Downtown San Jose
Strategy 2000 EIR

Transportation Impact Analysis

Prepared for:

The Redevelopment Agency of the City of San Jose

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Executive Summary

The purpose of this traffic study is to evaluate the long-term traffic impacts associated with the development and redevelopment of Greater Downtown San Jose as identified by *Strategy 2000. Strategy 2000* is a long-range strategy program developed by the Redevelopment Agency of the City of San Jose (RDA) that focuses on redevelopment of the traditional Downtown core and the expansion of the downtown land-uses into areas to the west and north. *Strategy 2000* is a general document that presents a vision for Downtown San Jose and recommends policies and actions to achieve its vision.

This analysis consists of an evaluation of the general development plans for the Greater Downtown area identified by the Strategy Plan. The Greater Downtown area boundary extends beyond the traditional Downtown core to include areas around Diridon Station to the west, areas to the north to approximately Taylor Street, areas to the east that include San Jose State University (SJSU), and areas to the south to approximately I-280 (see Figure 1). The level of development within the boundary as identified in *Strategy 2000* is what is considered the "project" for this analysis. Development projected in *Strategy 2000* for project conditions indicate that the following levels of development will occur above existing development levels:

11.2 msf of office space
8,500 residential dwelling units
1.4 msf of retail space
3,600 hotel guestrooms

This analysis will serve as a base by which to evaluate future individual site-specific development plans. The recommended area-wide transportation improvements can be used as a guide in determining necessary improvements to serve individual developments. Subsequent environmental analysis will be needed only when individual development plans are not consistent with those identified in the Strategy Plan EIR.

The study included level of service analysis of AM and PM peak hour traffic conditions for identified intersections and freeway segments within and surrounding the downtown area. The intersection level of

service analysis consisted of the evaluation of a total of 164 intersections (28 CMP, 129 local, and 7 future signalized intersections). Forty-eight freeway segments also were evaluated. The potential level of service impacts of the planned downtown development levels were evaluated in accordance with the standards set forth by City of San Jose and the Congestion Management Program (CMP) of Santa Clara county. Impacts to transit and pedestrian facilities were determined based on engineering judgement.

Project Impacts

Intersection Impacts

Results of the intersection level of service analysis show that 31 of the 164 study intersections would be impacted by the project according to City of San Jose and CMP (where applicable) level of service standards. Of the 31 impacted intersections, there are 19 intersections at which there are no feasible improvements that can be made to mitigate project impacts. Proposed mitigation measures are presented in Chapter 3.

Freeway Impacts

The results of the freeway segment analysis show that 33 of the 48 freeway segments studied will be impacted by the project according to CMP level of service standards for freeways. Analysis of freeway ramps indicate that three of the 45 ramps studied will operate at poor levels under project conditions. Mitigation is available at two of the ramps. At the third location, the NB SR 87 off-ramp to Julian Street, the impact must be considered significant and unavoidable.

Mitigation of freeway impacts would require widening of the freeways, which is infeasible. Therefore, these impacts must be considered significant and unavoidable. However, there are measures that could reduce the impacts. The measures primarily consist of transit improvements and enhancements as outlined below:

- Extension of BART to San Jose
- Further expansion of LRT lines
- Enhanced Bus Service
- Successful implementation of the parking plan, possibly including increased parking rates, that leads to a greater transit mode-split

Strategy Plan Roadway Improvements

Though the Strategy Plan proposes several significant roadway improvements to serve the downtown area, some of the proposed roadway changes of the Strategy Plan may have an adverse effect on traffic conditions. The Strategy Plan only identifies possible improvements. Actual roadway improvements/changes will be identified at the time of specific development. The means of funding and implementation of the improvements will also be determined with future development.

Project Transit Conditions

The planned growth within the downtown area will require that the already extensive transit system within the downtown area be enhanced. Projections indicate an increase of 50% in transit usage in the

downtown area. Under project conditions, approximately 10,000 downtown related transit trips will be made during each of the AM and PM peak hours. This compares to about 6,600 to 6,700 in the year 2000.

The extension of BART to the downtown area as well as the completion of other planned transit projects described earlier will be critical to the successful development in the Greater Downtown Area. The Strategy Plan outlines the following transit enhancements:

- Encourage bus ridership through the use of efficient, quiet, low-emission vehicles, improved bus shelters, and other rider amenities.

Along with successful implementation of the parking plan, the downtown area demand for transit will be met. Not only will transit users benefit from a more thorough and well connected transit system, but the share of drive-alone auto trips to the downtown area will be reduced.

Project Conditions Pedestrian and Bicycle Enhancements

As with most downtown districts, it has always been of the utmost importance to maintain a pedestrian friendly environment within Downtown San Jose. It is a goal of the Strategy Plan to not only maintain, but also enhance the pedestrian attraction within the downtown area. With the large amount of planned development, increases in vehicular traffic are expected. It is undesirable to inhibit pedestrian flow throughout downtown with the narrowing or elimination of sidewalks for street widening to accommodate vehicular traffic. Rather the Strategy Plan proposes that existing pedestrian facilities be improved and future development designed to better serve pedestrians. The strategy plan proposes the following pedestrian and bicycle facility enhancements:

- Develop a new paseo through the Mitchell block development.
- Provide a new paseo-"Paseo San Pedro"- that links 1st Street, Mitchell Block, and San Pedro Square.
- Develop a new paseo through the improvement of Post Street and Lightstone Alley.
- Build a sidewalk along St. John Street, north of garage.
- Incorporate east-west paseos, passages, arcades or other pedestrian ways at or near the mid-blocks of the rather long north-south blocks, particularly between 1st and Market and 1st and 2nd Streets.
- Improve pedestrian connections from the river parkway to the traditional Downtown center.
- Continue the development of citywide bicycle and pedestrian trail networks, along the Guadalupe River between I-280 and Coleman Avenue, and Los Gatos Creek between I-280 and Santa Clara Street.
- Implement the San Fernando Street Bike Lane plan. The plan calls for bike lanes to be provided along both sides of San Fernando Street between 11th Street and Diridon Station.
- Develop a new plaza on the surface parking lots on the west side of San Pedro Street between Santa Clara and St. John streets to provide a gathering place and forecourt to new housing and retail development. Emphasize the plaza by using building setbacks, landscape elements, lighting fixtures, paving patterns, public seating and active uses around it.

The shift from vehicular use to transit use in the downtown area will hinge on designing of future transit facilities to encourage their use by pedestrians. The transit/pedestrian interaction along with the proposed enhancements of the Strategy Plan will maintain a pedestrian friendly environment while allowing for the growth of downtown.

Project Conditions Parking

Coordination of the proposed parking plan with the anticipated development levels will be critical in the maintenance of a functional transportation system. The parking plan will serve as a tool to control the quantity of parking spaces provided within the downtown core. Controlling the allotment of parking spaces on-site will serve as a tool to encourage the use of transit. The strategy plan proposes the following recommendations as part of the parking management plan for downtown:

- Provide additional parking supply in and around the downtown area. As part of the plan, the potential of several sites to provide parking facilities will be investigated. The parking facilities will most likely consist of parking structures, but surface lots may also be possible. The potential sites include the Greyhound Bus Station block, the block North of the DeAnza Hotel, and the Parkside Hall block.

- Implement the adjustment to the parking code for the Downtown area recently adopted in March of 2004. The parking code for downtown was adjusted to better reflect actual parking demands. The previous code called for 1.5 spaces per 1,000 s.f. of development. Surveys showed a demand of approximately 2.8-3.0 spaces/1,000 s.f. The adjusted code reflects demand by requiring 3.0 spaces/1,000 s.f. With the enhancement of the downtown transit system, it is expected that the demand for on-site parking will be reduced. Therefore, it is also proposed that a portion of the required parking be provided off-site. Of the required 3.0 spaces, 0.45 spaces should be provided off-site.

- The plan would also call for the reduction of required parking for new development with the implementation of Transportation Demand Measures (TDMs). The developments could have their required parking reduced by as much as 15% with the implementation of certain TDMs. The amount of the reduction will depend on the number of measures implemented.

The programs of the parking plan are designed to balance the amount of parking supply and demand while encouraging the use of alternative modes of transportation. The programs of the plan will allow full development of the downtown area while not overburdening the transportation system with an oversupply of parking. The adjustment of the current parking code for the downtown area to reduce the number of spaces required on-site along with TDM programs will create a balanced parking system. With benefits to employers and employees it is expected that alternative means of transportation will be pursued. This shift from private autos to transit will provide some relief to the roadway system.

1. Introduction

The purpose of this traffic study is to evaluate the long-term traffic impacts associated with the development and redevelopment of Greater Downtown San Jose as identified by *Strategy 2000. Strategy 2000* is a long-range strategy program developed by the Redevelopment Agency of the City of San Jose (RDA) that focuses on redevelopment of the traditional Downtown core and the expansion of the downtown land-uses into areas to the west and north. *Strategy 2000* is a general document that presents a vision for Downtown San Jose and recommends policies and actions to achieve its vision.

This analysis consists of an evaluation of the general development plans for the Greater Downtown area identified by the Strategy Plan. The Greater Downtown area boundary extends beyond the traditional Downtown core to include areas around Diridon Station to the west, areas to the north to approximately Taylor Street, areas to the east that include San Jose State University (SJSU), and areas to the south to approximately I-280 (see Figure 1). The level of development within the boundary as identified in *Strategy 2000* is what is considered the "project" for this analysis. Development projected in *Strategy 2000* for project conditions indicate that the following levels of development will occur above existing development levels:

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This analysis will serve as a base by which to evaluate future individual site-specific development plans. The recommended area-wide transportation improvements can be used as a guide in determining necessary improvements to serve individual developments. Subsequent environmental analysis will be needed only when individual development plans are not consistent with those identified in the Strategy Plan EIR.

Not to Scale

880
87
101
280
Old Bayshore
N. 1st St
N. 4th St
Guadalupe Pkwy
Hwy
Oakland Rd
Commercial St
Berryessa
Mabury
Mabury Rd
N. King Rd
McKee Rd
Alum Rock
N. 5th St
N. 7th St
N. 8th St
N. 5th St
N. 6th St
N. 2nd St
N. 11th St
N. 10th St
N. 13th St
N. 17th St
N. 19th St
E. Taylor St
Jackson St
Empire St
W. Hedding St
N. 3rd St
San Pedro St
Coleman Av
Stockton Av
E. Julian St
St. James St
St. John St
E. Santa Clara St
N. 24th St
San Fernando St
San Antonio St
E. San Antonio St
San Carlos St
San Salvador St
E. William St
E. Reed St
Margaret St
E. Virginia St
Story Rd
McLaughlin Av
N. Market St
San Pedro St
N. 1st St
San Jose State University
Almaden Bl
Woz
The Alameda
Delmas
Cahill St
Montgomery St
Autumn St
Race St
Sunol St
Park Av
San Carlos St
Auzerais Av
Lincoln Av
Meridian Av
Locust St
E. Virginia St
Martha St
Keyes St
S. 11th St
S. 10th St
S. 7th St
S. 6th St
Senter Rd
Goodyear
Vine St
Almaden Av
W. Alma Av
Bird Av
Willow St
Fruitdale Av
Lincoln Av
Minnesota Av
Monterey Hwy
Curtner Av
Tully Rd

LEGEND

- = Downtown Core Boundary
- = Downtown Core Study Intersection
- = Expanded Core Boundary
- = Expanded Core Study Intersection
- = Study Intersection Outside Core/Expanded Core
- = Gateway Corridor

Hexagon
Transportation Consultants, Inc.

Figure 1

DOWNTOWN STRATEGY EIR STUDY AREA AND INTERSECTIONS

Downtown San Jose

Scope of Study

Intersection and Freeway Level of Service Analysis

This study was conducted for the purpose of identifying the potential traffic impacts related to the proposed future development on the immediate and surrounding transportation system of the Downtown area. The impacts of the development were evaluated following the standards and methodologies set forth by the City of San Jose and the Congestion Management Program (CMP). The traffic analysis is based on peak-hour levels of service for signalized intersections and freeway segments. Detailed operational analysis including signal warrants and vehicle queuing analysis will be completed at the time of preparation of specific development traffic impact analyses. Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Year 2000 Existing Conditions.* Existing traffic volumes were obtained from traffic counts conducted in approximately the year 2000. Year 2000 counts were used to maintain consistency with the model that uses the Year 2000 as its base year. Year 2000 also reflects peak traffic volumes for the downtown area, traffic volumes since the year 2000 have declined slightly.

Scenario 2: *Project Conditions.* Traffic projections for project conditions were developed with the use of a traffic model. The project conditions forecasts include traffic associated with the identified future development within the Greater Downtown boundary as well as future development in Santa Clara County as a whole.

Methodology

This section presents the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

The Traffic Model

Model Structure

The City of San Jose's traffic forecasting model was developed to help the city project AM and PM peak hour traffic impacts attributable to proposed changes to the city's General Plan. The model is implemented using the TRANPLAN transportation planning software system. The San Jose model includes the four elements traditionally associated with models of this kind. These elements include:

- Trip Generation,
- Trip Distribution,
- Mode Choice, and
- Traffic Assignment

The fundamental structure of the model includes a computer readable representation of the street system (highway network) that defines street segments (links) identified by end points (nodes). Each roadway link is further represented by key characteristics (link data) that describe the length, travel speeds, and vehicular capacity of the roadway segment. Small geographic areas (traffic analysis zones also called

TAZ's) are used to represent the planned land use activity throughout the city's planning area. The boundaries of these small geographic areas are typically defined by the modeled street system, as well as natural and man made barriers to traffic.

