respectively.

10.2
CITY PLANS AND POLICIES

Redlands General Plan (Figure 3-6)

- Land Use
  - Most of the station area north of the I-10 freeway is designated for commercial uses.
  - The southern portion of the station area is designated for commercial and commercial/industrial uses. Uses permitted in the Commercial/Industrial category include shopping centers, business parks and manufacturing.
- Circulation/Enhancements
  - The Circulation Element seeks to develop improvement plans for the I-10 freeway interchanges at Alabama Street to ensure adequate capacity to meet future needs associated with the East Valley Corridor Specific Plan.

East Valley Corridor Specific Plan

The portion of the station area within the City of Redlands is located within the boundaries of the East Valley Corridor Specific Plan.

Land Use Districts

- Most of the station area is located in the Commercial (General Commercial EV/CG) Land Use District. The General Commercial District allows for major department stores, administrative/professional headquarters and community or regional shopping centers. FAR for retail commercial buildings is 0.25, and for a regional mall is 0.4. FAR bonuses are allowed for the following. The total bonus shall not exceed 50% of the permitted FAR.
  - 20% FAR bonus for buildings providing structured parking
  - 15% FAR bonus for buildings providing amenity areas such as pedestrian arcades or plazas with significant visual features
  - 20% for providing additional landscaping, lakes, golf course or other open space amenities
  - 15% for providing a transportation management plan, including car and van pooling and flexible work scheduling
  - Some land parcels towards the south of station area are under Commercial Industrial EV/IC Land Use District. The Commercial Industrial District allows wholesale, retail and service uses and light manufacturing of a non-polluting type.

Community Design

- Alabama Street and Redlands Boulevard are designated as 120-ft wide major arterials with sidewalks placed outside of the right-of-way along Alabama Street and Redlands Boulevard in setback areas.
- Redlands Boulevard and Alabama Street are called out as Special Landscaped Streets within the East Valley Corridor area. Specific design guidelines for sidewalks, groundcover within public right-of-way, street trees and medians have been established for each of these streets. Washingtonian Robusta Palm is the designated street tree for Alabama Street and the Canary Island Palm and Liquidambar are the street trees along Redlands Boulevard.
- A 30-ft setback for buildings and a 15-ft setback for parking is required along Alabama Street.
- A 25-ft setback for buildings and a 15-ft parking setback is required along Redlands Boulevard.
- Lugonia Avenue is designated as a major highway.

Landscaping in the station area

Redevelopment Plan

Some area within ½ mile radius of the station is located within the Redlands Redevelopment Project Boundary. Redlands Redevelopment Project Area is a tool to encourage new construction which is sensitive to the historic context of the area and ties itself to the existing older structures.

Proposed Projects

- The developer of the Tri-City Center is planning to redevelop the existing shopping center into a “lifestyle center,” a mixed-use project with housing, office, entertainment and retail organized along a pedestrian-oriented internal main street. Some major existing tenants will be incorporated in the redevelopment and adjacent properties will need to be consolidated with the development.

As a part of this project East Colton Avenue would be realigned to eliminate the diagonal intersection with West Redlands Boulevard.

- The City is planning to relocate the Public Safety building within the station area.

10.3 ISSUES, OPPORTUNITIES AND CONSTRAINTS

Issues

- Existing uses in the area are low in intensity, vehicular oriented and not pedestrian friendly.
- Traffic congestion from freeway access at Alabama Street, diagonal intersection of East Colton Avenue and West Redlands Boulevard and the barrier created by the railroad and the freeway make pedestrian linkages to the station difficult.

Opportunities

- The redevelopment of the Tri-City Shopping Center with a mix of uses and the realignment of East Colton Avenue would provide a more transit supportive and pedestrian friendly environment directly adjacent to the station.
- The City Public Safety project could be a catalyst for more intense development in the area.
- Implementation of Alabama Street and Redlands Boulevard as "Special Landscape Streets" in the City's plan including pedestrian pathways, bicycle routes, attractive bus stops and landscaping would improve linkages to a potential station.

Constraints

- The freeway and railroad tracks are restrictive for pedestrian linkages for the entire station area.
- No residential uses are designated in the City of Redlands General Plan.
- Location of residential use directly adjacent to the freeway may not be desirable.
- Managing congestion at the Alabama Street and Redlands Boulevard intersection along with developing the station area as transit-oriented and pedestrian-friendly would be difficult.

10.4 ALTERNATIVES

Chapter 4 shows the land use alternatives considered and the preferences of the task force and participants at the community workshops. Alternative 2 – "Mixed-use at Tri-City Shopping Center and High Density Housing Around a New Open Space" was the preferred alternative.

10.5 GOALS AND OBJECTIVES

The goals and objectives for planning of Alabama Street station area include:

- Revitalize the Tri-City Shopping Center and adjoining properties as a more pedestrian-friendly and transit-supportive development.
- Introduce high-density housing opportunities focused on new major open space within ½-mile of the transit station.
- Provide a trail along the railroad tracks where, feasible and improve streetscapes to transform the character and link adjoining development to the station.

10.6 LAND USE CONCEPT AND LINKAGES

The land use and linkage concept envisioned for the Alabama Street Station emphasizes mixed-use at the Tri-City Shopping Center site and along Redlands Boulevard as well as multi-family residential focused around a new open space. This overall concept, illustrated in Figure 10-2, anticipates that the location of specific land uses will be refined as a part of the City of Redlands General Plan update. Table 10-3 provides approximate land use tabulations of this land use concept.

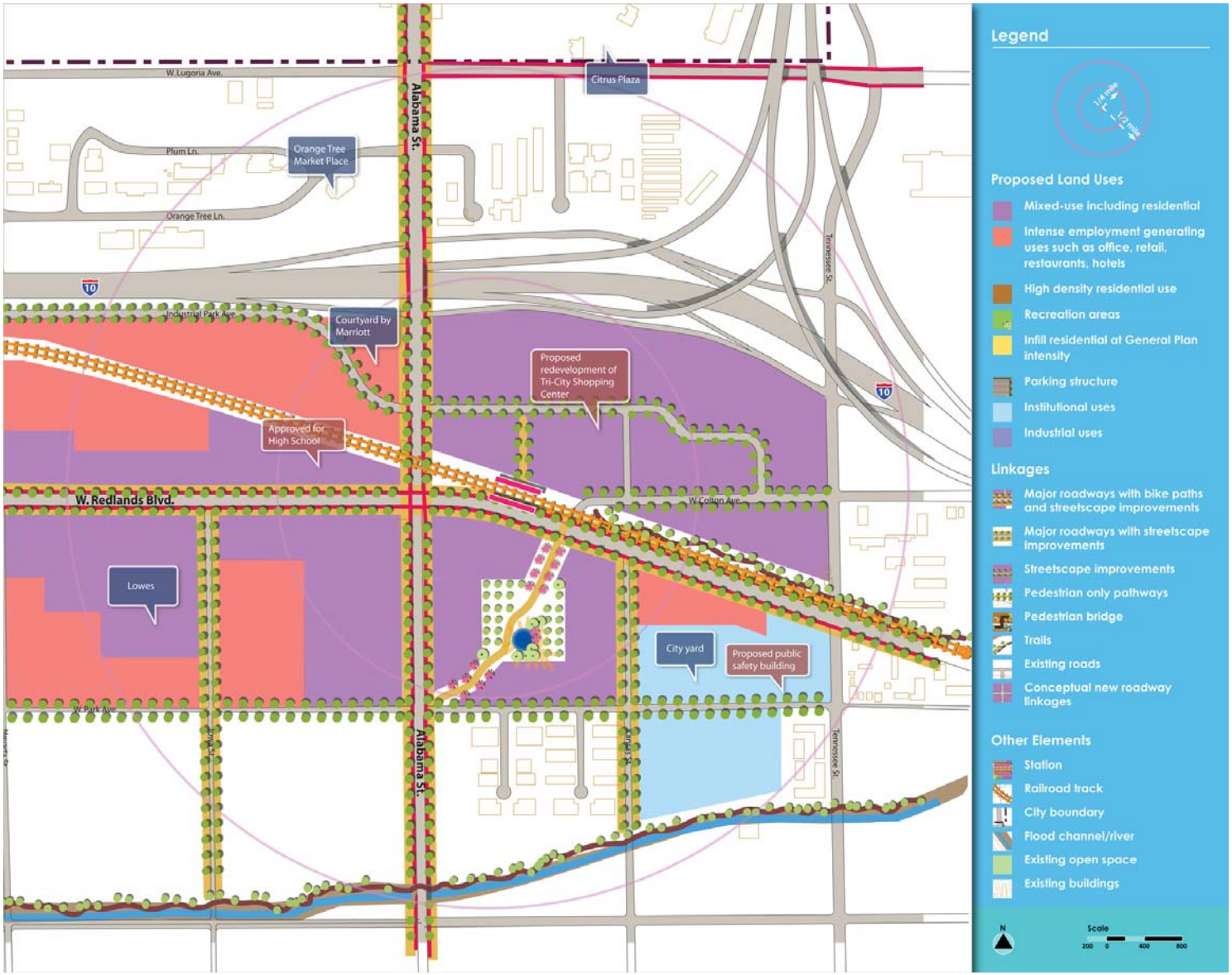


Figure 10-2: Alabama Street Station Area Land Use Concept

Table 10-3: Development Potential within 1/2 mile of the station at maximum build-out (approximate values)	
Potential population	3,800
Potential employment	13,000
Proposed dwelling units	1,500

In this concept, Colton Avenue is realigned per the City's plan to intersect with Redlands Boulevard at a 90 degree intersection to reduce traffic congestion at the five legged Alabama Street and Redlands intersection. The station would be located directly to the north of Colton Avenue and integrated into the proposed revitalized Tri-City development. The Tri-City redevelopment envisions a walkable environment organized along a main street with wide landscaped sidewalks and ample pedestrian amenities similar to the promenades in Santa Clarita, Victoria Gardens or Santa Monica. A paseo/pedestrian pathway would link the station to this main street and to the proposed housing and mixed-use development in the remainder of the area.

10.7 LAND USE POLICY RECOMMENDATIONS

Land use polices to realize the land use concepts include:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of this report to plan and design each project and the public realm streetscape
- Locate the rail station east of Alabama Street and north of Redlands Boulevard where the right-of-way is 50 feet wide.
- Plan for redevelopment of the Tri-City Shopping Center into a mixed-use center with department stores, retail shops, restaurants, entertainment uses, offices, housing, and other neighborhood service uses organized around a main street and intersecting pedestrian pathways. This main street shall have wide tree-lined sidewalks with ample pedestrian amenities. A strong pedestrian connection should be provided from this "main street" to a public gathering space adjacent to the planned rail station.
- Locate residential units which as part of a mixed use area are at least 300 feet away from the I-10 freeway right-of-way and at greater distances if necessary to address noise and air quality concerns.
- Plan for mixed use along Redlands Boulevard replacing existing auto oriented uses.
- When appropriate, incorporate larger retail businesses in new developments, such as supermarkets and home improvement stores while adding transit supportive uses.
- Plan for mixed-use development along Redlands Boulevard west of Alabama Street replacing existing auto-oriented development:
  - Buildings and their entrances should be located close to Redlands Boulevard with parking in the rear, underground, or in an above-ground parking structure. (See guidelines in Chapter 2 for treatment of parking.)
  - Existing retail uses such as supermarkets and home improvement stores may be incorporated into redeveloped sites in addition to more transit supportive uses such a small retail shops, restaurants, and housing
- Plan for multi-family, high-density residential development south of Colton Avenue focused on a new green space with active and passive recreational uses. Provide special landscaping treatment such as screening walls and berms to buffer multi-family from adjacent planned industrial uses and the city yards.
- As nearby transit reduces a household's need for multiple automobiles, reduce the residential parking requirements of a project which is part of a mixed-use center which is within ¼ mile of a transit station. This reduction could be facilitated by combining residential parking required for guests with commercial parking and by requiring only one covered space assigned to a unit. The other

required residential parking space could be shared with commercial or office uses. In this case, a major project should prepare a shared use parking study describing the shared nature and management of this parking.

10.8 CIRCULATION AND LINKAGE POLICY RECOMMENDATIONS

Circulation and linkage policies include (Figure 10-3):

- Reconfigure Colton Avenue to intersect with Redlands Boulevard at 90 degrees.
- Provide pedestrian crossing of Redlands Boulevard at this realigned Colton Avenue to link areas south of Redlands Boulevard with the station.
- Improve both Alabama Street and Redlands Boulevard which are designated in the City's plans as 120-ft wide major arterials with streetscape improvements in the adjacent 25 ft to 30 ft setback areas.
    - For Alabama Street in the mixed-use area, the parking setbacks should not be less than the building setbacks as this encourages parking adjacent to the street. Allow the 30-ft setbacks to buildings be reduced when shops and restaurants and their entrances face Alabama Street's sidewalks and the

Figure 10-3: Circulation and Linkages Plan for Alabama Street Station Area

pedestrian character envisioned is provided.

  - For Redlands Boulevard in the mixed use areas, the parking setback should not be less than the building setback to encourage buildings along the street, not parking. Allow the setbacks to buildings in the mixed use areas be reduced when shops and restaurants and their entrances face Redlands Boulevard's sidewalks and a landscaped pedestrian-friendly character as envisioned by the City's plan is retained.

- Each project developed in the area should incorporate clearly defined landscaped pedestrian connections to Redlands Boulevard and Alabama Boulevard and on to the station.

- Provide feeder bus service to developed area north of I-10.

10.9 IMPLEMENTING POLICIES

- Modify the General Plan and East Valley Corridor Specific Plan to permit mixed use and housing in the area at transit-supportive densities and intensities.

- Provide density and intensity incentives in these plans for adjoining developments to construct the rail station and pedestrian amenities around the station and paths leading to the station.

- Work with property owners and the redevelopment agency of the City of Redlands to consolidate properties to create catalyst mixed use centers which integrate transit supportive uses and densities in a pedestrian-friendly environment linked to the station.

- Phase redevelopment of other properties for mixed use over time as development become obsolete incorporating existing business such as home improvement stores, a supermarket in a more walkable environment with more transit supportive uses, and parking structures for more compact development.

- As Redlands has a growth limit of 400 units per year, a phased approach to station area development should be considered with downtown as first priority and then priority given to TOD projects in other station areas which provide public benefits and amenities such as pubic gathering spaces, park-and-ride spaces, station construction and amenities, a substantial number of jobs, and high density owner occupied housing with outdoor recreational space.

10.10 RIDERSHIP AND TRANSPORTATION ANALYSIS

The travel demand model described in Chapter 5 was used to estimate the Redlands Rail ridership at the Alabama Street Station. Table 10-4 shows that the Alabama Street Station serves as the boarding or alighting point for 1,280 daily passengers in the Baseline Land Use Scenario. The ridership demand at this station increases by 58 percent to 2,020 passengers in the Intensified Land Use Scenario.

Walking is the most popular mode of access at the Alabama Street Station, with 90 percent of the access share under the Baseline Scenario. The residential and employment development assumed for the Intensified Land Use Scenario causes the walk access share to increase to 94 percent of the total access to this station.

Table 10-4: Ridership Statistics at Alabama Street Station

Measure	Land Use Scenario	
	Baseline	Intensified
Daily Ridership by Access Mode		
Walk	1,140	1900
Auto	-	-
Transfer	140	120
Daily Total	1,280	2,020
AM Peak Hour	80	140
PM Peak Hour	170	250
Parking Spaces	-	-

The remainder of the access to the Alabama Street Station results from transfers to and

from the two transit routes that serve this station.

There is no auto access forecast at this station because no park-and-ride lot is assumed in the horizon year (2030) transit network.

The peak hour of ridership demand at the Alabama Street Station in the Baseline Land Use Scenario is the 170 passengers forecast to board or alight from Redlands Rail trains during the PM Peak Hour. This represents an average of approximately 10 passengers per train (assuming eight trains per hour in each direction of travel). In the Intensified Land Use Scenario, the peak hour of ridership demand at this station is the 250 passengers during the PM Peak Hour, which translates to approximately 16 passengers per train.

11

ORANGE STREET-DOWNTOWN REDLANDS STATION AREA PLAN

As discussed in Chapter 3, at the start of the project, there were three alternatives for the rail station under consideration in Downtown Redlands: 1) Orange Street located at/or near the historic Santa Fe Depot; 2) Oriental Avenue just west of Eureka; and 3) 7th Street and Stuart Avenue. The Orange Street-Downtown station was studied earlier in the 2003 Feasibility Study and is the preferred station site location by SANBAG, the community members attending the workshop and the task force. The second choice was Oriental Avenue just west of Eureka Street. If for some reason the second choice location is later selected, it is assumed that the rail line would continue on to the University of Redlands, and not terminate in downtown as in the Draft Downtown Plan. Text in this section refers to the alternative stations as well unless stated. At the end of this section, opportunities and constraints of each station are compared.

11.1 BACKGROUND AND PLANNING CONTEXT

Existing Land Uses and Demographics

Downtown Redlands has a wide range of existing uses in the station areas as shown in Table 11-1 and Figure 11-1. Predominant uses are commercial uses with low density residential occupying the area within the ¼ to ½ mile ring. Along Orange Street are pedestrian-oriented retail and restaurant uses which continue from Interstate 10 to the Redlands Mall and along State Street, a pedestrian-oriented shopping street. Civic uses, including the City Hall and library are found in the southern portion of the station area. In general, districts identified in the Downtown Specific Plan are currently developed as single uses, although mixed-uses are permitted. Table 11-1 indicates that land uses are relatively similar between the Orange Street station area and the other two alternatives. The Orange Street station area has slightly more commercial and less residential.

Residential uses in Redlands

Table 11-1: Comparison of Existing Land Uses within ½ mile of the Alternative Downtown Stations			
	Acreage		
Land Use	Orange St.	Oriental Ave./ Eureka St.	Stuart Ave./ 7th St.
Agriculture	2	7	0
Commercial	162	153	141
Educational Facilities	9	8	27
Industrial	55	49	49
Low Density Residential	142	129	157
Medium-High Density Residential	14	32	25
Office	18	23	17
Open Space and Recreation	6	9	1
Public Facilities	36	35	33
Transportation and Utilities	34	33	44
Vacant	24	24	9
Grand Total	502	502	503
Source: SANBAG, Gruen Associates (2003)			

Narrow right of way east of Orange Street

Streetscape along Orange Street

Retail uses in Redlands Downtown

General Architectural and Landscape Character

The station area is architecturally diverse with historically significant buildings, attractive single-family houses, stately government buildings, and typical corporate commercial centers. The historic Redlands station, directly adjacent to the proposed station site, includes a long colonnade next to the railroad right-of-way. Orange Street has numerous one and two story historic brick buildings with boutique shops on the ground floor. Some sections of Orange Street and East State Street have an urban character with tree-lined pathways, street furniture and human-scale buildings fronting directly on the sidewalk. The residential neighborhoods to the south of Redlands Boulevard have attractive and well-maintained houses, many with a Victorian style of architecture.

Socio-economics within 1/2 mile of the station are shown in Table 11-2.

Accessibility to Each Station Area

- The preferred station site is accessible along Orange Street which connects to the major arterial, Redlands Boulevard and the I-10 freeway. Orange Street is congested at peak hours and its intersections with Redlands Boulevard, Pearl Avenue and Colton Avenue are under the congestion management program. The station site can also be accessed from Eureka Street which could also provide access to a park-and-ride structure.
- Overall the station area has a good connectivity with short blocks and intersecting streets. However some larger commercial developments such as the Redland Mall and Vons shopping center obstruct the grid hampering both vehicular and pedestrian movement.
- The station area is well served by Omnitrans buses and Redlands Trolley.

Table 11-2: Comparison of Socio-economics within ½ mile of the Alternative Stations (Census 2000)

		Orange Street	Oriental Ave/Eureka	Stuart Ave/7th Street
Population	Total Population	3,901	3,886	4,168
	Under 18	1,219	1,212	1,227
	Over 65	336	330	360
	% Transit-dependent	40%	40%	38%
Housing Units	Total Housing Units	1,593	1,595	1,620
	0-Vehicle	197	196	206
	%0Vehicle	12%	12%	13%
Households	Total Households	1,471	1,472	1,493
	Below Poverty	256	257	257
	% Below Poverty	17%	17%	17%
Employment	Total Employment	1,609	1,612	1,760
	Using Public Transit	65	67	66
	% Using Public Transit	4%	4%	4%

11.2 CITY PLANS AND POLICIES

The Redlands General Plan, Downtown Specific Plan and the Redevelopment Plan guide development in the downtown area. There is also a draft Redlands Downtown Master Plan which has not been adopted.

Redlands General Plan (Figure 3-6)

Land Use designations in the General Plan are shown in Figure 3-6 and the Appendix, and summarized below:

- Most of the area along Orange Street, I-10 Freeway, Redlands Boulevard and Colton Avenue is planned for commercial uses.
- The area to the north of Colton Avenue is planned for low-density residential with an allowable density of 0 to 6 units per acre.
- The area south of I-10 Freeway and east of 6th Street, and the area south of Stuart Avenue and west of Eureka Street are designated for Commercial/Industrial uses.
- South of Citrus Avenue, offices are planned on both sides of Brookside Avenue, Olive Avenue and Cajon Street.