Model Components

The socioeconomic data for each TAZ in the model includes information about the number of households (stratified by household income and structure type), and employment (stratified by groupings of Standard Industrial Codes). The trip generation element of the San Jose model projects the traffic attributable to normal household and employment centers using trip generation rates and factors. The trip generation rates were derived from the Metropolitan Transportation Commission's 1981 San Francisco Bay Region Travel Survey, Caltrans San Francisco Bay Region and San Diego Trip Generation Studies, the Institute of Transportation Engineering trip generation studies and Arizona Department of Transportation studies.

Activity centers that have unusual traffic generating characteristics such as schools, hotels, large shopping centers, and airports are designated as *special generators*, and their associated traffic is manually estimated based information from the above cited sources of trip generation information. Projected trips entering and leaving the County of Santa Clara are taken from a larger regional model run by the Metropolitan Transportation Commission (MTC) and the Valley Transportation Agency (VTA).

Model Output

Travel times within and between TAZs (intra-zonal and inter-zonal and terminal times) are developed from the network being modeled. Travel times within zones (intra-zonal travel times) are derived for each zone based on half its average travel time to adjacent zones. Time to walk to and from the trip maker's car (terminal times) are also added. For special areas, additional terminal time is added to reflect the extra time associated with large parking lots, parking structures and areas with limited parking, specifically zones with large employer sites, shopping centers and in the downtown area. The projected daily trips are distributed using a standard gravity model and friction factors calibrated for the Santa Clara County area. The resulting trip distribution (trip table) factored to represent the number of trips occurring during the PM peak hour, the directionality of those trips, and deducting the estimated non-auto related trip-making (transit travel and carpool passengers). The assignment of the trip table to the roadway network uses a route selection procedure based on minimum travel time paths (as opposed to minimum travel distance paths) between TAZs and is done using a capacity constrained equilibrium seeking process. This capacity constrained traffic assignment process enables the model to reflect diversion of traffic around congested portions of the modeled street system.

In addition to providing projected AM and PM peak hour volumes and ratios comparing projected traffic volume to available roadway capacity (v/c ratios) on each roadway segment, the model also provides information on vehicle-miles and vehicle-hours of travel by facility type (freeway, expressways, arterial streets, etc.). These informational reports are used to compare and evaluate the project traffic impacts attributable to proposed amendments to the currently adopted San Jose General Plan.

Model Forecasts and Traffic Growth Factors

It was agreed, at the initial project coordination meeting, to develop and use intersection specific traffic growth factors to factor up the existing traffic counts for all study intersections being used in the downtown traffic analysis. This decision was based on a successful recent experience (Citywide LOS Study) where the growth factors were developed using the 2000 and 2025 CMP traffic model scenarios.

Although the CMP traffic models were acceptable for the Citywide LOS Study, the lack of downtown area detail (traffic zones and roadway links) precluded selecting the CMP model for the downtown traffic analysis.

The San Jose TRANPLAN Model does provide a good level of detail within the downtown area. The traffic zone system and the roadway network are well defined. Therefore, it was decided to use a recently developed database of year 2000 employment within Santa Clara County, the year 2000 Census data, and a recently developed year 2000 roadway network (coded for the Evergreen Traffic Study) to assemble a year 2000 San Jose "base case" TRANPLAN modeling scenario.

Normally, the San Jose TRANPLAN model is only used to assess the PM peak hour traffic impacts attributable to proposed General Plan Amendments. However, in 1991 an AM peak hour modeling process was developed for use on the San Carlos Street Closure Study (through the San Jose University Campus). The previously used Model Forecasts AM peak hour modeling procedures were applied for this study so that AM peak hour traffic growth factors could be projected.

Once the year 2000 modeling procedures were implemented, and both the year 2000 and project conditions AM and PM modeling procedures were in place a computer program was written to sum the 2000 and project conditions intersection approach volumes and calculate a traffic growth factor. The growth factor was calculated by dividing the sum of the project conditions intersection approach volumes by the sum of the year 2000 intersection approach volumes.

Signalized Intersection Analysis

Signalized Intersection Level of Service Methodology

The City of San Jose level of service methodology is based on the *Highway Capacity Manual* (HCM) method for signalized intersections. Signalized intersection operations are evaluated using the 1985 HCM Operations Method and TRAFFIX software. The method evaluates intersection LOS on the basis of average delay time for all vehicles at the intersection. Since TRAFFIX is also the CMP-designated intersection level of service software, the City of San Jose methodology employs the CMP default values for the analysis parameters. The City of San Jose level of service standard for signalized intersections, not located within the downtown core, is LOS D or better. Intersections located within the downtown core are exempt from having to meet the city's level of service policy. As such, levels of service for the downtown core intersections are reported for informational purposes only. The only difference between the San Jose and CMP analyses is that project impacts are determined on the basis of different level of service standards –the CMP level of service standard for signalized intersections is LOS E or better. The correlation between average delay and level of service is shown in Table 1.

Study Intersections

Traffic conditions at the selected study intersections were analyzed for the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 AM, and the PM peak hour is typically between 4:00 and 6:00 PM. It is during these periods that the most congested traffic conditions occur on an average day. All signalized intersections within Downtown San Jose were studied. Additionally, intersections that surround the downtown area and are currently operating at LOS D or worse also were studied. It is expected that any intersections outside the downtown area operating at LOS C or better would not be significantly affected by project traffic, since the project would not add a

Table 1
Intersection Level of Service Definitions Based on Delay

Level of Service	Description	Average Stopped Delay Per Vehicle (Sec.)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	Less than 5.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	5.1 to 15.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	15.1 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	25.1 to 40.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	40.1 to 60.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	Greater than 60.0

Source: Transportation Research Board, Highway Capacity Manual, Special Report 209 (Washington, D.C., 1985), pp. 9-4, 5.

sufficient amount of traffic to cause the degradation of levels of service at any intersection by two grades. The study area and intersections are shown in Figure 1 and are listed below:

Downtown Core Intersections

1 Fourth Street and Julian Street
2 Fourth Street and St. James Street
3 Fourth Street and St. John Street
4 Fourth Street and Santa Clara Street
5 Fourth Street and San Fernando Street
6 Fourth Street and San Carlos Street
7 Fourth Street and San Salvador Street
8 Fourth Street and William Street
9 Fourth Street and Reed Street
10 Third Street and Julian Street

11 Third Street and St. James Street
12 Third Street and St. John Street
13 Third Street and Santa Clara Street
14 Third Street and San Fernando Street
15 Third Street and San Carlos Street
16 Third Street and San Salvador Street
17 Third Street and William Street
18 Third Street and Reed Street
19 Second Street and Julian Street
20 Second Street and St. James Street
21 Second Street and Santa Clara Street
22 Second Street and San Carlos Street
23 Second Street and San Salvador St
24 Second Street and William Street
25 Second Street and Reed Street
26 First Street and Julian Street
27 First Street and St. James Street
28 First Street and Santa Clara Street
29 First Street and San Carlos Street
30 First Street and Reed Street
31 Market Street and Julian Street
32 Market Street and St. James Street
33 San Pedro Street and St. James Street
34 Market Street and Santa Clara Street
35 Market Street and San Fernando Street
36 Market Street and San Carlos Street*
37 SR 87 and Julian Street (E)*
38 Almaden Bvld. and Santa Clara Street (E)
39 Almaden Boulevard and Park Avenue
40 Almaden Boulevard and San Carlos Street*
41 Almaden Boulevard and Convention Center
42 Almaden Boulevard and Woz Way
43 Almaden Boulevard and Reed Street
44 Almaden Boulevard and I-280 NB ramp
45 Almaden Blvd. and Santa Clara Street (W)
46 SR 87 and Santa Clara Street*
47 Woz Way and Park Avenue
48 Woz Way and San Carlos Street
49 Woz Way and Auzerais Avenue
50 SR 87 and Woz Way
51 SR 87 and Julian Street (W)*

Expanded Downtown Core Intersections

52 Coleman Avenue and Taylor Street
53 Stockton Avenue and The Alameda
54 Cahill Street and Santa Clara Street
55 Montgomery Street and Santa Clara Street*
56 Autumn Street and Santa Clara Street*
57 Montgomery Street and Park Avenue

58 Bird Avenue and San Carlos Street*
59 Bird Avenue and Auzerais Avenue
60 I-280 and Bird Avenue (N)*
61 I-280 and Bird Avenue (S)*
62 Delmas Street and San Fernando St (Fut)
63 Delmas Avenue and Park Avenue
64 Delmas Avenue and San Carlos Street
65 Delmas Avenue and Auzerais Avenue

Intersections Outside Core/Expanded Core

66 King Road and Mabury Road
67 King Road and McKee Road
68 King Road and Alum Rock Avenue*
69 King Road and Story Road
70 I-280 and McLaughlin Avenue*
71 McLaughlin Avenue and Story Road
72 Nineteenth Street and Julian Street (Fut)
73 Seventeenth Street and Julian Street
74 Senter Road and Keyes Street
75 Oakland Road and Commercial Street
76 US 101 and Oakland Road (N)*
77 US 101 and Oakland Road (S)*
78 Oakland Road and Hedding Street
79 Thirteenth Street and Julian Street
80 Thirteenth Street and St. James Street
81 Eleventh Street and Hedding Street
82 Eleventh Street and Taylor Street
83 Eleventh Street and Jackson Street
84 Eleventh Street and Empire Street
85 Eleventh Street and Julian Street
86 Eleventh Street and St. James Street
87 Eleventh Street and St. John Street
88 Eleventh Street and Santa Clara Street
89 Eleventh Street and San Fernando Street
90 Eleventh Street and San Antonio Street
91 Eleventh Street and San Carlos Street
92 Eleventh Street and San Salvador
93 Eleventh Street and William Street
94 Eleventh Street and Reed Street
95 I-280 and Eleventh Street (N)*
96 I-280 and Eleventh Street (S)*
97 Eleventh Street and Keyes Street
98 Tenth Street and Hedding Street
99 Tenth Street and Taylor Street
100 Tenth Street and Jackson Street
101 Tenth Street and Empire Street
102 Tenth Street and Julian Street
103 Tenth Street and St. James Street
104 Tenth Street and St. John Street

105 Tenth Street and Santa Clara Street
106 Tenth Street and San Fernando Street
107 Tenth Street and San Antonio Street
108 Tenth Street and San Carlos Street
109 Tenth Street and San Salvador Street
110 Tenth Street and William Street
111 Tenth Street and Reed Street
112 I-280 and Tenth Street (N)*
113 I-280 and Tenth Street (S)*
114 Tenth Street and Keyes Street
115 Seventh Street and Julian Street
116 Seventh Street and Margaret Way
117 Seventh Street and Virginia Street
118 Seventh Street and Keyes Street
119 Fifth Street and Julian Street (Fut)
120 Fifth Street and Reed Street
121 Fourth Street and Hedding Street
122 Fourth Street and Jackson Street
123 Fourth Street and Empire Street (Fut)
124 Third Street and Jackson Street
125 Third Street and Empire Street (Fut)
126 Third Street and Virginia Street
127 Third Street and Martha Street (Fut)
128 Third Street and Keyes Street
129 I-880 and First Street (N)*
130 I-880 and First Street (S)*
131 First Street and Hedding Street
132 First Street and Taylor Street
133 Second Street and Virginia Street
134 Second Street and Keyes Street
135 First Street and Keyes Street*
136 First Street and Second Street
137 First Street and Alma Avenue*
138 Monterey Road and Curtner Avenue*
139 San Pedro Street and Taylor Street
140 Almaden Avenue and Grant Street
141 Almaden Avenue and Virginia Street
142 Almaden Avenue and Willow Street
143 Almaden Avenue and Goodyear Street
144 Almaden Avenue and Alma Avenue
145 Vine Street and Grant Street
146 Vine Street and Virginia Street
147 Vine Street and Willow Street
148 Vine Street and Goodyear Street (Fut)
149 Vine Street and Alma Avenue
150 Coleman Avenue and Airport Boulevard
151 I-880 and Coleman Avenue (N)*
152 I-880 and Coleman Avenue (S)*
153 Coleman Avenue and Hedding Street
154 Bird Street and Willow Street

155	Bird Street and Minnesota Avenue
156	The Alameda and Hedding Street*
157	The Alameda and Naglee Avenue*
158	The Alameda and Race Street*
159	Lincoln Avenue and San Carlos Street
160	Lincoln Avenue and Willow Street
161	Lincoln Avenue and Minnesota Avenue
162	Meridian Avenue and San Carlos Street
163	Meridian Avenue and Fruitdale Avenue
164	Meridian Avenue and Willow Street

CMP intersections are denoted with an asterisk (*)

Significant Intersection Impact Criteria

City of San Jose Definition of Significant Intersection Impacts

The project is said to create a significant adverse impact on traffic conditions at a signalized intersection in the City of San Jose, not located within the downtown core, if for either peak hour:

1. The level of service at the intersection degrades from an acceptable LOS D or better under existing conditions to an unacceptable LOS E or F under project conditions, or

2. The level of service at the intersection is an unacceptable LOS E or F under existing conditions and the addition of project trips causes both the critical-movement delay at the intersection to increase by four or more seconds and the demand-to-capacity ratio (V/C) to increase by .01 or more.