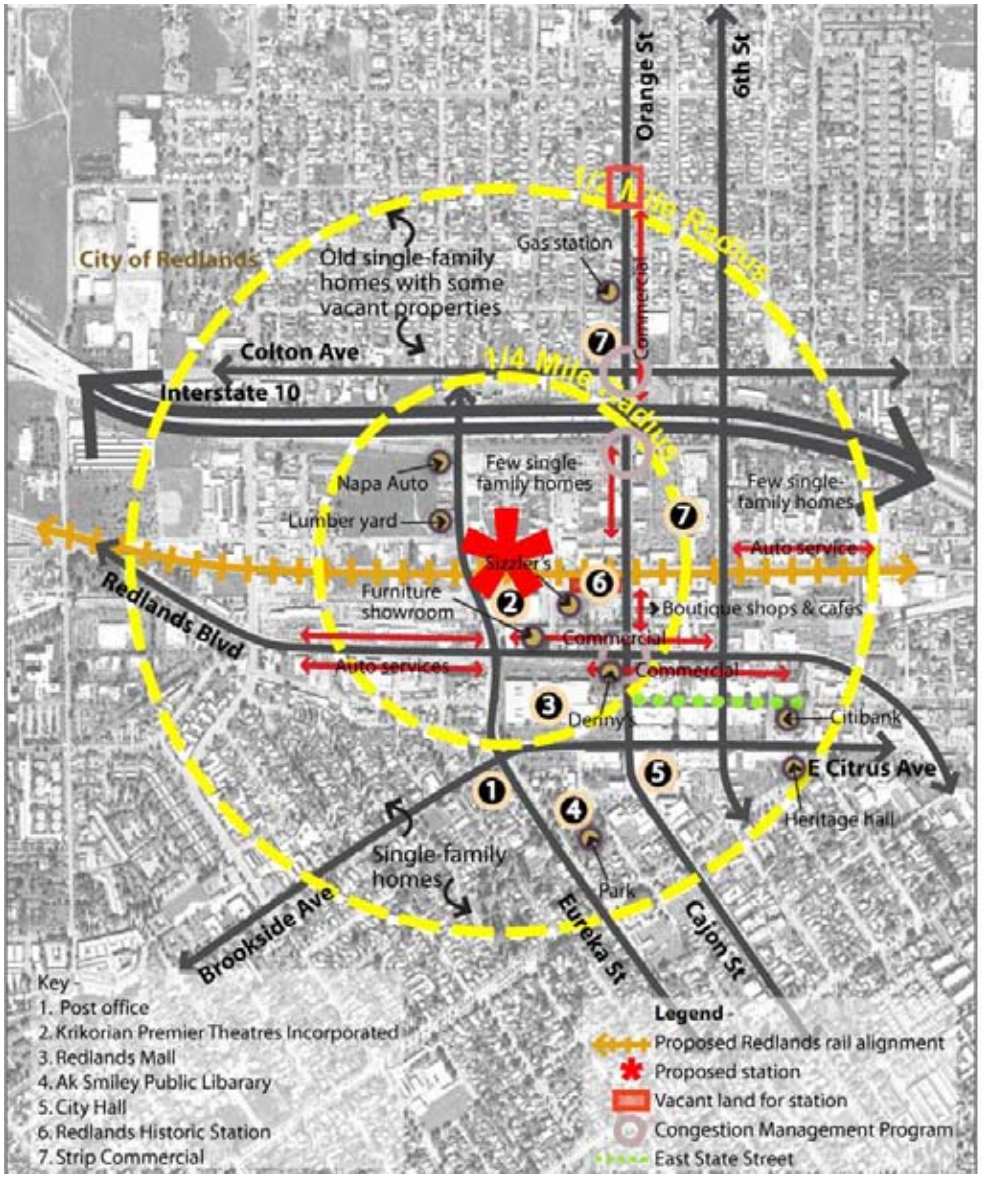


Figure 11-1: Existing conditions analysis in Orange Street Station Area

- A small portion in the southern most part of the station area is designated for medium-density residential uses with an allowable density of 0 to 15 dwelling units per acre.

- Maximum FAR allowed in the downtown is 2.0 for commercial and 2.0 for office. The General Plan and the zoning code, permit an FAR up to 4.0 in commercial designated lots south of Redlands Boulevard.

The City of Redlands has begun the process of updating its General Plan.

Downtown Specific Plan

The station area south of I-10 Freeway and north of Redlands Boulevard is located within the Downtown Specific Plan which was approved in June 21, 1994 and revised in November 2, 2004. The generalized boundaries of the Downtown Study Area are I-10 on the north, Redlands Boulevard and Oriental Avenue on the south, Texas Street on the west, and Church Street on the east. The goals to guide the comprehensive strategy for downtown Redlands from downtown specific plan include:

- Goal 1 – Develop the Specific Plan area as an extension of downtown Redlands, providing high-quality pedestrian-oriented development character consistent with the rest of the Town Center.

- Goal 2 – Provide opportunities for the expansion and development of small businesses that provide local services.
- Goal 3 – Provide public improvements for traffic circulation, flood control, utility services and aesthetic amenities that will attract new private investment and economic development.
- Goal 4 – Preserve historic buildings and sites.

Selected specific plan policies include:

- The Specific Plan Policy 1.5 is "to encourage the use of public transportation and emphasize pedestrian circulation throughout the area".
- Land Use Districts: The Specific Plan area contains three primary land use districts: Town Center (TC) District, Town Center Historic (TC-H) District and Service Commercial (SC) District.
- The TC District emphasizes retail, office, specialty and restaurant/entertainment activities, and pedestrian-oriented development. This area is generally south of the I-10 Freeway to Stuart Avenue on the south and 6th Street on the east. The TC-H District includes the Santa Fe Railroad Depot with preservation and rehabilitation of existing buildings as the primary objective.
- The SC District encourages local service businesses, while permitting offices, housing and retail activities. These are located east of 6th Street and south of Stuart Avenue, east of Eureka Street.
- Redlands Santa Fe Depot District: This is located between Eureka, Fifth Street, Stuart Avenue and Redlands Boulevard, and is listed as an Historic District on the National Register of Historic Places.
- Residential uses including single-family, multi-family, and mixed-use projects are permitted in TC, TC-H and SC districts. Hotels and motels require conditional use permits.
- The maximum FAR is 2.0 and the maximum height is three stories, not to exceed 55 feet in TC, TC-H and SC districts. In addition, it was mentioned in discussions with City officials that additional height may be permitted for a hotel project in downtown Redlands.
- An FAR of 4.0 is permitted as per the zoning code in commercially designated parcels south of Redlands Boulevard.
- Street classifications in downtown include: Major Arterial – Redlands Boulevard; Secondary Arterial – Pearl Avenue, Orange Street, 6th Street, Eureka Street; Local Streets – Stuart Avenue.
- Two joint use parking structures were recommended: 1) north of Oriental Avenue between 3rd Street and Eureka Street and 2) Area bounded by railroad tracks, Orange Street, Redlands Boulevard, and 7th Street.
- Extensive development standards and design guidelines are included for streetscape as well as urban design and architectural guidelines for private properties.

Draft Redlands Downtown Master Plan

The Draft Redlands Downtown Master Plan was prepared in December 2004 and has not been adopted by the City. The goals of this Master Plan are: promoting downtown Redlands economic vitality by encouraging a mix of uses, creating a pedestrian-oriented development, maintaining and enhancing the distinct Redlands character, and enhancing and extending the civic realm. The Master Plan proposes the following alternative locations for the Orange Street transit station:

- Intersection of Stuart Avenue and Seventh Street
- Along Oriental Avenue, just west of Eureka Street

Extensive land use, circulation, and parking interventions were prepared as part of this plan. The consultant for the downtown plan recommended the transit station at the intersection of Stuart Avenue and 7th Street previously as this provided an opportunity to revitalize an underutilized area of downtown

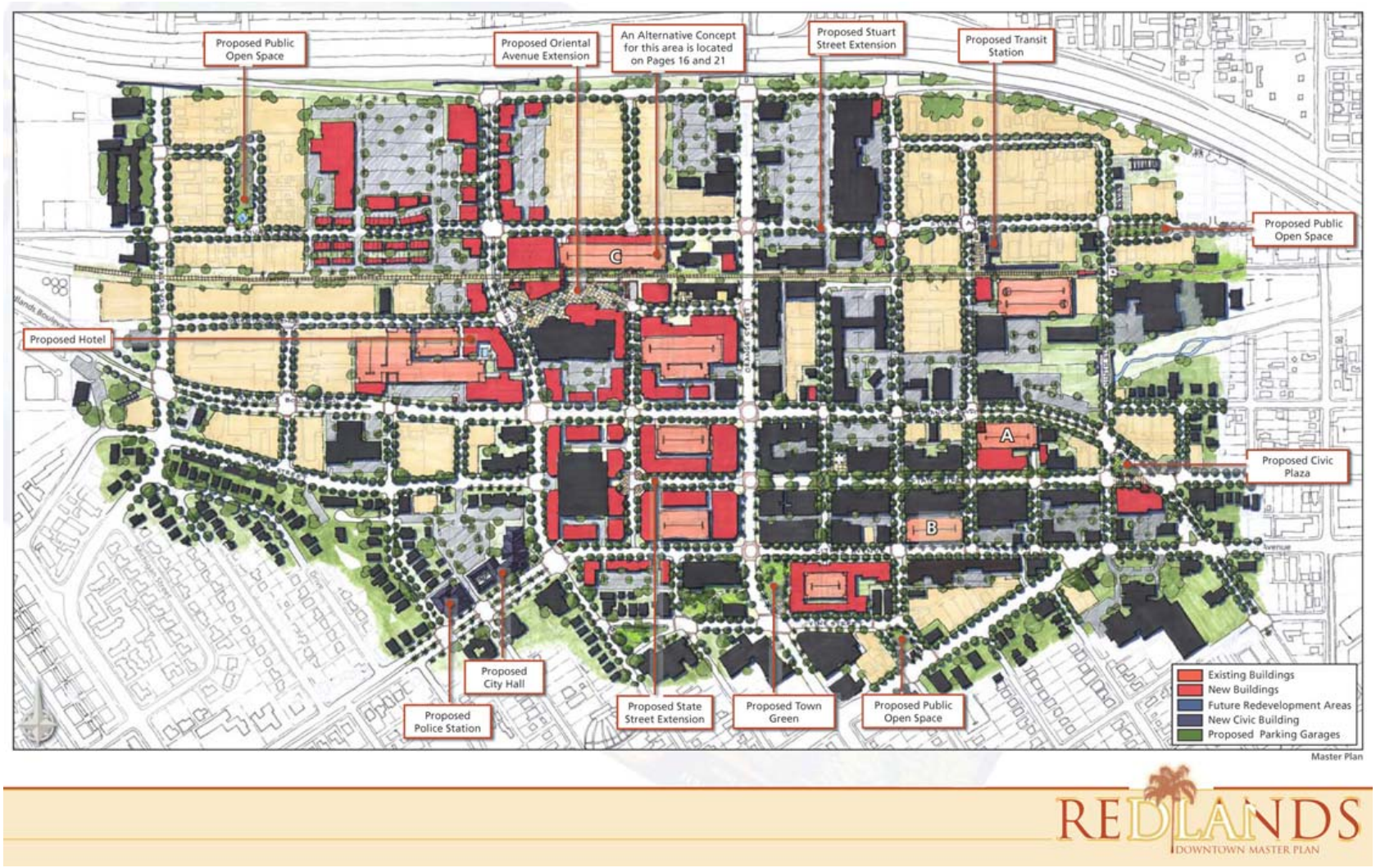


Figure 11-2: Downtown Draft Master Plan

currently slated for local serving business, offices, housing and retail (Figure 11-2). However, recently other uses in this area such as auto-services were moved here from other redevelopment efforts in downtown.