An exception to this rule applies when the addition of project traffic reduces the amount of average stopped delay for critical movements (i.e. the change in average stopped delay for critical movements is negative). In this case, the threshold of significance is an increase in the critical V/C value by .01 or more.

A significant impact by City of San Jose standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to existing conditions or better.

CMP Definition of Significant Intersection Impacts

The definition of a significant impact at a CMP intersection is the same as for the City of San Jose, except that the CMP standard for acceptable level of service at a CMP intersection is LOS E or better. A significant impact by CMP standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection conditions to LOS E or better.

Freeway Segment Analysis

Freeway Segment Level of Service Methodology

Year 2000 Density Method

As prescribed in the CMP technical guidelines, the level of service for freeway segments is estimated

based on vehicle density. Density is calculated by the following formula:

$$D = V / (N*S)$$

where:

D= density, in vehicles per mile per lane (vpmpl)
V= peak hour volume, in vehicles per hour (vph)
N= number of travel lanes
S= average travel speed, in miles per hour (mph)

The vehicle density on a segment is correlated to level of service as shown in Table 2. The CMP defines an acceptable level of service for freeway segments as LOS E or better.

Table 2
Freeway Segment Level of Service Definitions Based on Density

Level of Service	Density (vehicles/mile/lane)
A	<10.0
B	10.1 - 16.0
C	16.1 - 24.0
D	24.1 - 46.0
E	46.1 - 55.0
F	>55

Source: 1996 Monitoring and Conformance Report, Santa Clara Valley Transportation Authority, Congestion Management Program, June 1997

Project Conditions Volume-to-Capacity Ratio Method

Unfortunately, the use of vehicle density does not lend itself well to the calculation of future levels of service for freeway segments. It is not possible to project the future travel speeds on the segments, especially for those segments that have future widening, due to changes in traffic conditions. Therefore, future levels of service for freeway segments were calculated based on a volume-to-capacity ratio (V/C). The V/C method is simpler and does not use travel speed as a variable in its calculation. Freeway segment level of service based on V/C is shown in Table 3.

Study Freeway Segments

Freeway segments to be included in the analysis were selected based on their proximity to the downtown area. Levels of service were identified based on the CMP monitoring report.

I-280, I-880 to Meridian Avenue
I-280, Meridian Avenue to Bird Avenue
I-280, Bird Avenue to SR 87
I-280, SR 87 to 10th Street
I-280, 10th Street to McLaughlin Avenue
I-280, McLaughlin Avenue to US 101
I-680, US 101 to King Road

Table 3
Freeway Segment Levels of Service Definitions Based on Volume-to-Capacity

Level of Service	Description	V/C Ratio
A	Primarily free-flow operations. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	Less than 0.36
B	Reasonably free-flow conditions. The ability to maneuver within the traffic traffic stream is only slightly restricted.	0.36 - 0.54
C	Provides for stable operation, however flows approach the range in which small increases will cause a substantial deterioration in service. Freedom to maneuver withtin the traffic is noticeably restricted.	0.55 - 0.77
D	Borders on unstable flow. Small increases in flow cause substantial deterioration in service. Freedom to maneuver within the traffic stream is severely limited. Minor incidents can be expected to create substantial queuing, as the traffic stream has little space to absorb disruptions.	0.78 - 0.93
E	Operations are extremely unstable. Any incident can be expected to produce a serious breakdown with extensive queuing. Maneuverability within the traffic stream is extremely limited.	0.94 - 1.00
F	Forced or breakdown conditions. Such conditions generally exist within queues forming behind breakdown points.	Greater than 1.00

Source: 1985 Highway Capacity Manual for freeway sections with a 70 mph design speed.

I-880, The Alameda to Coleman Avenue
I-880, Coleman Avenue to SR 87
I-880, SR 87 to First Street
I-880, First Street to US 101
I-880, US 101 to Brokaw Road
SR 87, Coleman Avenue to Julian Street
SR 87, Julian Street to I-280
SR 87, I-280 to Alma Avenue
SR 87, Alma Avenue to Almaden Boulevard
SR 87, Almaden Boulevard to Curtner
US 101, Old Bayshore to I-880
US 101, I-880 to Oakland Road
US 101, Oakland Road to McKee Road
US 101, McKee Road to Santa Clara Street
US 101, Santa Clara Street to I-280
US 101, I-280 to Story Road
US 101, Story Road to Tully Road

CMP Definition of Significant Freeway Segment Impacts

A project is said to create a significant adverse impact on traffic conditions on a CMP freeway segment if for either peak hour:

1. The level of service on the freeway segment is an unacceptable LOS F under project conditions, and

2. The number of project trips on that segment constitutes at least one percent of capacity on that segment.

3. The level of service on the freeway segment degrades from an acceptable LOS under existing conditions to an unacceptable LOS F under project conditions.

A significant impact by CMP standards is said to be satisfactorily mitigated when measures are implemented that would restore freeway conditions to LOS E or better.

Parking Analysis

The effects of the proposed development levels on parking facilities in the downtown area were evaluated qualitatively. Based on existing and planned parking facilities, the projected supply vs. demand with the proposed future development was evaluated. Impacts on parking are considered significant if the project would:

- Cause a demand for parking that would be substantially greater than the planned parking supply; or

- Cause a substantial reduction in the availability of on-street parking, either through removal or increased demand for existing on-street parking.

Transit Analysis

With such extensive development for the Downtown area, it can be expected that transit services will be significantly effected. The effects on transit service were evaluated to determine necessary improvements to the existing transit system. The project is believed to create a significant impact on transit service if it would:

- Induce a substantial growth or concentration of population beyond the capacity of existing or planned public transit facilities;

- Increase demand for public transit service to such a degree that accepted service standards are not maintained;

- Reduce availability of public transit to users, or interfere with existing transit users; or

- Be located more than three-quarter mile from existing or planned public transit services, and would have the potential to generate a demand for such services.

Bicycle and Pedestrian Analysis

Bicycle and pedestrian facilities were evaluated to determine the effects of the proposed development levels. Impacts of bicycle and pedestrian facilities are considered to occur if the project would:

- Cause substantial inconvenience, interfere, or delay to users of existing bicycle or pedestrian travel ways;
- Substantially reduce bicycle or pedestrian access to activity center; or
- Substantially reduce safety for bicyclists or pedestrians.

Report Organization

The remainder of this report is divided into four chapters. Chapter 2 describes existing conditions including the existing roadway network, transit service, and existing bicycle and pedestrian facilities for the Greater Downtown area. Chapter 3 presents the method used to estimate traffic associated with the proposed Strategy Plan development and its impacts on the transportation system under project conditions and mitigation measures. Chapter 4 presents the intersection operations under 2025 Cumulative conditions. Chapter 5 presents the conclusions of the analysis.

2.
Existing Transportation System

This chapter describes existing conditions for all of the major transportation facilities in the Greater Downtown area, including the roadway network, parking, transit service, and bicycle and pedestrian facilities.

Existing Roadway Network

Regional access to the Downtown area is provided via I-680, I-280, US 101, I-880, and SR-87. These facilities are described below:

Interstate-680 is an eight-lane freeway providing regional access to San Jose. It extends in a north-south direction from its junction with I-280 and US 101 near downtown San Jose through the East Bay to its junction with I-80 in Fairfield. Both directions of I-680 serve as peak commute travel during both the AM and PM peak hours.

Interstate-280 connects from US 101 in San Jose to I-80 in San Francisco. It is generally an eight-lane freeway in the vicinity of downtown San Jose. It also has auxiliary lanes between some interchanges. The section of I-280 just north of the Bascom Avenue overcrossing has six mixed-flow lanes and two high-occupancy-vehicle (HOV) lanes. Connections from I-280 to downtown San Jose are provided via a full interchange at Bird Avenue, and partial interchanges at Seventh Street (no north on-ramp), at Almaden/Vine (ramps to/from north), Market Street (ramp to south), and Fourth Street (ramp to north). Connections are also available indirectly via an interchange with SR 87.

US 101 is a north-south freeway that extends northward though San Francisco and southward through Gilroy. Within the study area, US 101 is an eight-lane facility that includes two high-occupancy vehicle (HOV) lanes. During the peak commute hours, the mixed-flow lanes operate under stop-and-go conditions in the peak direction of travel—northbound in the AM and southbound in the PM. Within the HOV lane, traffic flows well, although volumes are approaching capacity during the peak periods. US 101

lies to the east of downtown, but access to the downtown area is provided via interchanges with Santa Clara Street and Julian Street and its connection with I-280.

I-880 connects from I-280 in San Jose, where it is a continuation of SR 17, to I-80 in Oakland. It provides six travel lanes through San Jose. I-880 lies somewhat north of downtown San Jose, but has connections via interchanges at Coleman Avenue and First Street.

State Route 87 connects from SR 85 in south San Jose to US 101 near the San Jose airport. It is generally a four-lane freeway from SR 85 to Coleman, with auxiliary lanes near the I-280 interchange. North of Coleman, SR 87 becomes an at-grade arterial street with signalized intersections. The arterial section is currently being upgraded to a freeway, with a projected completion date of later this year. Connections from SR 87 to downtown San Jose are provided via a full interchange at Julian Street and partial interchanges at Park Avenue (ramps to/from north only), at Auzerais Avenue (ramps to/from south only), and at Santa Clara Street (northbound off-ramp only).

Local access to the downtown area is provided by numerous major arterials and minor streets. Described below are the major arterials that feed the Downtown area:

Market Street is a north-south four-lane roadway that runs from Julian Street to Reed Street. North of Julian Street, Market Street becomes Coleman Avenue. South of Reed Street, Market Street becomes South First Street.

Coleman Avenue is a four-lane arterial that provides access to I-880 and the Airport from the Downtown area. It runs in a north-south direction from Julian Street at the northern boundary of Downtown San Jose to De La Cruz Boulevard in Santa Clara. Between I-880 and De La Cruz Boulevard, Coleman Avenue provides three lanes in each direction.

North First Street is a one-lane and one-way northbound street between San Carlos Street and Julian Street. From San Carlos to Julian Street, the Guadalupe LRT line runs along the right side of First Street. North of Julian Street, First Street transitions to a two-way roadway that is divided by the Guadalupe LRT line. South of San Carlos Street, First Street transitions to a two-way roadway and becomes Monterey Road.

Almaden Boulevard is a six-lane north-south roadway that runs from Julian Street to I-280. South of I-280, Almaden Boulevard provides access to and from the south via its connections to Vine Street and Almaden Avenue. Access to SR 87 is provided via its intersection with Notre Dame Street and Santa Clara Street.

Bird Avenue is a four-lane north-south arterial that provides access to I-280 and the downtown area. Bird Avenue runs from the Willow Glen Area to Park Avenue.

Julian Street is primarily a one-way westbound two-lane roadway within the downtown core. West and east of the downtown core at SR 87 and 17th Street, respectively, Julian Street is generally a two-way two-lane facility. Julian Street provides regional access to the Downtown area through its full interchange with SR 87.

The Alameda (State Route 82) is generally a four-lane north-south arterial that runs from Santa Clara University to the downtown area (Diridon Train Station) where it becomes Santa Clara Street.

Santa Clara Street is a four-lane east-west roadway that provides access from the east and west of the

downtown area. East of US 101, Santa Clara Street becomes Alum Rock Avenue and west of the Caltrain bridge it becomes The Alameda.

San Fernando Street is a four-lane east-west arterial that runs from 17th Street to Montgomery Street. Outside of the downtown area, specifically west of Almaden Boulevard and east of 10th Street, San Fernando Street is a two-lane roadway.

San Carlos Street is a four-lane east-west arterial that runs from 4th Street to I-880 at which point it becomes Stevens Creek Boulevard.

Park Avenue is an east-west roadway that extends from Market Street to Meridian Avenue. West of Meridian Avenue, Park Avenue proceeds in a northwest direction into Santa Clara. Park Avenue transitions from two to four lanes at various points.

Fourth Street is a north-south arterial that runs from I-280 to US 101. Limited freeway access is provided via a northbound ramp to I-280 and southbound ramp to US 101. Between Taylor Street and I-280, Fourth Street is a three-lane one-way southbound roadway. Two lanes in each direction are provided north of Taylor Street.

Seventh Street is a two-lane north-south roadway providing access from northbound and southbound I-280. Seventh Street runs from Hedding Street to SJSU, at which point it ends. It continues on the south side of SJSU to I-280.

Tenth Street is a one-way three-lane southbound arterial that runs from I-880 to Tully Road.

Eleventh Street is a one-way three-lane northbound arterial that runs from Keyes Street to Hedding Street.

Existing Traffic Volumes

Existing peak-hour traffic volumes were obtained from the City of San Jose. For the purpose of this study traffic counts from approximately the Year 2000 were used. Year 2000 counts were used to maintain consistency with the model that uses the Year 2000 as its base year. The existing peak-hour intersection volumes at each study intersection are included in Appendix A.

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were provided by city staff and confirmed by observations in the field. Lane configurations for each of the study intersections can be found within the level of service calculation sheets in Appendix B.

Existing Intersection Levels of Service

The results show that the following five signalized study intersections currently operate at an unacceptable level of service, LOS E or worse (see Table 4 and Figure 2):

52 Coleman Avenue and Taylor Street

Table 4
Existing Unacceptable Intersection Levels of Service

	Intersection	Peak Hour	Count Date	Ave. Delay	LOS
Expanded Downtown Core Intersections					
52	Coleman Avenue and Taylor Street	AM	1/29/1997	47	E
		PM	1/29/1997	34	D
Intersections Outside Core/Expanded Core					
82	Eleventh Street and Taylor Street	AM	3/21/2001	44	E
		PM	3/21/2001	7	B
132	First Street and Taylor Street	AM	5/20/1997	34	D
		PM	2/13/1997	49	E
152	I-880 and Coleman Avenue (S)*	AM	3/21/2000	136	F
		PM	3/21/2000	10	B
153	Coleman Avenue and Hedding Street	AM	3/19/1997	44	E
		PM	10/29/1996	36	D

* Denotes CMP intersection.

82 Eleventh Street and Taylor Street
132 First Street and Taylor Street
152 I-880 and Coleman Avenue (S)*
153 Coleman Avenue and Hedding Street

* Denotes CMP Intersection

The two CMP designated intersections are operating at an unacceptable LOS F based on CMP level of service standards. A table summarizing the intersection level of service results for all intersections and calculation sheets are included in Appendix B.

Year 2000 Freeway Segment Levels of Service

Traffic volumes and levels of service for the subject freeway segments were taken from the 2000 CMP Annual Monitoring Report. Based on the monitoring report, 40 of the 48 freeway segments analyzed currently operate at an unacceptable LOS F during at least one of the peak hours. Those segments operating at LOS F conditions are identified in Figure 3. Summary tables of the freeway segment analysis are presented in Appendix C.

Nearly all peak direction freeway segments in the downtown area are currently operating under poor traffic conditions. The peak directions of travel are northbound during the AM peak hour and southbound during the PM peak hour. Congested conditions are apparent on I-880, US 101, and SR 87. Congestion occurs on SR 87 between Curtner Avenue and Coleman Avenue during the AM peak hour and Julian Street to Curtner Avenue during the PM peak hour. During the PM peak hour the congested conditions are due to the I-280 to SB SR 87 ramps. The large volume of traffic merging onto SB SR 87 south of I-280 exceeds the capacity of the freeway. Poor conditions on US 101 and I-880 in both peak directions of travel are due to the inadequate capacity of the freeways. Congestion along I-280/I-680 occurs in both

Not to Scale

LEGEND

= Downtown Core Boundary

= Downtown Core Study Intersection

= Expanded Core Boundary

= Expanded Core Study Intersection

= Study Intersection Outside Core/Expanded Core

= LOS E

= LOS F

= Gateway Corridor

NOTE:
Identified intersections operate at LOS E or F during at least one peak hour.

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Figure 2

YEAR 2000 INTERSECTION LEVEL OF SERVICE CONDITIONS

Downtown San Jose

Not to Scale

880
87
101
280
Old Bayshore
N. 1st St
N. 4th St
Hwy
Oakland Rd
Commercial St
Berryessa
Mabury
Mabury Rd
N. King Rd
McKee Rd
Alum Rock
Guadalupe Pkwy
N. 5th St
N. 2nd St
N. 5th St
N. 6th St
N. 7th St
N. 8th St
N. 10th St
N. 11th St
N. 13th St
N. 17th St
N. 19th St
E. Taylor St
Jackson St
Empire St
W. Hedding St
N. 3rd St
E. Julian St
St. James St
St. John St
E. Santa Clara St
N. 24th St
E. San Antonio St
San Fernando St
San Antonio St
San Carlos St
San Salvador St
E. William St
E. Reed St
Margaret St
E. Virginia St
Coleman Av
San Pedro St
Stockton Av
N. Market St
San Pedro St
N. 1st St
San Jose State University
Almaden Bl
Woz
Park Av
Delmas
The Alameda
Cahill St
Montgomery St
Autumn St
Race St
Sunol St
San Carlos St
Auzerais Av
Meridian Av
Lincoln Av
Locust St
E. Virginia St
Martha St
Keyes St
S. 6th St
S. 7th St
S. 10th St
S. 11th St
Senter Rd
Story Rd
McLaughlin Av
Goodyear
Vine St
Almaden Av
W. Alma Av
Bird Av
Willow St
Fruitdale Av
Lincoln Av
Minnesota Av
Monterey Hwy
Tully Rd
Curtner Av

NOTE:
Highlighted segment operates at LOS F in at least one direction during at least one peak hour.

AM Peak Hour (LOS F)

PM Peak Hour (LOS F)

Figure 3

YEAR 2000 FREEWAY SEGMENT LEVEL OF SERVICE CONDITIONS

Downtown San Jose

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directions during both peak hours due to operational problems such as merge areas and interchanges. Poor levels of service on the downtown freeway segments are primarily attributable to traffic moving through the downtown area bound for destinations to the north or south. This traffic pattern is evident from intersection level of service calculations. Though the freeway segments are operating poorly, intersections operate, for the most part, at acceptable levels. Freeway ramp analysis also indicates that all freeway ramps serving the downtown area are currently operating at acceptable levels. Any vehicle queues at the ramps are due to ramp metering which is used to maintain freeway mainline operations.

Existing Transit Service

Downtown San Jose is a hub for nearly all major transit services. Connections between bus lines, light rail, and Caltrain are provided within the downtown area. The many choices and extensive transit system within downtown make transit an attractive alternative to both employees and residents. Existing transit service within the greater Downtown area is provided by the VTA, ACE, Amtrak, and Caltrain. The transit services are described below and shown on Figure 4.

VTA Bus Service

The Downtown area is served by several local buses. Table 5 shows bus lines, service terminus points, primary service roadways, and headway times during commute hours for the Downtown Area.
VTA also provides a shuttle service in the downtown area, Downtown Area Shuttle (DASH). DASH provides shuttle service from the Diridon Caltrain station to the Paseo De San Antonio and Convention Center LRT stations via San Fernando Street and West San Carlos Street.

An express service, Highway 17 Express Bus, is provided by the VTA and Santa Cruz Metro. The bus line provides service from Santa Cruz/Scott's Valley to Downtown San Jose (Diridon Station) on 15-60 minute headways.

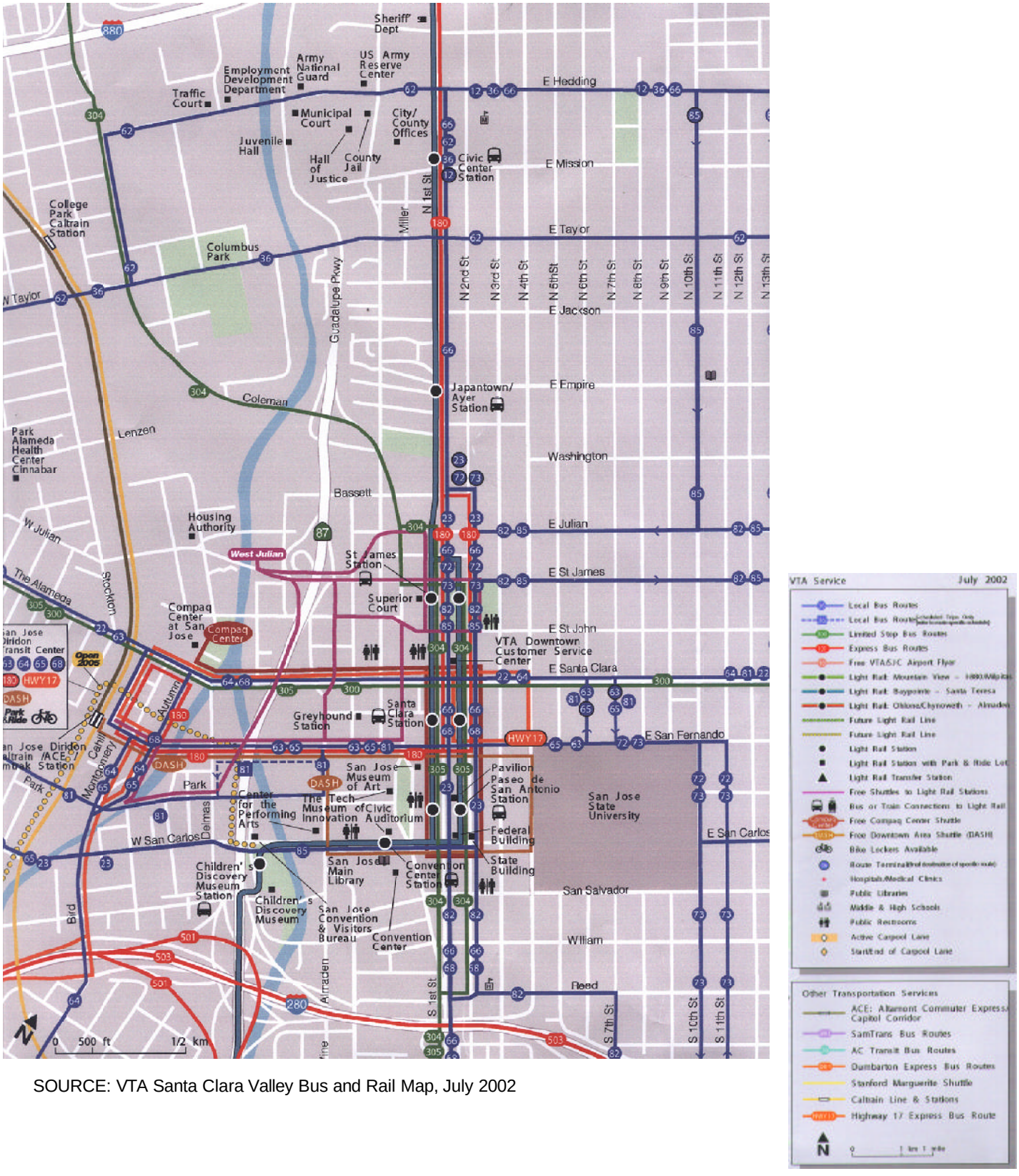
Light Rail Transit (LRT) Service

Light Rail Transit service is provided in the downtown area by VTA. The Guadalupe Corridor LRT runs directly through downtown along side First and Second Streets. The Guadalupe Corridor LRT provides service between South San Jose and North San Jose on 5-10-minute headways during commute hours. There are six LRT stations within the downtown area that provide connections to virtually every bus line described above.

Caltrain

Caltrain operates a commuter rail service seven days a week between San Jose and San Francisco. During weekday commuting hours, Caltrain also serves the south county including Gilroy, San Martin and Morgan Hill. Caltrain provides shuttle service to businesses in the Silicon Valley and on the Peninsula.

There is an existing Caltrain station located at Diridon Station. The Diridon Station located near the Montgomery Street and Santa Clara Street intersection provides service to the downtown area via connections with bus lines 63, 64, 65, 68, and DASH described above. Caltrain provides service with 15- to 30-minute headways during commute hours.



SOURCE: VTA Santa Clara Valley Bus and Rail Map, July 2002

Figure 4

DOWNTOWN AREA
EXISTING TRANSIT SERVICES

Downtown San Jose

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Table 5
Existing Bus Service

Bus Lines	Route Description	Primary Dwontown Roadways	Commute Hour Headways
22	Eastridge to Palo Alto/Menlo Park Caltrain Station	Santa Clara St.	10
23	Downtown San Jose to San Antonio Shopping Center	San Carlos St./First St./Second St.	15-30
62	Los Gatos to Piedmont Hills	Taylor Street	15-30
63	San Jose State University to Almaden Valley	San Fernando St.	30
64	Almaden LRT Station to Alum Rock & Miguelito	Santa Clara St.	15
65	Almaden LRT Station to San Jose State University	San Fernando St.	30
66	Santa Teresa Hospital to Milpitas	First St./Second St.	15
68	San Jose Diridon Station to Gilroy/Gavilan College	First St./Second St.	15
72	Downtown San Jose to Santa Teresa LRT Station	San Fernando St./First St./Second St.	15-30
73	Downtown San Jose to Snell & Capitol Expwy.	San Fernando St./First St./Second St.	20
81	Vallco Fashion Park to East San Jose	Santa Clara St./Park Av.	15-30
82	Westgate to Hedding & 17th	St.James/Julian St.	30
85	Lawrence Expwy. & Moorpark to 10th & Hedding	St.James/Julian St.	30
180	San Jose Diridon Station to Fremont BART Station	San Fernando St.	15-20
300	East San Jose to Stanford University	Santa Clara St.	20-30
304	South San Jose to Mountain View Caltrain Station	Coleman Av./First St./Second St.	15-30
305	South San Jose to Mountain View Caltrain Station	The Alameda./First St./Second St.	60
HWY17	Downtown San Jose to Scott's Valley	Santa Clara St./San Fernando St.	15-60

Notes:
Source: VTA Santa Clara County Bus and Rail Map, July 2002

ACE

The Altamont Commuter Express provides commuter rail service between the Central Valley and Silicon Valley. Three trains are in operation during weekday commuting hours. ACE also provides an ACE/Amtrak bus 3910 for late commuters. Shuttle service from the stations to employment centers are provided by various public transit agencies.