Redevelopment Plan and Proposed Projects

The portion of the ½-mile station area south of Colton Avenue and north of Vine Street is located within the Redlands Redevelopment Project Boundary. Figure 11-3 illustrates many of the proposed projects in the Redevelopment area. A number of mixed use projects, and revitalization and expansion projects are proposed or are underway within ½ mile of the station area.

Of these projects, the redevelopment of the Redlands Mall has the most potential to modify the downtown area. Redlands Mall is proposed to be redeveloped with approximately 230 units of housing over retail. Gottschalk's would remain and other portions of the Mall will be reconfigured to connect with State Street and 3rd Street.

The current plan for the Krekorian Theater property which stretches from Eureka Street to Orange Street on both sides of the rail right of way includes a mixed-use project with the following:

- North of the railroad tracks, a 730 space parking structure with retail and housing and primary access from Stuart Avenue
- An expanded theater and plaza retail
- Two-story retail and reuse of the historic Santa Fe depot for commercial uses
- Ground level retail and 150-400 apartments

11.3 ISSUES, OPPORTUNITIES AND CONSTRAINTS

Issues

Issues common for all three station site alternatives- Orange Street, Oriental Avenue just west of Eureka Street and 7th Street and Stuart Avenue include:

- Location of transit station and park-and-ride in downtown.
- Access from the freeway to park-and-ride.
- Potential for economic development consistent with TOD goals.
- Future uses and linkages in the area.
- Current restrictions on development including 400 residential units/year in the City, maximum densities of 15 to 27 units/acre.
- Limits on building height to 3 stories and FAR restriction of 2.0 in portions of downtown.
- I-10 as a barrier to pedestrian linkages for uses north of the Freeway.

Opportunities and constraints are listed in Table 11-3.

11.4 ALTERNATIVES

Chapter 4 illustrates the land use alternatives and the task force and community preferences. Alternative 1- Orange Street is the preferred alternative by SANBAG, those attending the community workshop, and the Task Force. However, in the initial stakeholders meeting, the adjoining property owner to the Orange Street station site (also owns the historic rail station) preferred the Oriental Avenue/Eureka Station site where the line would terminate and the owner could recapture the right-of-way. The rail line is planned to continue to the University of Redlands which has support of the University and has the highest ridership potential.

11.5 GOALS AND OBJECTIVES

Consistent with the Downtown Redlands Specific plan and the Draft Downtown Plan, the goals and objectives are:

- Centrally locate the station in downtown to provide optimum service and provide improved linkages to the station.

Table 11-3: Issues, Opportunities and Constraints for Three Downtown Station Area Alternatives

	Station Location Alternatives		
	Orange Street (Feasibility Study and Preferred Alternative)	**Oriental Avenue west of Eureka Street (Downtown Master Plan)**	**7th Street and Stuart Avenue (Downtown Master Plan)**
Opportunities	▪ To capitalize on Downtown Redlands' existing assets, the rail station would be located in the most central downtown location at the existing historic Santa Fe Depot. A portion of the station would require a raised platform, which could be added west of the existing station providing access to the rail and a link to the Krikorian Cinema and other proposed projects to the west. ▪ The station location would provide development potential along Eureka Street, around existing City Hall site and throughout the rest of Downtown. ▪ The proposed City parking garage south of Stuart Avenue east of Eureka Street could be shared. Also there would be an opportunity to share parking in Core Block south of Santa Fe Depot with new development. ▪ Freeway access to the station from the east would exit at 6th Street follow Pearl Avenue to Eureka Street to access park-and-ride structure. ▪ Orange Street would continue as the pedestrian-linkage from the station to State Street and a revitalized downtown.	▪ The station location proposed by the Draft Downtown Master Plan would allow for the passenger rail to terminate in downtown freeing up the right-of-way for other uses such as a bike trail and eliminating some existing railroad crossings of streets. However, this would also restrict the extension of the rail to the University of Redlands, a high ridership station and beyond in the future. ▪ Locates the station in the north western quadrant of downtown, an underutilized area with considerable development proposals. ▪ The proposed City parking garage between Stuart Avenue and the railroad tracks east of Eureka or a parking structure south of Stuart west of Eureka could be shared for park-and-ride. ▪ Freeway access to the station from east would exit 6th Street follow Pearl Avenue to Eureka Street to access park-and-ride structure. ▪ Pedestrian connections to State Street would be along Stuart to Orange Street, on Eureka Street to Redlands Boulevard to 3rd Street.	▪ Locates station in an underutilized area providing potential for infill mixed-uses including new residential. ▪ Unlike the Oriental/ Eureka where the rail line would terminate, this allows for extension of the rail to the University of Redlands and beyond. ▪ A transit station parking structure would be developed south of railroad track with access from 7th Street. ▪ Freeway access to the station from the east would access 6th Street directly to the park-and-ride. ▪ This location could have a 7th Street pedestrian linkage from the station directly to State Street pedestrian area.
Constraints	▪ Pedestrian connections to the 7th Street area would be limited unless improvement made through Von's Center or along railroad right-of-way. ▪ A preliminary hazardous waste search revealed two active cases of Leaking Underground Storage Tanks (LUST) at gas stations near the station site.	▪ Pedestrian connectivity with rest of downtown would not be as direct as the Orange Street baseline alternative. ▪ Location would be remote from most active pedestrian uses along State Street. ▪ This location would not allow for continuation of the Redlands Passenger Rail to University.	▪ Displacement of existing auto-service uses that were previously moved from other portions of downtown. ▪ Extension of Stuart Ave. through existing Von's shopping center to Orange Street in order to connect transit station with existing developed areas of downtown would be weak.

Figure 11-3: Major Downtown Developments Proposed or Underway

- Promote Downtown Redlands economic vitality by encouraging a mix of uses.
- Create a pedestrian-oriented environment.
- Maintain and enhance a distinct Redlands' character.
- Enhance and extend the civic realm.
- Provide public improvements that will attract new private investment and economic development.
- Preserve historic buildings and sites.

11.6 LAND USE CONCEPT AND LINKAGES

The Station Integrated With Development and Park and Ride in a Shared Structure

The station selected is near Orange Street and its final configuration would depend on available right-of-way adjacent to the existing rail right-of-way and technical considerations to be investigated further during the preliminary engineering phase. Based on available information, configurations to consider:

- West of Orange Street right-of-way maps indicate an existing width of 35.9 feet. To fit the station within the right-of-way, a split platform station would be necessary with the east bound platform east of Orange Street and the west bound west of Orange Street.
- Or preferably if an additional 10 – 20 ft of right-of-way is obtained adjacent to the station, both platforms could be on the west side of Orange Street and integrated with the existing and planned development near the Krikorian Theater as shown in Figure 11-4. As an alternative, with participation from the adjoining property owners, the historic Santa Fe station could be used as one of the platforms with another platform constructed to the north.
- The new planned parking structure to the north of the rail right-of-way should contain some parking spaces for park and ride. If the development occurs before the rail project with its required parking, some of the parking may be able to be shared or allocated to park-and-ride in the future with the additional access provided by the rail development. SANBAG, the city officials, and private development will need to coordinate on the allocation of funding for parking. An additional structure east of Eureka Street could have additional spaces, if required. For opening day of the rail project, parking could be provided in surface lots, if available. Parking and traffic issues will be further analyzed during the environmental impact stage of the rail project.

Land Use and Station Area Connectivity

The land use concept envisions the station integrated with the activities planned adjacent to the existing Krikorian Theater. Figure 11-4 shows an early plan for expansion of the Krikorian Theater by the developer and the surrounding area as mixed use with retail shops, restaurants, offices, and housing center along a pedestrian-friendly street connecting Eureka Street and Orange Street. Throughout the development would be courtyards and plazas, adjoining the sidewalks with canopy trees, and other pedestrian amenities. The station shown in red could fit into the planned plaza, providing easy access to the development and surrounding areas. Patrons could either walk along the pedestrian street or through the historic station to the uses east of Orange Street.

Figure 11-5 shows the Draft Downtown Plan prepared by Torti Gallas with suggested modifications relative to the Redlands Passenger Rail indicated at the top of the drawing. These include a more intense mixed-use development west of Eureka Street, continue the rail and include trail to the University of Redlands along the right-of-way, and future mixed use at 7th Street and Stuart Street with pedestrian access to the rail station via the new trail within the right-of-way where possible.