Amtrak Capitol Corridor Inner-City Rail

Amtrak provides commuter rail service between Sacramento and San Jose. Four daily round trips are provided. The train shares the Caltrain Diridon Station.

Greyhound

Greyhound provides intercity bus service connecting San Jose to other major cities in California. There is a greyhound bus station located along Almaden Avenue just north of San Fernando Street. Service to and from San Francisco is provided nearly every hour throughout the day.

Existing Bicycle and Pedestrian Facilities

Pedestrian facilities in the study areas consist primarily of sidewalks, pedestrian push buttons and signal heads at intersections. With a few exceptions, sidewalks are found along virtually all previously described local roadways in the study area and along the local residential streets and collectors surrounding the Downtown area. Most of downtown has wider than normal sidewalks to accommodate pedestrians. There

are also paseos, pedestrian thoroughfares absent of vehicles that provide for walking, gathering, and shopping, located within the downtown area. A significant deficiency in the existing pedestrian system is the bridge on San Carlos Street over Los Gatos Creek at the UPRR tracks. This bridge is very steep and has narrow sidewalks and stairs. It is not ADA compliant.

There are several bicycle facilities in the Downtown area. Bicycle facilities include striped bike lanes on roadways, bike paths, which are separated from vehicle traffic and shared with pedestrians, and bicycle corridors which are identified corridors between jurisdictions where it is desirable to implement bicycle facilities. Bicycle facilities in the Downtown area are presented in Figure 5.

Within the Downtown area, a bike lane is provided on Park Avenue, between Naglee Avenue and Meridian Avenue. A bike path is located along the Guadalupe River between I-880 and Coleman Avenue and Santa Clara Street to Woz Way.

There are also two designated cross-county bicycle corridors in the Downtown Area:

SR 87/Guadalupe LRT cross-county bicycle corridor runs along the extent of SR 87.

I-880/I-680/SR 17/Vasona Rail/Los Gatos Creek cross-county bicycle corridor runs along San Carlos Street and Santa Clara Street.

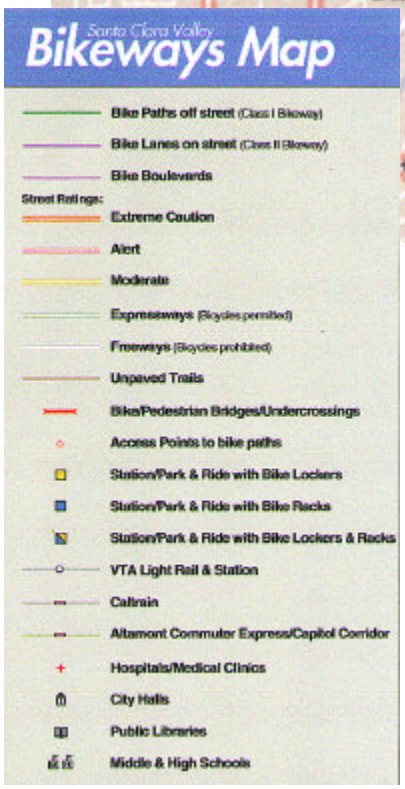
Existing Parking Facilities

Based on surveys conducted for the *Strategy 2000 Parking Management Plan* in the year 2000, there are approximately 25,000 parking spaces within various parking facilities throughout the downtown area. Facilities include both surface lots and parking structures and are shown in Figure 6. The breakdown of these spaces is provided below:

Off-Street		
City/Redevelopment Owned	8,540	spaces
Open to Public (Privately Owned)	12,069	
Privately Reserved	1,429	
	22,038	
On-Street		
Metered Spaces	1,510	
Non-Metered Spaces	1,319	
	2,829	

The cost of parking in the downtown area ranges based on the location of the parking facility. Most parking within the downtown core averages about $9-$12 daily, while facilities located outside of the downtown core are about $5-$10 daily. Evening rates are approximately $3-$4 with free parking after 6 p.m. and on weekends provided at several facilities. Shuttle service also is provided from the downtown core area (and many of the parking facilities as shown in Figure 4) to Diridon Station and the Arena.

Based on the surveys conducted, the peak parking demand for the downtown area occurs during the weekday midday and weekend evenings. The surveys showed many lots located within the historic office building area experience 90% weekday occupancy and 90% occupancy is experienced at facilities near the Arena on weekends. The surveys also showed a demand of 2.8-3.0 spaces per 1,000 s.f. of office space. This is double the parking code rate of 1.5 spaces per 1,000 s.f. With projected new development



SOURCE: VTA Santa Clara Valley Bikeways Map, July 2002

Figure 5

DOWNTOWN AREA
EXISTING BICYCLE FACILITIES

Downtown San Jose

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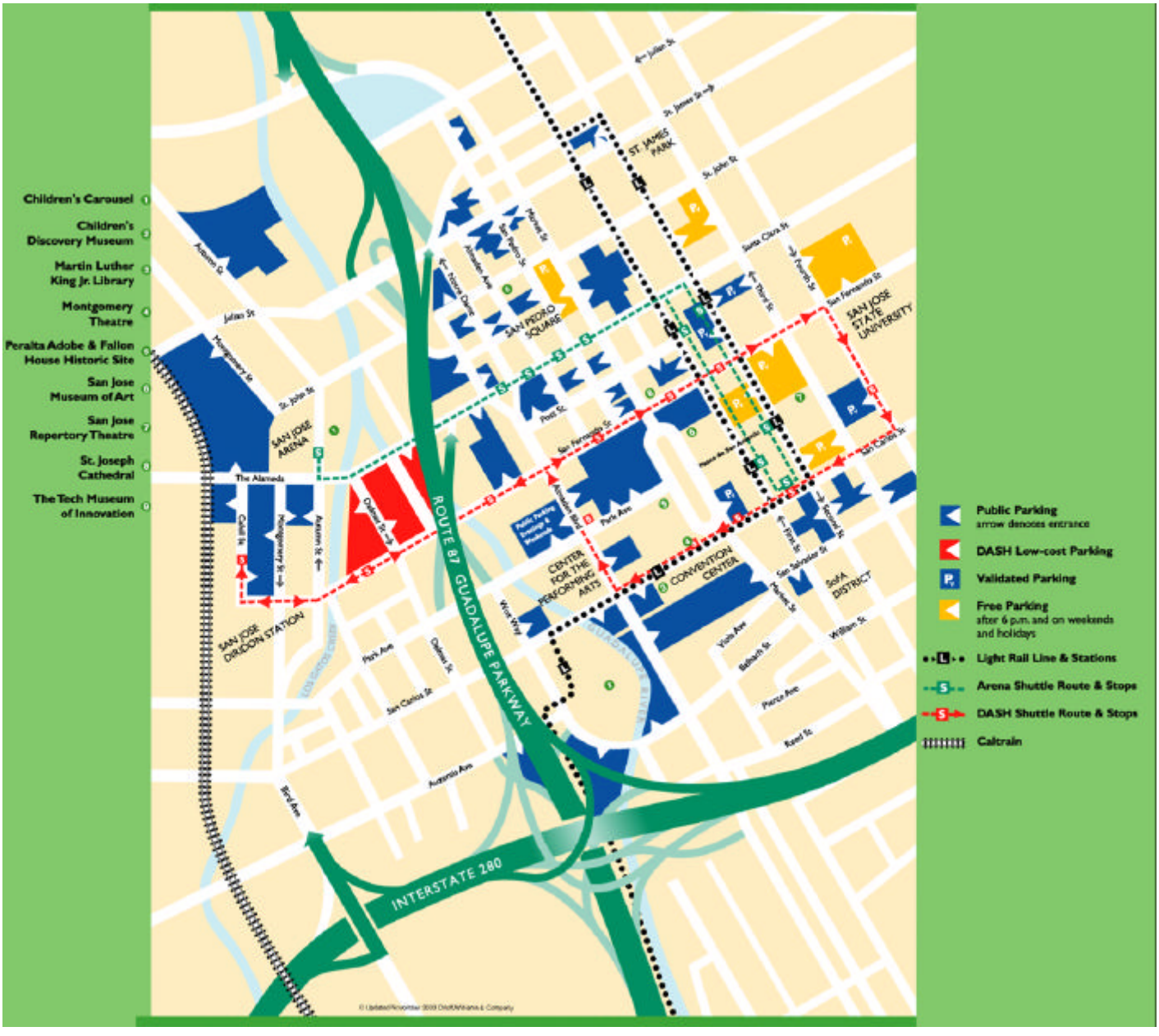

SOURCE: Downtown San Jose Association

Figure 6

EXISTING PARKING FACILITIES

Downtown San Jose

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and removal of some surface lots, it is expected that approximately 5,000 additional spaces will be needed in the downtown area by the year 2010.

3.
Project Conditions

This chapter describes traffic conditions under project conditions with the development level identified in *Strategy 2000*. Included are descriptions of project conditions land uses that include the Greater Downtown area development, along with roadway network and transit service improvements.

Project Description

This analysis consists of an evaluation of the general development plans for the Greater Downtown area identified by the Strategy Plan. The Greater Downtown area boundary extends beyond the traditional Downtown core to include areas around Diridon Station to the west, areas to the north to approximately Taylor Street, areas to the east that include San Jose State University (SJSU), and areas to the south to approximately I-280 (see Figure 1).

Proposed Development Levels

The level of development within the boundary as identified in *Strategy 2000* is what is considered the "project" for this analysis. Development projected in *Strategy 2000* for project conditions indicate that the following levels of development will occur:

11.2 msf of office space
8,500 residential dwelling units
1.4 msf of retail space
3,600 hotel guestrooms

The development projections are primarily based on sites in the Greater Downtown area with known significant development potential. Though the sites, as listed in Table 6, do not make-up the entire developable area downtown, they are the most significant locations of the Strategy Plan. Figure 7 shows the location of each of the potential development sites.

Table 6

Potential Greater Downtown Development

Area or Plan Development	General Location	Description/Characteristics
A-3 Complete Tech Museum expansion	South of Park Street	Expansion of museum including public parking (#9 in PMP)
A-4 San Antonio Block 8- NW Corner of San Carlos and 1st Street	NW corner of San Carlos and South 1st Streets	Mixed used development with options for retail, office, housing and parking
A-5 San Antonio Block 8- SE Quadrant of Market Street and San Antonio	SE Quadrant of Market Street and Paseo de San Antonio	Replace existing retail clerks high rise housing with a new housing project
A-6 Park Center Plaza	NW corner of Market Street and Park Avenue	High-rise office development
B-3 North St. James Park Site	NW corner of North Second and St James Streets	High-density housing, office and ground floor retail, could include moving and reuse of First Church of Christ Scientists within the block
B-4 Mixed Use project	SE quadrant of North 2nd and St John Streets	Demolish existing buildings and develop housing, retail and or office in a mixed use project
C-1 San Antonio Block 2	SW Corner of San Fernando and South 2nd Streets	Office tower with ground floor retail
C-2 Fountain Alley	West side of South 2nd Street approximately 200 feet south of Santa Clara Streets	Mixed used development with retail, office, housing and parking
C-3 2nd and Santa Clara lot	West Side of south 2nd Street, 200 feet south of Santa Clara Street	Mixed Use Development
C-4 Woolworth Building	27 South First Street	Demolition of existing structure and rebuild with ground floor retail/entertainment and potential mixed uses and housing above
D-2 160 W. Santa Clara	SW corner of Santa Clara and San Pedro Streets	Office tower with ground floor retail
D-3 180 W. Santa Clara	SE corner of Santa Clara and Notre Dame Streets	Office tower with ground floor retail

Table 6

Potential Greater Downtown Development

Area or Plan Development	General Location	Description/Characteristics
D-4 Mitchell Block	Block bounded by Santa Clara, Market, St. John and North 1st Streets	Mixed used development with retail, office, housing and parking (site #3 in PMP)
D-5 Hotel	SE quadrant of Santa Clara Street and SR 87	Hotel development
D-6 1 South Market	SW corner of Market and Santa Clara Streets	Office tower with ground floor retail (300,000 square feet)
D-7 Second and Santa Clara	West side of south 2nd between Santa Clara and San Fernando	Mixed used development with retail, housing and parking
E-1 Redevelopment of parking lot with Housing over Retail	San Pedro Street between Santa Clara and St John streets	Facilitate development of housing over complementary retail on surface parking lot west of San Pedro Square.
F-1 San Antonio Block 3	SW corner of San Fernando and South 3rd Streets	Mixed use development with retail, office, housing and parking (site 3 in PMP)
F-2 Mixed-use Project	North of San Fernando and west of San Pedro	Mixed use including parking and residential (site H in PMP)
G-2 Completion of the Convention Center Expansion	South of the existing Convention Center	Expansion all the way to Balbach Street
G-3 Dimensions Site	West side of Market St. north of San Salvador	Develop with various options including hotel, theater, parking, residential and retail development or a combination of these uses
G-5 San Carlos Street	between South 2nd and South 3rd Street	Develop with various options including retail, parking and residential uses or a combination of these uses
G-6 Reed and Market Block	at the NW corner of Market and Reed Streets	Develop with various options including retail, residential, parking, office or a combination of these uses
G-7 Balbach and Market Streets	NW corner	Development of a hotel to complement and support the Convention Center