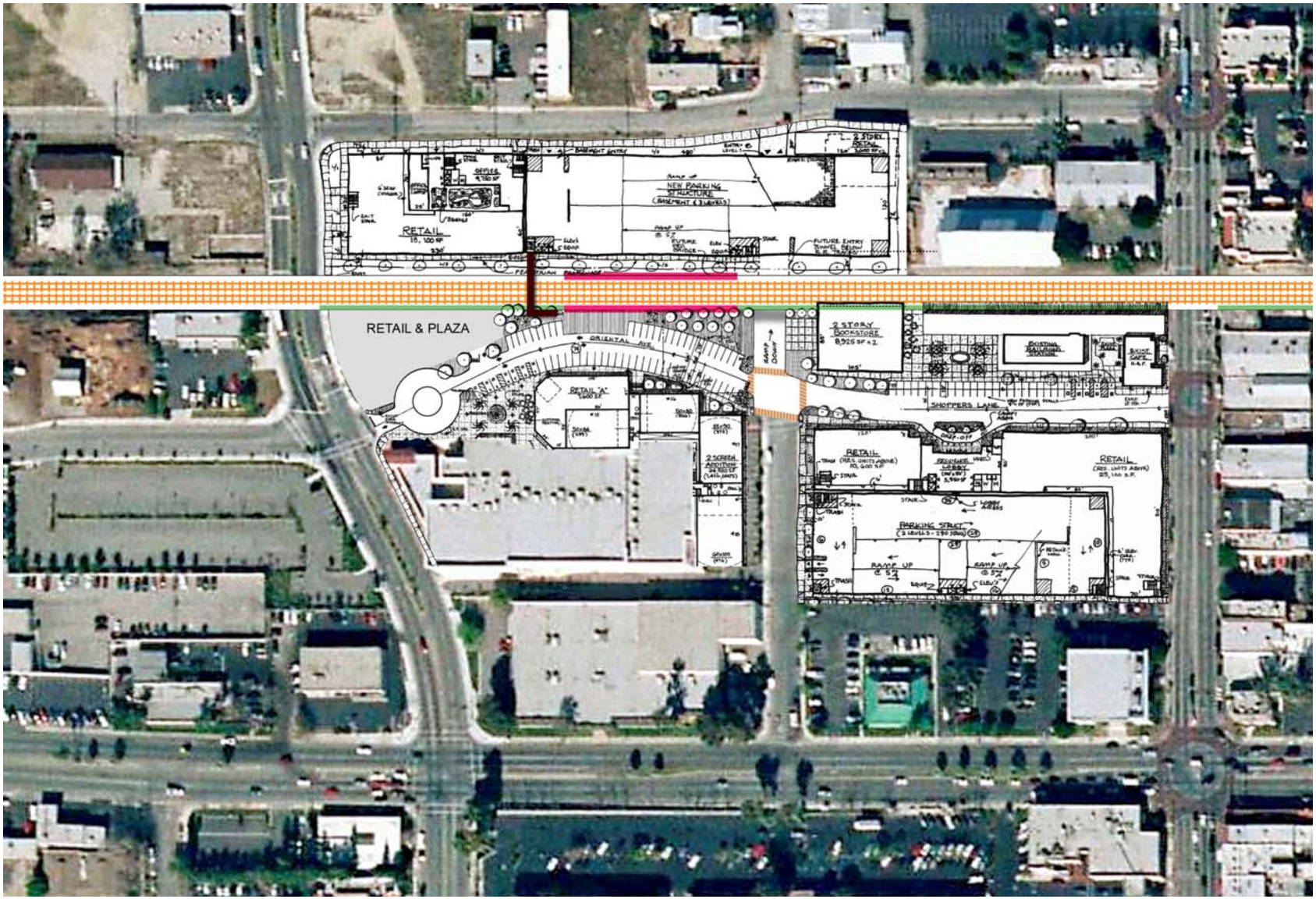


Figure 11-4: The Station and Park-and-Ride integrated to Planned Development

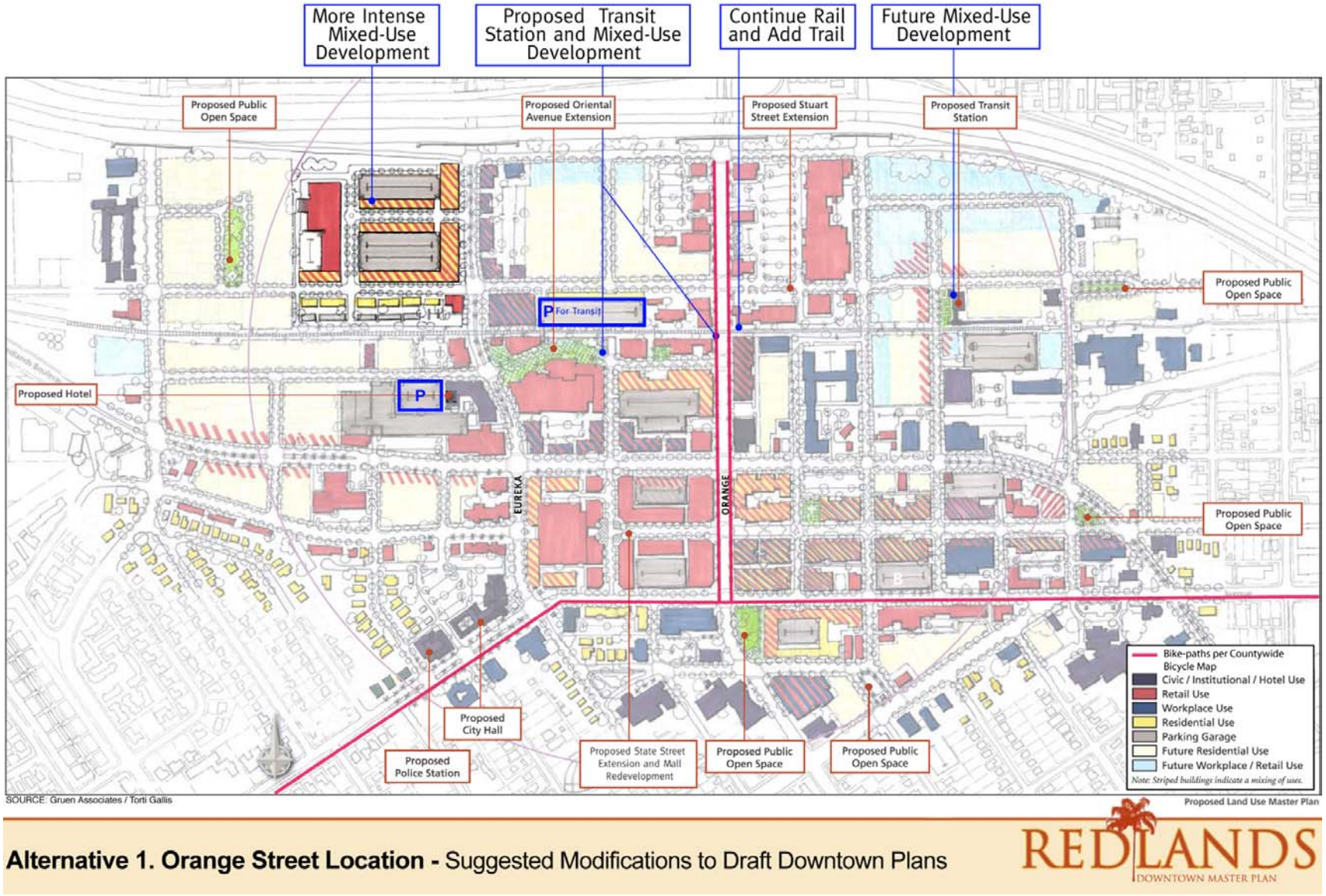


Figure 11-5: The Draft Downtown Master Plan Illustrative Concept with Suggested Modifications in the Station Area

Linkages to the station area would be along the city sidewalks enhanced with streetscape improvements. Sidewalk improvements along Redlands Boulevard would provide access to ESRI and other businesses to the west.

11.7 LAND USE POLICY RECOMMENDATIONS

Land use polices to realize the land use concepts include:

- Use the overall land use policies and TOD guidelines in Chapter 2 – Section 2.2 of this report to plan and design each project and the public streetscapes.
- Locate the station between Orange Street and Eureka Street with a strong pedestrian connection to the adjoining development, with park and ride spaces in a shared parking structure north of the railroad tracks which would have a grade separated pedestrian crossing of the tracks, a pedestrian gathering space adjacent to the station, and kiss-and-ride.
- Consistent with the uses proposed in the Draft Downtown Plan and Downtown Specific Plan, locate mixed use and other transit supportive uses and create a pedestrian-friendly environment in the station area.
- As nearby transit reduces households need for multiple automobiles, reduce the residential parking requirements of a project which is within ½ mile of the passenger rail transit station. At least one covered assigned parking space shall be provided per residential unit and any additional spaces assigned per units could be shared with commercial and transit uses. The precise amount of shared parking should be proposed and supported by a shared parking study prepared by a licensed traffic engineer.

11.8 CIRCULATION AND LINKAGE POLICY RECOMMENDATIONS

Circulation and linkage policies include:

- Improve streetscape and sidewalk connections along Redlands Boulevard along 3rd Street leading from Redlands Mall to the station along Orange Street to State Street and north under the freeway along Eureka Street and Stuart Street.
- Incorporate a multi-purpose trail in the right-of-way west of Orange Street to link future developments of this are with the station.
- Each project developed in the area should incorporate clearly defined pedestrian connections to the station.

11.9 IMPLEMENTING POLICIES

- Revise the General Plan and Downtown Specific Plan as necessary to allow mixed-use, densities up to 27 units/acre, FARs to 2.0, and building height to five stories within the station area if mixed use guidelines are followed and community benefits such as right-of-way for the station, station canopy, other station amenities, special landscaping, park and ride spaces, other pedestrian-linkage improvements or transit supportive uses are provided.
- Work with the City's redevelopment agency and the property owner/developer of the property adjacent to the Orange Street station for additional right-of-way and to integrate the stations with the planned development.
- As Redlands has a growth limit of 400 units per year, a phased approach to station area development should be considered with downtown as first priority and then priority given to TOD projects in other station areas which provide public benefits and amenities such as pubic gathering spaces, park-and-ride spaces, station construction and amenities, a substantial number of jobs, and high density owner occupied housing with outdoor recreational space.

11.10
RIDERSHIP AND TRANSPORTATION ANALYSIS

The travel demand model described in Chapter 5 was used to estimate the Redlands Rail ridership at the Orange Street Station. The model results show that this station would have the second highest ridership demand of the seven stations in the Redlands Rail system in either of the land use scenarios.

Table 11-4 shows that the Orange Street Station serves as the boarding or alighting point for 2,700 daily passengers in the Baseline Land Use Scenario. This represents 36 percent of the daily ridership forecast for the Redlands Rail system in that scenario. The ridership demand at this station increases by more than 50 percent to 4,220 passengers in the Intensified Land Use Scenario.

The most popular mode of access at the Orange Street Station is transferring to or from another transit vehicle in the Baseline Land Use Scenario. Transfers to and from the eight bus routes that serve this location (seven Omnitrans routes and one RTA route) account for 40 percent of total access to this Redlands Rail station in this scenario.

Table 11-4: Ridership Statistics at Orange Street Station

Measure	Land Use Scenario	
	Baseline	Intensified
Daily Ridership by Access Mode		
Walk	950	2,360
Auto	660	740
Transfer	1,090	1,120
Daily Total	2,700	4,220
AM Peak Hour	370	470
PM Peak Hour	190	390
Parking Spaces	260	300

Walking is the second most popular mode of access at the Orange Street Station in the Baseline Scenario, with 35 percent of the access share. However, under the Intensified Land Use Scenario, walk access grows to be the most popular access mode with over half the ridership walking to and from this station.

This station is assumed to be the site of one of a park-and-ride lot in the horizon year (2030) transit network. This station attracts the second highest magnitude of auto access of the three park-and-ride lots along the Redlands Rail Corridor. The estimated demand for parking spaces due to the Redlands Rail line is 260 spaces in the Baseline Scenario and 300 spaces in the Intensified Scenario.

The peak hour of ridership demand at the Orange Street Station in the Baseline Land Use Scenario is the 370 passengers forecast to board or alight from Redlands Rail trains during the AM Peak Hour. This represents an average of 23 passengers per train (assuming eight trains per hour in each direction of travel). In the Intensified Land Use Scenario, the peak hour of ridership demand at this station is the 470 passengers during the AM Peak Hour, which translates to almost 30 passengers per train.

12

UNIVERSITY OF REDLANDS STATION AREA PLAN

The Redlands Passenger Rail Station is proposed on the west side of Grove Avenue and east of Cook Avenue within the 100 ft right-of-way. The University of Redlands station area is entirely within the City of Redlands and encompasses a portion of the University of Redlands campus.

12.1 BACKGROUND AND PLANNING CONTEXT

Existing Land Uses and Demographics

The Redlands University Station Area has predominantly residential land uses (Figure 12-1). Almost 50% of the land has single-family homes with an additional 83 acres with medium-high density residential use (Table 12-1). The University campus located between North University Street to the west and South Grove Street to the east and its related educational facilities occupy 85 acres within ½ mile of the station. The University has approximately 2,000 students. The other land uses in the area are agriculture, commercial, open space and recreation, public facilities and transportation and utilities. According to SANBAG, the station area is mostly built out with only 17 acres available as vacant land. However, this does not include vacant land on the campus itself.