Table 6

Potential Greater Downtown Development

Area or Plan Development	General Location	Description/Characteristics
H-2 Albertsons site	South side of Santa Clara St. between 6th and 7th streets	Mixed-use retail and housing
H-3 High rise site	NW corner of Santa Clara and 4th Street	Office and Mixed use
I-1 Demolish old Library	Southside of San Carlos St. between Market St. and Almaden Blvd.	Redevelop with civic uses
I-2 Move Federal Building	Northside of San Carlos St. between First and Second Streets	Move Federal Building to Post and Almaden, redevelop current site with active uses
J-1 Sobrato Residential Development	SE Corner of Almaden and Balbach	Housing Development with Retail and parking
J-2 Housing on Balbach Street	South side of Balbach between Market Street and Almaden Blvd	Mid-density housing with parking
J-3 Mixed Use on South Market	South Market between Balbach and I-280	Higher densities and heights directly along Market street with reductions in height as the development moves west into the established neighborhood
J-4 200 Park Ave	SW corner of Almaden and Park Ave	High Rise Housing, Retail, and Parking
J-5 Adobe Phase IV	SW corner of San Fernando Street and Almaden Blvd.	Office tower with ground floor retail
L-1 Taylor and Coleman site	Corner of Taylor and Coleman	Retail development with parking
L-4 Brandenburg site	NE Corner of Julian and Hwy 87	Mixed used development with retail, housing and parking

Source: Redevelopment Agency of the City of San Jose

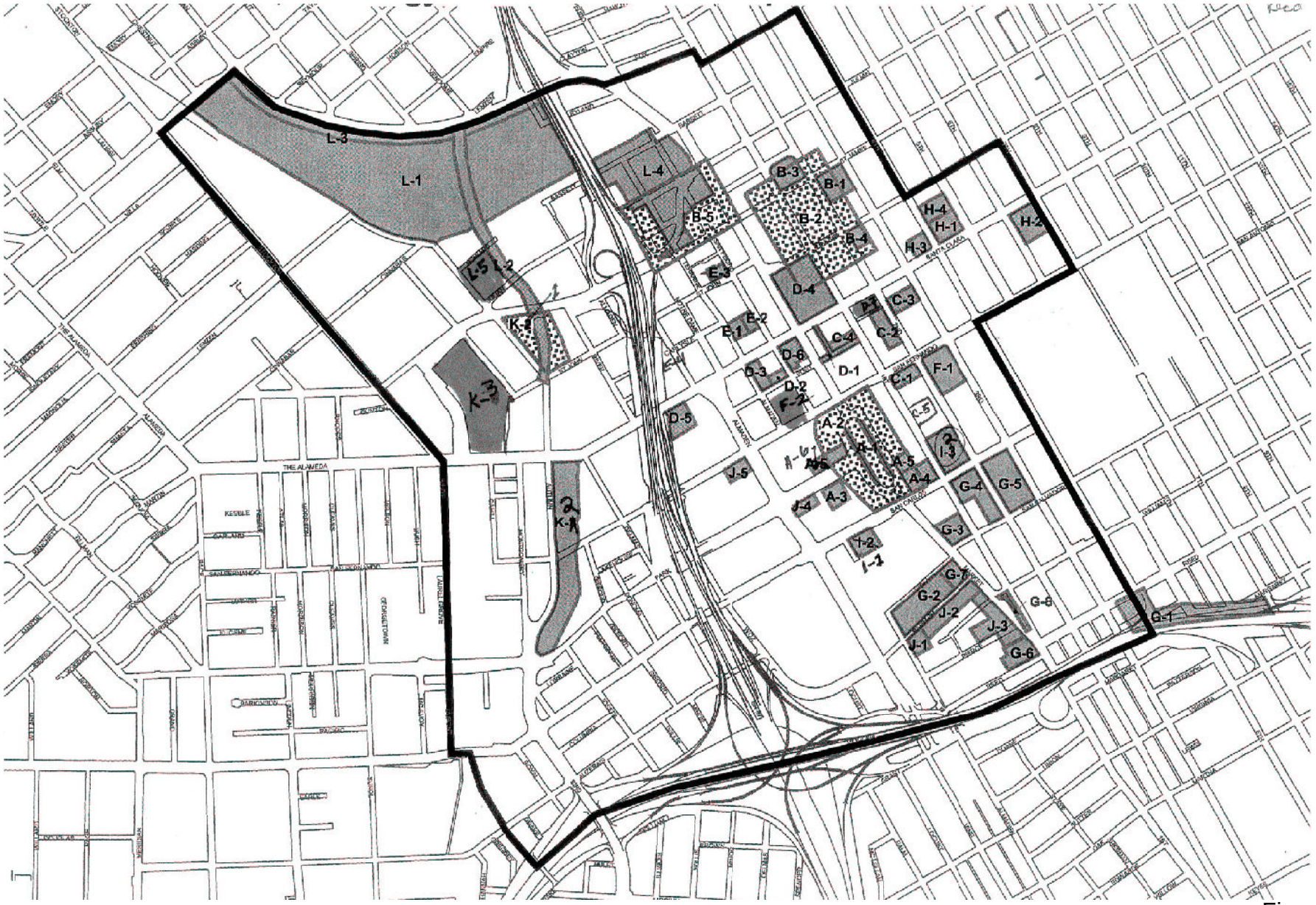

Figure 7

STRATEGY 2000 POTENTIAL DEVELOPMENT LOCATIONS

Downtown San Jose

Hexagon
Transportation Consultants, Inc.

Project Conditions Land Use and Traffic Projections

Downtown Land Use Estimates

The RDA staff provided a detailed description of projected office, retail, housing, and hotel development for each block within the designated downtown "core" area. These projections were then aggregated to traffic zones and converted to employment estimates using the City's standard General Plan employment conversion methodology.

Table 7 provides a comparison between the aggregate totals for each land use type for the year 2000, the currently adopted 2020 General Plan, and development projections for the *Strategy 2000* downtown plan. The most important comparison is the increment of growth between the year 2000 and Strategy 2000 downtown plan. Because this difference provides the basis for the traffic modeling that was used to develop the intersection growth factors used to assess the projected traffic impacts attributable to the Strategy 2000 downtown plan.

Table 7
Downtown San Jose Land Use Comparisons

				Growth		Difference
	2000	G.P. 2020	Strategy 2000 Plan	2000 to G.P. 2020	2000 to Strategy 2000	GP vs Strategy 2000
Households	6,180	15,277	14,712	9,097	8,532	-565
Employment	39,995	69,783	84,536	29,788	44,541	14,753
Hotel Rooms	1,572	3,607	5,179	2,035	3,607	1,572
Office Space	7,038,087	17,400,000	18,245,913	10,361,913	11,207,826	845,913
Retail Space	1,000,000	2,051,500	2,361,863	1,051,500	1,361,863	310,363

Household and Employment Growth

The City of San Jose's future projections of households and employment were updated based on the *Strategy 2000* project description. Table 8 provides a summary of the estimated number of households and employees that were within the area traditionally modeled by the City in the year 2000 and that are projected for project conditions. The modeled study area is roughly equivalent to the entirety of Santa Clara County, but does not include future development plans for the Evergreen, Coyote Valley, and North San Jose areas in the City of San Jose. Table 8 shows about a 17 percent growth in households and approximately a 7 percent growth in employment between 2000 and project conditions.

The projected growth equates to almost 5,000 new residential units per year, and more than 3,700 new employees per year. Projections also show that according to Strategy 2000, downtown San Jose will account for almost 9 percent of the new residential units and nearly 60 percent of the employment growth. It is significant to note that employment growth within the downtown will amount to nearly 45,000 new

Table 8
San Jose Area Land Use Projections

	Year 2000		Year 2020		2000 to 2020 Increases			
	Total	Downtown	Total	Downtown	Total	Percent	Downtown	Percent
Households	566,431	6,180	662,695	14,712	96,264	17%	8,532	9%
Employment	1,077,520	39,995	1,152,486	84,536	74,966	7%	44,541	59%

employees.

Project Conditions Roadway Network

Several transportation improvements in and surrounding the Downtown area are planned and are assumed to be operational by project conditions. The improvements consist of street and freeway widenings, interchange improvements, and street conversions. Each of the planned roadway improvements are described below and presented in Table 9. Though there are other improvements outside of the Downtown area represented in the model, they are not described in detail within this report. There are many planned changes to the roadway network, but only those changes for which funding is available or expected were assumed in the analysis.

Couplet Conversions

The most significant roadway changes within the downtown area consist of the conversion of the major Downtown one-way couplet streets to two-way streets. The couplet conversion study was approved by the City Council in 2002. The ultimate goal of the conversions is to enhance the livability of neighborhoods through which they pass. The converted two-way streets are designed to stabilize traffic volumes at current levels or less and decrease traffic speeds. Each of the couplet conversions are described below:

Third and Fourth Streets – Convert each street to provide one-lane in each direction north of Julian Street.

Julian and St. James Streets – Convert each street to provide one-lane in each direction east of Fourth Street.

Tenth and Eleventh Streets – Convert each street to provide one-lane in each direction north of Santa Clara Street.

Second Street – Convert street to provide one-lane in each direction south of San Salvador Street.

Third Street – Convert street to provide one-lane in each direction in the vicinity of I-280.

Almaden and Vine Streets – Convert each street to provide one-lane in each direction between I-280 and Alma Street.

Tenth and Eleventh Streets – Change consists of retaining the one-way operations of the streets, but eliminating one travel lane on each and adding bicycle lanes.

Table 9
Greater Downtown Area Project Conditions Transportation Network Changes

Improvement	Description
Six One-Way Street Conversions	
Third and Fourth Streets	Convert to two-way operations north of Julian Street
Julian and St. James Streets	Convert to two-way operations east of Fourth Street
Tenth and Eleventh Streets	Convert to two-way operations north of Santa Clara Street
Second Street	Convert to two-way operations south of San Salvador Street
Third Street	Convert to two-way operations in the vicinity of I-280
Almaden and Vine Streets	Convert to two-way operations between I-280 and Alma Street
Tenth and Eleventh Streets	Eliminate one lane and add bicycle lane
SR 87/Guadalupe Parkway Upgrade	Upgrade of arterial section to a freeway
I-880 Widening	Widening of I-880 from four to six mixed-flow and two-HOV lanes between US 101 to Montague Expressway
I-280 to SR 87 Auxiliary Lane	Extension of the auxiliary lane on southbound SR 87 from I-280 to Almaden Expressway
SR 87 HOV Lanes	Addition of HOV lane in each direction of SR 87
I-880 and Coleman Avenue	Full reconstruction of the interchange

Freeway and Ramp Improvements

SR 87 HOV Lanes – HOV lanes in each direction will be added to SR 87 between Julian Street and SR 85.

I-280 to SR 87 Auxiliary Lane – The improvement consists of the extension of the auxiliary lane on southbound SR 87 from I-280 to Almaden Expressway.

SR 87 and Julian Street Interchange – Improvements include the addition of a second lane on the westbound Julian Street to southbound SR 87 ramp.

I-880 and Coleman Avenue – Improvement consists of full reconstruction of the interchange to provide new braided ramps and a widened overpass.

Planned Unfunded Roadway Improvements

Listed below are a few planned but unfunded improvements for the downtown area:

US 101 – The segments of US 101 between I-280/I-680 and Capitol Expressway/Yerba Buena Road and I-880 and Great America need improvements to alleviate the current operational problems.

Autumn Street Extension – As identified in the City's General Plan Autumn Street will be extended to Coleman Avenue. The extension will alleviate congestion on the parallel Market Street arterial.

I-280 to Third Street Ramp - The improvement will consist of the extension of the existing Seventh Street off ramp from I-280 to Third Street.

Coleman Avenue Widening – Widen Coleman Avenue from four to six-lanes between Hedding Street and the future Autumn Street connection to Coleman Avenue.

Strategy Plan Roadway Improvements

The Strategy Plan also includes many detailed and general roadway improvements/adjustments. Though the roadway improvements will serve the downtown area, some of the proposed roadway changes of the Strategy Plan may have an adverse effect on traffic conditions. The Strategy Plan identifies possible improvements. Actual roadway improvements/changes will be identified at the time of specific development. The means of funding and implementation of the improvements will also be determined with future developments.

- Enlarge Plaza de Cesar Chavez by removing a lane of traffic on either side of the plaza.
- Realign Julian Street between SR 87 and North 1st Street to extend the Downtown urban grid pattern.
- Facilitate access to the Downtown by extending the I-280 ramps at 3rd and 7th streets.
- Complete construction of Autumn Street and Railroad crossing, and River Street between Santa Clara Street and St. John Street.
- Complete the Autumn Street realignment and extension between St. John Street and Coleman Avenue.
- Complete the Coleman Road widening from Hedding Street to the future Autumn Street connection.
- Improve streets in the Downtown area to accommodate future development.
- Continue development of a transit and transportation corridor on Santa Clara Street.
- Explore the design of a median in Market Street with generous planting, street trees, and carefully considered left-turn lanes in the median.
- Explore the design of the Park continuing to the north across William Street and to the east with a narrowing of 1st Street.
- Consider certain streets to have more traffic to carry and other streets to be more pedestrian-oriented within SoFA. Designate streets for the character of their traffic and pedestrian uses.
- Make Market Street a less heavily traveled, more landscaped boulevard.
- Establish 2nd Street as two-way from San Carlos south. Design 2nd Street, a local- serving street, to have bicycle lane(s)and angled parking on the west side.
- Explore the design of San Carlos to better accommodate vehicular traffic, the light rail trains (LRT) and wider sidewalks, especially along the southern side of the street.
- Consider traffic calming measures for the streets in the adjacent neighborhoods, such as Reed Street in the Market Almaden Neighborhood to the west of SoFA.
- Realign Reed Street and redesign the intersection of Market and Reed Streets for better traffic and pedestrian movements and improved streetscape design.
- Explore the designs of the intersections of San Carlos at Market, First, and Second Streets in order to make the pedestrian crossings easier and the light rail more integrated with the streetscape.