Table 12-1: Existing Land Uses within ½ mile of the University Street Station

Land Use	Acreage
Agriculture	25
Commercial	1
Educational Facilities	85
Low Density Residential	245
Medium-High Density Residential	83
Open Space and Recreation	19
Public Facilities	4
Transportation and Utilities	22
Vacant	17
Grand Total	502

Source: SANBAG, Gruen Associates, 2003

* These tabulations were prepared when the station was closer to University Street. There will be some variation in the above acreage by moving the station between Cook Street and Grove Street

University of Redlands Campus

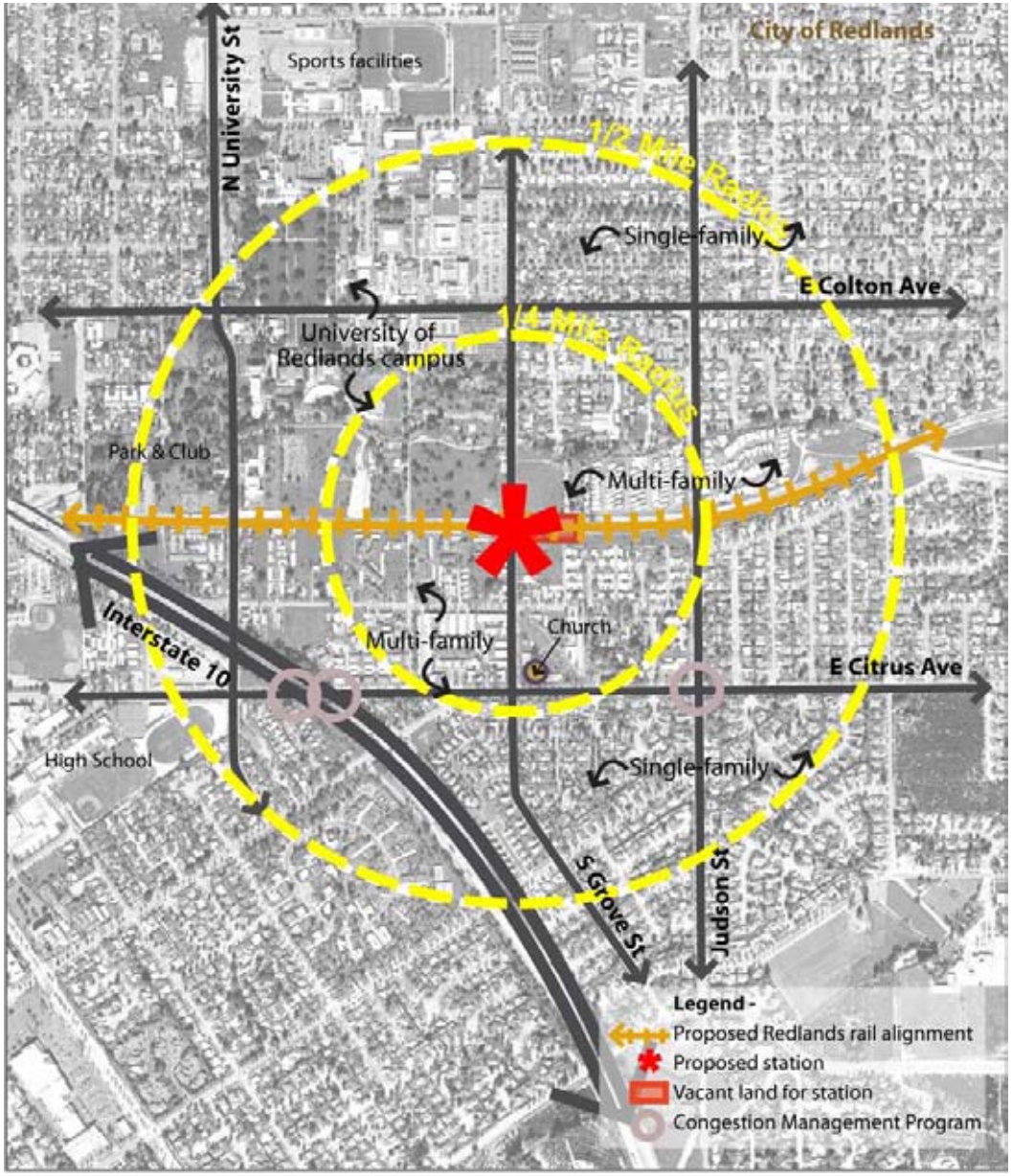


Figure 12-1: Existing Conditions Analysis at University of Redlands Station

Socio-economics within ½ mile of the station are shown in Table 12-2.

Table 12-2: Socio-economics within ½ mile of the University Street Station (Census 2000)

Population	Total Population	4,430
	Under 18	1,117
	Over 65	286
	% Transit-dependent	32%
Housing Units	Total Housing Units	1,435
	0-Vehicle	139
	%0Vehicle	10%
Households	Total Households	1,336
	Below Poverty	200
	% Below Poverty	15%
Employment	Total Employment	2,134
	Using Public Transit	59
	% Using Public Transit	3%

General Architectural and Landscape Character

The station area is one of the architecturally rich areas along the Redlands Rail alignment.

The 1907 historic University of Redlands has an attractive campus with stately buildings, lush landscaping and pedestrian malls. There are well-maintained single-family houses in the area with some of them built in Victorian style. The residential streets are narrow (2-3 lanes) with many well-maintained sidewalks and street trees.

Streetscape within the University of Redlands is attractive and well maintained

Residential area sidewalks are tree-lined

Accessibility to the Station Area

- The station site is indirectly connected to the I-10 freeway exit at North University Street.
- The station site is approached via the South Grove Street which is 4 lanes wide with sidewalks along some sections.
- Major east-west connections are about a ¼ mile from the station from either the East Citrus Avenue to south or the East Colton Avenue to north.
- The Redlands Trolley Blue Line service provides the only transit connection to the station area along East Colton Avenue.
- There are pedestrian malls and bike paths interconnecting the University of Redlands campus. An alignment north of Cook Street is the most direct route from the station site to the campus.

12.2 CITY PLANS AND POLICIES

Redlands General Plan

- The University of Redlands property in the eastern portion of the station area is designated as Public/Institutional.
- The area just south and east of the University is designated as High Density Residential, which allows for 0 to 27 dwelling units per acre.
- The area south of I-10 Freeway and west of University Street is designated Public/Institutional (High School).
- In the northwest quadrant, the area just west of University Street and north of the railroad right-of-way is designated Parks/Golf Courses.
- The rest of the area in the northwest quadrant is designated for Low-medium Density Residential (0 to 8 units per acre) and Medium Density Residential uses (0 to 15 units per acre) and Public/Institutional (Elementary School).

Redevelopment

The station area is not part of the City of Redlands Redevelopment Area.

Proposed Developments

- A developer is proposing residential units on vacant property directly east of the station.
- The University is planning an expansion of the art and theater complex south of Sylvan Boulevard and west of Cook Street.

12.3 ISSUES, OPPORTUNITIES AND CONSTRAINTS

Issues

- The station area is mostly well built-out with little space for new development projects except on University property.
- The residential development is mostly low density single-family with some multi-family housing south of the station area.

Opportunities

- The existing population and employment is highest in the corridor.
- Some of the vacant land parcels adjacent and around the proposed station site could be developed with high intensity mixed-use.
- Some areas are planned for densities up to 27 du/ acre.
- The Campus provides an opportunity to capture students and faculty as riders.
- Cook Street provides the opportunity to link the station with the campus and higher density development to the south.

Constraints

- The station area is part of a developed attractive residential and university neighborhood and there are only a few opportunities to intensify uses with transit supportive development except on vacant land primarily University owned.

12.4 ALTERNATIVES

Chapter 4 discusses the land use alternatives and the task force/community preferences for the alternatives. Alternative 1- "High Density Residential such as faculty housing near station" was preferred by those attending the community workshop and by the Task Force.

12.5 GOALS AND OBJECTIVES

Goals and objectives for the University of Redlands station include:

- Locate the station adjacent to the University of Redlands with strong pedestrian, bicycle and shuttle linkages to the campus academic and residential areas.
- Plan for the maximum residential densities permitted in the City of Redlands General Plan in the ½ mile radius of the station.
- Incorporate trails in the station area that link with the planned regional trail system and the Zanja.

12.6 LAND USE CONCEPTS AND LINKAGES

The land use and linkages concept envisioned for the University of Redlands Station Area places the station in the 100 ft wide rail right-of-way between Cook Street and Grove Street as shown in Figure 12-2. The vacant area directly to the north of the station on University property would be developed for transit-supportive uses such as faculty housing and the vacant areas not owned by the University east of Grove Street and south of the Zanja as high density housing as shown on the City's General Plan.

Cook Street alignment north and south of the station could be improved by the University with landscaping, and pedestrian amenities linking the University and the surrounding areas to the station. Sylvan Boulevard, the Zanja, and trail connections along University Street and Grove Street would serve new development and link to the station illustrated in Figure 12-2. Due to the wider rail right-of-way, trail connections could be within the right-of-way linking to the regional trail/bicycle system. It is also proposed that some land north of railroad tracks incorporate some of the existing oak trees which are an important community resource.