Project Conditions Transit Service

There are several major transit improvements planned and expected to be completed under project conditions. Major improvements that will serve the Downtown area include the addition of two new LRT lines, as well as enhancement to regional bus and commuter train services. Major improvements are

described below with a complete list of new transit services and capital projects presented in Table 10.

Table 10
Project Conditions Transit Improvements

Transit Projects	Description
Vasona Light Rail Transit (LRT), Vasona Junction to downtown San Jose	New LRT Line, 10-minute headways
Tasman East/Capitol Expressway LRT	New LRT Line, 10-minute headways
Expansion of VTA bus fleet to 650 vehicles	650-bus plan from Valley Transportation Plan 2020, does not include rail shuttles
Caltrain commuter rail	Increase service to 100 trains/day San Jose to San Francisco, add express trains (SJ,MV,PA,Hillsdale, Millbrae and SF stops, 60-minute travel time, 60-minute headways all day), new Coyote Valley station, 20 trains/day serving Gilroy (6 round trips in peak direction, 2-4 round trips in reverse peak direction
ACE commuter rail service upgrade	16 peak direction trains weekday (8 in a.m., 8 in p.m.) service, new Auto Mall Parkway station
Amtrak Capitols commuter and intercity rail	11 round trips/day, Sacramento to San Jose trains, new Coliseum and Union City intermodal stations

Light Rail Improvements

Vasona Light Rail Extension - The 6.8 mile Vasona Light Rail Extension will provide service between Downtown San Jose and Downtown Campbell, and add 11 new stations between Woz Way in Downtown San Jose and Los Gatos. The extension is under construction and is expected to be completed in late 2006.

Caltrain Improvements

Caltrain Improvements from San Jose North - The Caltrain rail service will add trains and improve facilities from San Jose to Palo Alto.
Caltrain Improvements between Gilroy and San Jose - The Caltrain rail service will add trains and improve facilities between Gilroy and San Jose.

Planned Unfunded Transit Improvements

There also is several improvements planned, but not as yet funded, for the transit system serving the downtown area. The following improvements are planned:

Capitol Light Rail Extension - LRT along the entire length of Capitol Expressway from the Alum Rock Station on the Capitol LRT Line to Eastridge Mall and continuing to the Santa Teresa to Baypointe LRT Line.

Downtown/East Valley Light Rail Extension - LRT along the Santa Clara Street/Alum Rock Avenue corridor from the Diridon Station in Downtown San Jose to the Alum Rock Station on the future Capitol LRT Line.

BART Extension to Downtown – BART facilities are planned to serve the downtown area as part of a

potential extension of BART to the Southbay. The BART line would run under Santa Clara Street with three stations planned within the downtown area.

Bus Rapid Transit Corridors - Several corridors throughout the city are planned. The corridors will enhance highly used bus lines by providing more efficient service.

Strategy Plan Transit Improvements

In addition to the major changes to transit service, the Strategy 2000 plan includes transit enhancements within the downtown area.

- Encourage bus ridership through the use of efficient, quiet, low-emission vehicles, improved bus shelters, and other rider amenities.

Pedestrian and Bicycle Enhancements

The Strategy Plan also calls for several enhancements within the downtown area to bicycle and pedestrian facilities.

Pedestrian Enhancements

- Develop a new paseo through the Mitchell block development.
- Provide a new paseo-"Paseo San Pedro"- that links 1st Street, Mitchell Block, and San Pedro Square.
- Develop a new paseo through the improvement of Post Street and Lightstone Alley.
- Build a sidewalk along St. John Street, north of garage.
- Incorporate east-west paseos, passages, arcades or other pedestrian ways at or near the mid-blocks of the rather long north-south blocks, particularly between 1st and Market and 1st and 2nd Streets.
- Improve pedestrian connections from the river parkway to the traditional Downtown center.
- Make SoFA a walkable area by providing generous sidewalks, better intersections, crosswalks at all feasible intersections, and by carefully defining areas for vehicular traffic.

Bicycle Facilities

- Continue the development of citywide bicycle and pedestrian trail networks, along the Guadalupe River between I-280 and Coleman Avenue, and Los Gatos Creek between I-280 and Santa Clara Street.
- Implement the San Fernando Street Bike Lane plan. The plan calls for bike lanes to be provided along both sides of San Fernando Street between 11th Street and Diridon Station.

Plazas and Parks

- Develop a new plaza on the surface parking lots on the west side of San Pedro Street between Santa Clara and St. John streets to provide a gathering place and forecourt to new housing and retail development. Emphasize the plaza by using building setbacks, landscape elements, lighting fixtures, paving patterns, public seating and active uses around it.

Parking Management Plan

As part of *Strategy 2000*, a parking management plan has been prepared. The plan would control the parking supply in the Greater Downtown area by implementing programs that control the amount of parking spaces provided by new development. It is projected that approximately 2,000 new parking spaces and the replacement of 3,000 lost surface lot spaces will be needed to support future development in the downtown area.

The downtown transportation system and parking supply go hand in hand. With an abundant supply of on-site parking for development in the downtown area, employees would be discouraged from using transit and carpooling thus leading to increased traffic congestion in the downtown area. The programs of the parking plan are designed to balance the amount of parking supply and demand while encouraging the use of alternative modes of transportation. Described below are the programs by which the plan proposes to allow full development of the downtown area while not overburdening the transportation system with an oversupply of parking.

Parking Code Adjustment

Though it is important to not provide an oversupply of parking, it is also critical that enough parking is provided so as not to inhibit downtown development. In the past, the parking demand in the downtown area has far exceeded the parking supply. This was partly due to the previous downtown parking code that did not necessarily reflect parking demands. The code called for 1.5 spaces per 1,000 s.f. of development. Surveys showed a demand of approximately 2.8-3.0 spaces/1,000 s.f. In March of 2004 an adjustment to the parking code for the downtown area was adopted. The adjusted parking code reflects the demand by requiring 3.0 spaces/1,000 s.f. With the enhancement of the downtown transit system, it is expected that the demand for on-site parking will be reduced. Therefore, it is also proposed that a portion of the required parking be provided off-site. Of the required 3.0 spaces, 0.45 spaces should be provided off-site.

TDM Programs

The plan also calls for the reduction of required parking for new development with the implementation of Transportation Demand Management (TDM). The developments could have their required parking reduced by as much as 15% with the implementation of certain TDMs. The amount of the reduction will depend on the number of measures implemented. Outlined below are a few possible TDM measures:

- Alternative Work Schedules
- Rideshare Promotions
- Mixed-Use Development
- Land Use Densification
- Telecommuting Programs
- Education and Info. on Transit Alternatives
- Parking Supply Management
- Parking Pricing
- Bicycle and Pedestrian Improvements
- Rideshare Support Facilities
- Transit Support (Eco-pass)
- Parking Fee Cash Outs
- Carpool/Vanpool
- Bicycle Support

Parking Structures

As part of the plan, the potential of several sites to provide parking facilities will be investigated. The parking facilities will most likely consist of parking structures, but surface lots also may be possible. Three sites have been selected as being the most desirable locations to locate future parking facilities. The

sites include the Greyhound Bus Station block, the block North of the DeAnza Hotel, and the Parkside Hall block. The number of potential spaces at each of the sites is presented below:

North of DeAnza Hotel	965	spaces
Greyhound Block	1,065	spaces
Parkside Hall	800	spaces

In addition to the three sites identified above, several other sites as outlined below have also been identified as locations for potential parking facilities:

- Site 5 – W. of Almaden Blvd. and N. of Santa Clara St.
- Site N – S. of San Carlos St. between First and Second Streets
- Site C – W. of the Arena
- Site B – E. of Autumn St. and N. of Julian St.

Trip Generation Estimates

The City of San Jose's TRANPLAN-based traffic forecasting procedures produce projections of AM and PM peak hour traffic flows on area roadways. Table 11 provides a summary of the year 2000 and project conditions trip estimates from the City model. The estimates are stratified to show the proportion of trips associated with the downtown area. The table shows that based on the amount of projected growth in household and employment, trips within the modeled study area will increase by about 9 percent and 11 percent during the AM and PM peak hours respectively.

Table 11
Trip Generation Summaries

	Peak Hour	
	AM	PM
Year 2000		
Total Trips	504,556	587,831
Downtown Related Trips	33,403	32,383
Downtown Proportion of Trips	6.60%	5.50%
Year 2020		
Total Trips	547,473	654,465
Downtown Related Trips	52,320	57,975
Downtown Proportion of Trips	9.60%	8.90%
Year 2000 to 2020 Increases		
Total Trips (Percent Growth)	42,917 (9%)	66,634 (11%)
Downtown Related Trips (Percent Growth)	18,917 (57%)	25,592 (79%)
Downtown Proportion of Trip Growth	44.10%	38.40%

Table 11 also shows that trips associated with the downtown area will increase by 57 percent during the AM peak hour and nearly 80 percent during the PM peak hour. These very significant increases are primarily attributable to the very large increase in projected downtown employment. Overall, downtown is expected to account for about 44 percent of the total increase in AM peak hour trips and about 38 percent of the increase in PM peak hour trips.

Downtown Related Transit Mode Share

The City of San Jose's TRANPLAN-based traffic modeling procedures do account for transit usage before vehicle trips are assigned to the area roadways. The Strategy 2000 downtown development scenario was used in conjunction with VTA's SVRT travel demand model, and the City of San Jose TRANPLAN Model to develop the information presented in Table 12.

Table 12
Downtown related Transit Mode Share Summary

	Peak Hour	
	AM	PM
Year 2000		
Downtown Related Trips	33,403	32,383
Downtown Related Transit Trips	6,617	6,770
Downtown Transit Mode Share Percentage	19.80%	20.90%
Year 2020		
Downtown Related Trips	52,320	57,975
Downtown Related Transit Trips	10,021	9,871
Downtown Transit Mode Share Percentage	19.20%	17%
Year 2000 to 2020 Increases		
Downtown Related Transit Trips	3,404	3,101
Percent Increase in Downtown Related Transit Trips	51.60%	45.20%

Table 12 shows that downtown related transit trips are projected to increase by over 50 percent during the AM peak hour and by more than 45 percent during the PM peak hour. Under project conditions, approximately 10,000 downtown related transit trips will be made during each of the AM and PM peak hours. This compares to about 6,600 to 6,700 in the year 2000. Table 9 also shows a very small decline in the downtown-related mode share under project conditions. This projected decline is attributable to increases in downtown-related trips from areas that are not as well served by transit.

Project Impacts and Mitigation Measures

This section discusses the project conditions analysis and any impacts associated with the proposed development levels for the greater downtown area. Included are descriptions of project impacts to intersections, freeway ramps, freeway segments, parking, transit, and bicycle and pedestrian transportation.

Intersection Impacts and Mitigation Measures

Intersection level of service analysis was used to evaluate traffic operations at the study intersections under project conditions. The results show that 40 of the study intersections are projected to operate at LOS E or F under project conditions during at least one peak hour (see Figure 8). The project would impact 31 of the 40 intersections during at least one peak hour as shown in Table 13. A table summarizing the intersection level of service results for all study intersections and calculation sheets are included in Appendix B.

Mitigation measures were investigated for all intersection impacts. Some locations were found to have no feasible improvements. The following is a description of the feasible mitigation measures and the intersections that would remain deficient (see Table 14 and Figure 9). The mitigation measures are presented and described below, but the project is not proposing to fund or implement a funding plan for the recommended measures. The development of funding mechanisms, whether collected from specific developments or a traffic impact fee program, for the improvements will need to be developed as future development proceeds.

Downtown Core Intersections

The following downtown core intersections are projected to operate at LOS E or F under project conditions. They are not impacted by the project since intersections located in the downtown core are exempt from the city's level of service policy. Nonetheless, potential improvements at each of the intersections were investigated to determine whether any improvements were feasible. Since the intersections are not impacted by the project, the identified improvements are not required. The improvements are provided as recommendations for consideration.

(31) Market Street and Julian Street - This intersection could be improved by providing the Autumn Street connection to Coleman Avenue as identified in the City's General Plan. The extension of Autumn Street would provide an alternative north/south route in the downtown area and alleviate congestion along Market Street. The implementation of these improvements would improve intersection level of service to LOS C during the AM peak hour and improve the intersection's average delay during the PM peak hour. However, the intersection would continue to operate at LOS F during the PM peak hour.