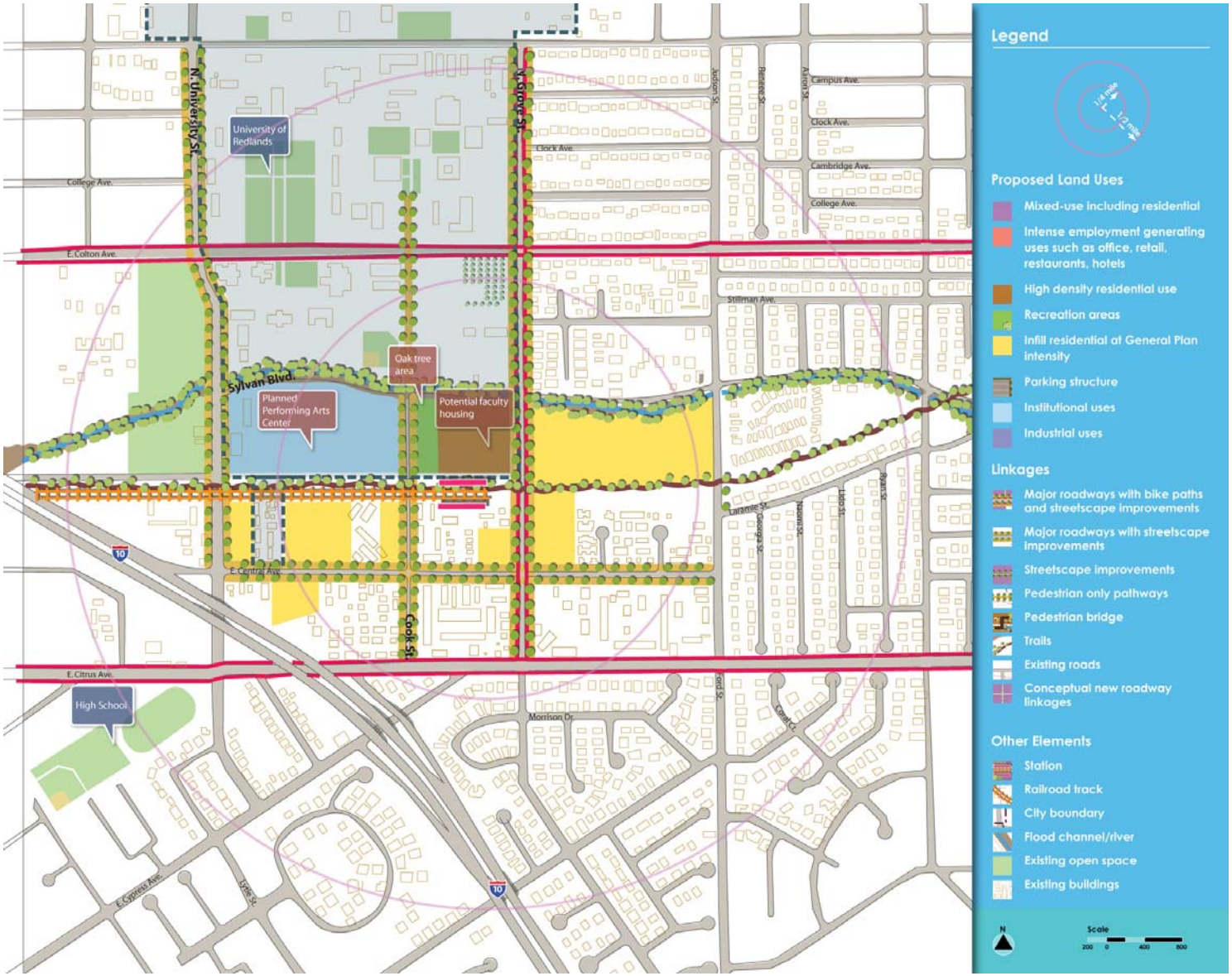


Figure 12-2: University of Redlands Station - Land Use and Linkage Concept

Table 12-3 shows development potential within ½ mile of the station.

Table 12-3: Development Potential within 1/2 mile of the station at maximum build-out (approximate values)	
Potential population	6,000
Potential employment	1,078
Proposed dwelling units	2,300

12.7 LAND USE AND POLICY RECOMMENDATIONS

Land use polices to be followed to realize the land use concept includes:

- On University properties in the station area, provided transit supportive uses such as faculty housing, the planned Art Center and theater, and other residential uses at a minimum density of 20 units/acre.
- On private property in the station area, provide minimum density which is close to or equivalent to the City's maximum density permitted in each General Plan designation.
- Incorporate natural features of the site such as oak trees in planning new developments.

Transit-supportive uses such as faculty housing should be provided in the station area.

12.8 CIRCULATION AND LINKAGE POLICY RECOMMENDATIONS

Circulation and linkage policies and the Circulation and Linkage Concept (Figure 12-3) include:

- Provide space for a trail along the rail right-of-way linking the station and University with the Santa Ana River trail system.
- Work with the University to design a strong pedestrian connection along Cook Street north and south of the station.
- Incorporate a public gathering space near the station preserving some of the existing oak trees near Cook Street and the station.
- Plan for improvements to Sylvan Street for access in conjunction with developments planned on University property and incorporate preservation of the Zanja.
- Make pedestrian and other streetscape improvements on Grove Street, University Street, Central Avenue, and Cypress Avenue.
- Provide feeder bus service to the University area.

A trail could be provided along the rail right-of-way linking the station to the regional trail system.

12.9 IMPLEMENTING POLICIES

- SANBAG and the City to work with the University of Redlands during its master plan process to ensure that land use, streetscape and linkage concepts on University properties are supportive of the Redlands Rail Passenger Study.

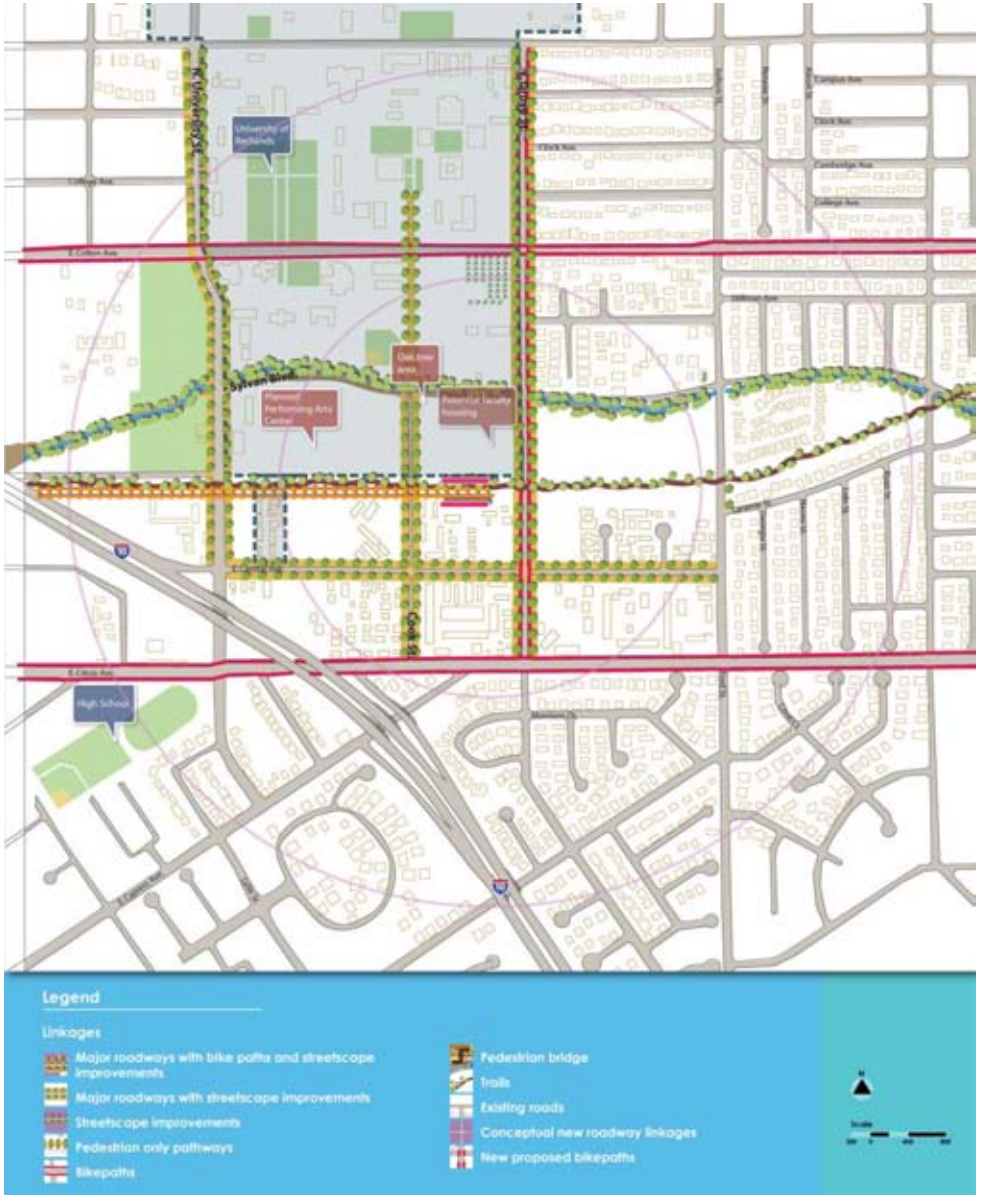


Figure 12-3: University of Redlands Station – Circulation and Linkage Concept

- Establish a minimum density for the City's land use designations in the station area. Currently, the General Plan has designations from 0 to 27 units/acre. A minimum density in the range of 20 units/acre would be appropriate.

12.10 RIDERSHIP AND TRANSPORTATION ANALYSIS

The travel demand model described in Chapter 5 was used to estimate the Redlands Rail ridership at the University of Redlands Station. Table 12-4 shows that the University of Redlands Station serves as the boarding or alighting point for 1,450 daily passengers in the Baseline Land Use Scenario. The ridership demand at this station increases by 24 percent to 1,800 passengers in the Intensified Land Use Scenario.

Walking is the most popular mode of access at the University of Redlands Station, with over 90 percent of the access share under both land use scenarios.

The remainder of the access to the University of Redlands Station results from transfers to and from the Redlands Feeder route that serves this station.

Table 12-4: Ridership Statistics at University of Redlands Station

Measure	Land Use Scenario	
	Baseline	Intensified
Daily Ridership by Access Mode		
Walk	1,330	1,680
Auto	-	-
Transfer	120	120
Daily Total	1,450	1,800
AM Peak Hour	160	220
PM Peak Hour	130	150
Parking Spaces	-	-

There is no auto access forecast at this station because no park-and-ride lot is assumed in the horizon year (2030) transit network.

The peak hour of ridership demand at the University of Redlands Station in the Baseline Land Use Scenario is the 160 passengers forecast to board or alight from Redlands Rail trains during the AM Peak Hour. This represents an average of ten passengers per train (assuming eight trains per hour in each direction of travel). In the Intensified Land Use Scenario, the peak hour of ridership demand at this station is the 220 passengers during the AM Peak Hour, which translates to 14 passengers per train.

ACKNOWLEDGEMENTS

Redlands Passenger Rail Steering Committee

Mike Bair, Director of Transit and Rail Improvements, SANBAG
Ty Schuiling, Director of Planning and Programming, SANBAG
Cheryl Donahue, Public Information Officer, SANBAG
Rohan Kuruppu, Planning Director, Omnitrans
Elizabeth Mahoney, Metrolink
Jeffrey L. Shaw, Community Development Director, City of San Bernardino
T. Jarb Thaipejr, Public Works Director, City Engineer, City of Loma Linda
Lori Sassoon, Assistant City Manager, City of San Bernardino
Valerie Ross, Director of Development Services, City of San Bernardino
Mervin Acebo, Omnitrans

Consultant Team

Gruen Associates

Elaine V. Carbrey, AIA, AICP, Project Manager
Prasoon Kumar, Urban Designer, Planner
Sukriti Agarwal, Planner
Steve Smith, Landscape Architect
Matthew Parrent, Graphics Designer
Kelly Chan, Graphics Designer
Larry Schlossberg, AIA, Partner-in-Charge

Parsons Transportation Group

Larry Wesemann, Transportation Planner
Eric Bierce

Moore, Iacofano, Goltsman, Inc.

Pat V. McLaughlin, Principal
Andy Pendoley

This page intentionally left blank.

ATTACHMENT A: DETAILED TRANSCRIPTION OF COMMENTS

SAN BERNARDINO – VALLEY TRANSIT TOUR

Overall Redlands Passenger Rail Routing and Stations

- The visual is great to look at to see the actual surroundings
- Connections to existing and proposed mass transit is important because it connects existing outlaying areas into the mass transit system.
- Rails.
- My concerns include distances between bus stops and accessibility from one to another.
- Fantastic idea to alleviate congestion between these two great cities.
- Need more output to better understand how these stations would bring potential to the city.
- Good distribution.
- Too many stops—have F, C, and B only.
- I am excited by the possibilities.
- Emphasize the connection to Metrolink.
- Good idea.
- Is limited to existing right of way. Station locations look good.
- Great.
- The medical center has a tremendous number of people who travel on Barton Road. Please make a line from the hospital to Downtown Redlands.
- Good.
- Good concepts, let's get them built!
- Looks good.
- Nice idea.
- Very good.
- Too soon to tell, but a good concept.
- I think the alternatives are great and have been needed for a long time.
- Good.
- Supports from stations to outer-lying areas (Loma Linda) would need much improvement.
- Station locations well-selected to conform with traffic flows (work or family related.)

The Transit Village Concept

- I'd like to see Community Development involved in this concept.
- The concept will become more important as energy costs and population increases. It is a great opportunity to plan areas that are not yet developed.
- More rails.

- Transit villages really are the wave of SoCal's future. With oil drying up and population expansions, higher density, well-planned, must be embraced.
- How would this really reduce traffic and improve air quality?
- No brainer, though a broader education process is needed. Many don't understand the need for and advantages of such mixed-use densities.
- Very positive concept.
- Yes, use retail and loft housing within walking distance to transit centers.
- Excellent! I think it is a great concept for the future.
- Looks like what we already have downtown.
- Sounds good, but where?
- Excellent ideas. They promote the density needed to make this work.
- Great.
- Will attract higher income riders. Great concept.
- Great.
- Excellent! Look at bike station.com for good bicycle parking solutions. Lofts/artists/hipsters move in first to keep it cool. Integrate with lakes concept. Add a 10 minute bikeable zone within 1-2 miles.
- Love this!
- Love the idea.
- Good.
- Good ideas.
- Mixed use and density are key.
- I like that people will have places to go immediately off the station.

Transit Villages and Mixed Use Examples

- Mixed use is great. I can see this concept in good use in the near future.
- The examples along with personal experience shows that these concepts work successfully.
- More rails.
- Parks and villages might be good for the city, but how does it affect the negative element?
- Good examples—need test project in the area to show the public that this is feasible, marketable; maybe a joint public/private partnership at Rialto and E Station (?) with an experienced developer.
- Use center-line rail transit (streetcar) to main center—shopping, university, hospital, Metro station.
- Excellent! I think it is a great concept for the future. Love it!
- Remember: We live in Redlands because we love Redlands and our lifestyle. Don't "fix us!"
- Add BART and Caltrain examples. These have been tremendous successes and help to redevelop cities.
- Great.
- Include jazz, restaurants, shops, a park, waterfalls, water fountains, a coffee house, sandwich shops, and candy stores.
- Consider Eugene and Portland Oregon, or any cool city such as San Francisco, Washington DC, or Arlington Virginia.
- Good.
- Good.
- Good ideas.
- Great!
- Practical and beneficial.
- Good idea for people to be able to walk to train stations from home and work.

Transit Village Benefits

- Again, community involvement and development is a plus.
- By building housing units closer together there is more room for community spaces.
- Yet to be seen.

- Makes public transit feasible, plus it provides additional residential/shopping options.
- Reduced commute times, live and work within a short distance, encourages more vibrant urban lifestyle.
- Great!
- This could certainly be used at California Street. Just remember to keep it "Redlands."
- Great.
- Must be a cool design with green space that is safe, beautiful, and includes lots of shade trees to counter the heat. Include good bicycle connectivity.
- Can see the benefits from less driving and more walking.
- Convenient, amenities, and good planning.

San Bernardino Station Areas - Existing Conditions

- I am happy to see the aerial in this view, civil-engineering wise.
- The city would benefit exponentially by the catalyst.
- Well-thought.
- Need to plan for increased density.
- Existing conditions bear little resemblance to the potential. Must keep thinking creatively and working with the development community.
- Current San Bernardino Metro station has reputation of being in a "bad-high crime area." Tippecanoe is okay.
- Bike paths/safety.
- Very old and dirty.
- Terrible.
- Carousel Mall to Stadium needs major help! Get private investors to do something cool, not cheap. Link up with San Timoteo Creek Trail that goes from Redlands through Loma Linda.
- Need something like transit to help revitalize the areas.
- Looking good.
- Frequency of trains needs to be increased.

Redlands / Loma Linda Station Areas - Existing Conditions

- It's good to look outside of the box. This is of great concern for individuals.
- Really don't care.
- I definitely want the downtown Orange Street option.
- OK. Need more shade.
- OK.
- Using Mountain View and Baron will really assist the 13,000+ who work at LLUMC.
- Focus on historic preservation in Redlands.
- Integrate with San Timoteo Creek Trail, SART, and Orange Blossom Trails.
- Great potential for quality development.
- I need help understanding this as I did not find it to be clear.
- It would be beneficial to get a public transportation route/service from Redlands/Loma Linda area to Ontario Airport.
- Station at Wal-Mart location makes a lot of sense—any connector to University or VA Hospital could increase passenger volumes.

Connections

- This board shows civil planning at its best for several reasons.
- It is important to make the connections work efficiently. Designing the rail with buffer zones eliminates its intrusiveness.
- Hope to see a lot more maximum row than other two.
- I would like to the opportunity to connect to Riverside perhaps.
- Need to run busses more frequently.

- More connections into the heart of Redlands would be ideal. The bulk of the population lives in the homes along the hills, south of Barton Road.
- Connect to Riverside and Moreno Valley by rail.
- It would be best to provide the maximum number of train opportunities.
- Very much needed.
- Possible Blue Line type connection into Loma Linda (subway) eventually

COMMUNITY PREFERENCE SURVEY ON LAND USE AND LINKAGE ALTERNATIVE

Rialto Station Area – station at Transcenter site		
Alternative 1 – Emphasis on Mixed-Use and Housing Opportunities	17	▪ This plan is too heavy on residential, but it is the best choice of the two. ▪ Positives are mixed housing/office, means for more to do, makes town look better. ▪ Mixed use/residential would complement revitalized neighborhood. ▪ No. ▪ Endow the parks and make them secure! Love the redesign of flood control to something beautiful. ▪ Include bicycle trails and paths for access. ▪ Will this be a positive or negative effect on crime?
Alternative 2 – Emphasis on more intense employment based development	11	▪ This plan is too heavy on employment. There needs to be another alternative between these two. ▪ Negative: would be more traffic gridlock. ▪ The last thing we need is freeway-focused employment! ▪ Residential would be a more long term possibility.

Mill Street Station Area		
Alternative 1 – Housing and amenities maximized (station split platform north and south of Mill St.)	12	▪ This alternative takes more land into consideration. It is more holistic. ▪ Would make city look good, but I think would make more citizens vulnerable to violence. ▪ No. ▪ Link bikes to SART. Don't split platform across a busy street.
Alternative 2 – Mixed-use adjacent to station and along Mill St. with employment emphasized in other areas (station located north of Mill St.)	13	▪ This alternative is not holistic. ▪ Looking at that part, more employment would help, but would raise property value. ▪ This is less of a residential area, no employment much better here (?) ▪ Link bikes to SART. Mixed use means employment, too! ▪ Would be difficult to attract renters and owners of residences here.

Tippecanoe Station Area		
Alternative 1 – Mixed use and housing north of railroad tracks adjacent to station (station west of railroad tracks)	11	▪ There needs to be a housing element in all station locations, if possible. ▪ I think mixed use would cause mixed emotions due to incorporated offices and residents that are used to quite in the area. ▪ Mixed use is cool, but isn't this a flood zone? ▪ Great location for restaurants and shops.
Alternative 2 – Employment based development at station area (station east of railroad tracks)	17	▪ This alternative is too heavy on employment, which would increase street traffic. ▪ Employment would bring that part of land to a value more than the housing brings now. ▪ Same comment as Mill Street: less of a residential area. ▪ Use as feeder for West Redlands and Loma Linda. ▪ What we need here is more jobs not more houses! Link bikes to SART. ▪ More feasible. ▪ I prefer employment uses here.

California Station Area		
Alternative 1 - Mixed-use at station and north and south of freeway (station and park and ride east of freeway)	29	▪ Mixed use is most desirable immediately surrounding the stations with connections. ▪ Does this mean no Wal-Mart? Because that's fantastic! ▪ Park and ride lots should be under mtce. ▪ Include high rise residential to take advantage of views of the valley and mountains. ▪ No. ▪ I like less density, this is better. ▪ Avoid housing so close to the freeway. ▪ Wal-Mart is bad anyway. Getting ride of over-sized parking lots is a push to transit. ▪ Does not sprawl parking. Minimizes impacts. Continue OBT under freeway with train. Improve sidewalks on Nevada under I-10. Make sure OBT gets underpass at Redlands Blvd. and California St. ▪ Mixed use implies more people and greater incentive to board at the station. ▪ Great potential for redevelopment of the Wal-Mart area.
Alternative 2 - Mixed Use south of the freeway only (station and park and ride on west side of freeway)	6	▪ This alternative assumes that housing is not desirable a little further from the station. ▪ Route 10 is an east-west highway. ▪ Too much constraining development. ▪ Wal-Mart area?

Alabama Street Station Area		
Alternative 1 – Emphasis on Mixed-Use	9	▪ More housing needs to be emphasized. ▪ No. ▪ I don't think the Alabama station is necessary as the city is not that large. ▪ Save open space! ▪ Don't want the station.
Alternative 2 – Mixed-Use at Tri City and High Density Housing focused around new open space	23	▪ This is not a "downtown" area, so more housing would support mass transit. ▪ Good fit with the current park. ▪ High density residential will fundamentally change the character of the town. ▪ Extend bike lane to Highland's Palm Ave. The same road and Alabama are the only bridge connecting W. Highland and Redlands. ▪ Might be an opportunity for low-income folks to buy a house or condo. ▪ Great potential.

Downtown Redlands Station Area	**1st choice**	**2nd choice**	
Between Orange and Eureka	34	6	▪ First choice is more central. ▪ Use existing historic station as point of departure and central transportation center. ▪ Use our station? ▪ Downtown is a must, close to activity centers. ▪ Use with existing station as its central location makes more sense. ▪ Would like to see the historic station reused! ▪ Encourage students to use mass transit.
Eureka/Oriental	5	19	▪ Would benefit more areas.

Downtown Redlands Station Area	**1st choice**	**2nd choice**	
Stuart/7th Street	0	9	▪ Second choice boosts better opportunities. ▪ Good connection with U of R. Must have rail with trail for Orange Blossom Trail. ▪ Too remote and too many impacts.

University of Redlands Station Area		
Alternative 1 – High-Density Residential such as Faculty housing near station (station adjacent to University	23	▪ This alternative promotes more auto traffic to commercial areas. ▪ Better. ▪ Integrate Orange Blossom Trail to link U of R with Downtown station only ½ mile away.
Alternative 2 – Mixed-Use near station (station adjacent	12	▪ The university community needs mixed use in close proximity. ▪ Mixed use would provide needed “buffer” between rail and private property. ▪ Light rail for downtown. ▪ There is a general lack of services for the university in the area.

REDLANDS PASSENGER RAIL STATION AREA PLANS