(36) Market Street and San Carlos Street* - This intersection could be improved by restricting left-turns on Market Street. The left-turn restrictions would allow for additional green time for other critical movements at the intersection, thus improving operating levels. The implementation of the left-turn restrictions would improve intersection level of service to LOS D.

(37) SR 87 and Julian Street (E)* - This is a CMP intersection. Therefore, while it is exempt from the City's LOS Policy, it is subject to the CMP standards and policies. The intersection would operate at LOS F, which is worse than the CMP standard of LOS E, during both peak hours with the project. This intersection could be improved by implementing several improvements. The improvements include the Autumn Street extension from Julian Street to Coleman Avenue as identified in the City's General Plan, addition of second exclusive through and left-turn lanes on the SR 87 northbound off-ramp, addition of exclusive through and right-turn lanes from Notre Dame Street, addition of an exclusive westbound right-turn lane from Julian Street, and changes to the signal phasing. The implementation of these improvements would improve intersection level of service to LOS D and E under the AM and PM peak hours, respectively. In accordance to CMP standards, this is an acceptable level of service.

Not to Scale

880 87 280 101

Old Bayshore, N. 1st St, N. 4th St, Guadalupe Pkwy, Hwy, Oakland Rd, Commercial St, Berryessa, Mabury, Mabury Rd, N. 5th St, N. 2nd St, N. 3rd St, N. 5th St, N. 6th St, N. 7th St, N. 8th St, N. 10th St, N. 11th St, N. 13th St, N. 17th St, N. 19th St, N. King Rd, McKee Rd, E. Taylor St, Jackson St, Empire St, W. Hedding St, Alum Rock, San Pedro St, Coleman Av, E. Julian St, St. James St, St. John St, E. Santa Clara St, N. 24th St, E. San Antonio St, San Fernando St, San Antonio St, San Carlos St, San Salvador St, E. William St, E. Reed St, Margaret St, E. Virginia St, Story Rd, McLaughlin Av, Stockton Av, N. Market St, San Pedro St, San Jose State University, N. 1st St, Almaden Bl, The Alameda, Delmas, Cahill St, Montgomery St, Autumn St, Park Av, Race St, Sunol St, Woz, San Carlos St, Lincoln Av, Meridian Av, Auzerais Av, Locust St, E. Virginia St, Martha St, Keyes St, S. 6th St, S. 7th St, S. 10th St, S. 11th St, Senter Rd, Goodyear, Vine St, Almaden Av, W. Alma Av, Bird Av, Willow St, Fruitdale Av, Lincoln Av, Minnesota Av, Monterey Hwy, Tully Rd, Curtner Av

LEGEND

- = Downtown Core Boundary
- = Downtown Core Study Intersection
- = Expanded Core Boundary
- = Expanded Core Study Intersection
- = Study Intersection Outside Core/Expanded Core
- = LOS E
- = LOS F
- = Gateway Corridor

NOTE:
Identified intersections operate at LOS E or F during at least one peak hour.

Figure 8

PROJECT CONDITIONS INTERSECTION LEVEL OF SERVICE CONDITIONS

Downtown San Jose

Hexagon
Transportation Consultants, Inc.

Table 13
Project Conditions Intersections Levels of Service (LOS E and F Intersections)

	Intersection	Peak Hour	Count Date	Existing Ave. Delay	Existing LOS	Growth Factor	2020 Project Conditions Ave. Delay	2020 Project Conditions LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
Downtown Core Intersections										
10	Third Street and Julian Street	AM	2/20/2001	10	B	1.249	110	F	123	0.64
		PM	2/20/2001	9	B	1.814	78	F	83	0.88
23	Second Street and San Salvador St	AM	2/21/2002	8	B	0.616	8	B	-2	-0.03
		PM	2/21/2002	9	B	1.691	48	E	51	0.76
25	Second Street and Reed Street	AM	11/27/2001	8	B	1.072	20	C	15	0.64
		PM	11/27/2001	9	B	1.227	47	E	54	0.61
31	Market Street and Julian Street	AM	11/5/2002	15	C	2.039	50	E	53	0.64
		PM	10/31/2002	17	C	1.687	103	F	118	0.54
36	Market Street and San Carlos Street*	AM	5/2/2000	29	D	1.264	28	D	-2	0.09
		PM	5/2/2000	33	D	1.180	42	E	20	0.40
37	SR 87 and Julian Street (E)*	AM	3/22/2000	35	D	1.285	82	F	53	0.38
		PM	3/22/2000	29	D	1.831	83	F	61	0.49
38	Almaden Bvld. and Santa Clara Street (	AM	11/16/2000	19	C	1.304	25	C	8	0.22
		PM	11/16/2000	17	C	1.580	40	E	35	0.45
40	Almaden Boulevard and San Carlos Str	AM	2/16/2000	25	D	1.235	25	C	-1	0.04
		PM	2/15/2000	29	D	1.494	42	E	25	0.35
42	Almaden Boulevard and Woz Way	AM	11/16/2000	8	B	1.601	11	B	3	0.27
		PM	11/16/2000	11	B	2.193	51	E	56	0.69
Expanded Downtown Core Intersections										
52	Coleman Avenue and Taylor Street	AM	1/29/1997	47	E	1.106	121	F	147	0.32
		PM	1/29/1997	34	D	1.369	59	E	43	0.38
53	Stockton Avenue and The Alameda	AM	11/1/2000	17	C	1.298	137	F	144	0.54
		PM	11/1/2000	18	C	1.500	134	F	159	0.65
55	Montgomery Street and Santa Clara St	AM	5/2/2000	14	B	1.214	14	B	-1	-0.11
		PM	5/2/2000	16	C	1.268	120	F	216	0.70
56	Autumn Street and Santa Clara Street*	AM	2/16/2000	31	D	1.203	51	E	33	0.23
		PM	2/22/2000	14	B	1.369	51	E	56	0.76
58	Bird Avenue and San Carlos Street*	AM	10/31/2001	24	C	1.143	27	D	-5	0.10
		PM	11/8/2001	34	D	1.230	64	F	49	0.23
59	Bird Avenue and Auzerais Avenue	AM	9/5/2000	19	C	1.233	15	C	1	0.10
		PM	7/16/1998	23	C	1.360	53	E	4	0.20
60	I-280 and Bird Avenue (N)*	AM	3/14/2000	21	C	1.153	23	C	0	0.06
		PM	3/14/2000	19	C	1.280	50	E	34	0.33
63	Delmas Avenue and Park Avenue	AM	3/10/1999	18	C	1.620	20	C	4	0.25
		PM	3/10/1999	20	C	1.567	199	F	255	0.75
Intersections Outside Core/Expanded Core										
74	Senter Road and Keyes Street	AM	4/4/2001	19	C	1.048	20	C	1	0.04
		PM	4/4/2001	27	D	1.221	48	E	37	0.21
75	Oakland Road and Commercial Street	AM	11/27/2001	31	D	1.667	252	F	396	0.58
		PM	11/27/2001	36	D	1.285	93	F	94	0.27
76	US 101 and Oakland Road (N)*	AM	3/23/2000	37	D	1.667	255	F	435	0.53
		PM	3/23/2000	17	C	1.285	21	C	5	0.09
77	US 101 and Oakland Road (S)*	AM	3/23/2000	19	C	1.136	16	C	-4	0.11
		PM	3/23/2000	26	D	1.448	157	F	270	0.43
78	Oakland Road and Hedding Street	AM	2/8/2000	39	D	1.054	43	E	5	0.05
		PM	2/8/2000	30	D	1.162	33	D	3	0.11
Gateway Intersections										
82	Eleventh Street and Taylor Street	AM	3/21/2001	44	E	1.026	55	E	44	-0.02
		PM	3/21/2001	7	B	1.318	121	F	172	0.80
85	Eleventh Street and Julian Street	AM	3/21/2001	12	B	1.326	88	F	106	0.47
		PM	3/21/2001	8	B	2.132	202	F	301	1.15

Table 13
Project Conditions Intersections Levels of Service (LOS E and F Intersections)

	Intersection	Peak Hour	Count Date	Existing Ave. Delay	Existing LOS	Growth Factor	2020 Project Conditions Ave. Delay	2020 Project Conditions LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
86	Eleventh Street and St. James Street	AM	3/21/2001	5	A	1.233	54	E	65	0.67
		PM	3/21/2001	9	B	2.433	#####	F	663252	1.35
87	Eleventh Street and St. John Street	AM	3/4/1999	4	A	1.167	16	C	15	0.37
		PM	3/4/1999	7	B	1.830	56	E	73	0.89
88	Eleventh Street and Santa Clara Street	AM	2/22/2001	16	C	1.101	57	E	62	0.34
		PM	2/22/2001	12	B	1.227	28	D	17	0.42
90	Eleventh Street and San Antonio Street	AM	1/24/2001	5	A	1.093	148	F	145	0.41
		PM	1/24/2001	4	A	1.029	5	A	1	0.18
98	Tenth Street and Hedding Street	AM	4/5/2001	10	B	1.109	68	F	69	0.42
		PM	5/9/2001	22	C	1.251	47	E	48	0.22
99	Tenth Street and Taylor Street	AM	3/20/2001	6	B	1.098	31	D	24	0.36
		PM	3/20/2001	11	B	1.223	45	E	48	0.32
102	Tenth Street and Julian Street	AM	3/22/2001	8	B	1.544	181	F	238	0.94
		PM	3/22/2001	8	B	1.397	20	C	18	0.53
103	Tenth Street and St. James Street	AM	3/20/2001	8	B	1.421	108	F	141	1.03
		PM	3/20/2001	9	B	1.638	71	F	96	0.67
111	Tenth Street and Reed Street	AM	2/21/2002	5	B	1.045	5	B	0	0.12
		PM	2/21/2002	5	A	1.213	70	F	71	0.50
117	Seventh Street and Virginia Street	AM	10/17/2000	13	B	1.538	17	C	5	0.28
		PM	10/17/2000	16	C	1.818	72	F	80	0.53
122	Fourth Street and Jackson Street	AM	7/10/2000	21	C	1.146	52	E	44	0.37
		PM	7/10/2000	13	B	1.377	48	E	48	0.45
132	First Street and Taylor Street	AM	5/20/1997	34	D	1.154	36	D	3	0.10
		PM	2/13/1997	49	E	1.249	107	F	72	0.24
141	Almaden Avenue and Virginia Street	AM	9/12/2000	5	B	0.965	6	B	1	0.05
		PM	9/12/2000	11	B	1.401	81	F	88	0.89
145	Vine Street and Grant Street	AM	10/12/2000	6	B	1.246	48	E	44	0.48
		PM	10/12/2000	16	C	1.145	19	C	8	0.07
153	Coleman Avenue and Hedding Street	AM	3/19/1997	44	E	1.017	46	E	3	0.02
		PM	10/29/1996	36	D	1.192	67	F	53	0.18
162	Meridian Avenue and San Carlos Stree	AM	2/27/2001	28	D	1.182	31	D	5	0.13
		PM	2/27/2001	31	D	1.322	48	E	24	0.25

Notes:
Intersections located within downtown core are exempt from the city's LOS Policy and are allowed to operate at unacceptable levels. Levels of service provided for informational purposes only.
Box indicates significant impact
* Denotes CMP intersection.

Table 14
Project Conditions Intersections Levels of Service (With Mitigation)

	Intersection	Peak Hour	2020 Project Ave. Delay	2020 Project LOS	Mitigated Ave. Delay	Mitigated LOS
Expanded Downtown Core Intersections						
52	Coleman Avenue and Taylor Street	AM	121	F	37	D
		PM	59	E	34	D
53	Stockton Avenue and The Alameda	AM	137	F	34	D
		PM	134	F	18	C
55	Montgomery Street and Santa Clara Street*	AM	14	B	9	B
		PM	120	F	11	B
56	Autumn Street and Santa Clara Street*	AM	51	E	34	D
		PM	51	E	41	E
58	Bird Avenue and San Carlos Street*	AM	27	D	26	D
		PM	64	F	48	E
59	Bird Avenue and Auzerais Avenue	AM	15	C	19	C
		PM	53	E	21	C
60	I-280 and Bird Avenue (N)*	AM	23	C	22	C
		PM	50	E	24	C
63	Delmas Avenue and Park Avenue	AM	20	C	18	C
		PM	199	F	32	D
Intersections Outside Core/Expanded Core						
74	Senter Road and Keyes Street	AM	20	C	19	C
		PM	48	E	24	C
75	Oakland Road and Commercial Street	AM	252	F	39	D
		PM	93	F	34	D
76	US 101 and Oakland Road (N)*	AM	255	F	21	C
		PM	21	C	13	B
77	US 101 and Oakland Road (S)*	AM	16	C	14	B
		PM	157	F	25	C
78	Oakland Road and Hedding Street	AM	43	E	40	D
		PM	33	D	36	D
Gateway Intersections						
82	Eleventh Street and Taylor Street	AM	55	E	55	E
		PM	121	F	121	F
85	Eleventh Street and Julian Street	AM	88	F	88	F
		PM	202	F	202	F
86	Eleventh Street and St. James Street	AM	54	E	54	E
		PM	430116	F	430116	F
87	Eleventh Street and St. John Street	AM	16	C	16	C
		PM	56	E	56	E
88	Eleventh Street and Santa Clara Street	AM	57	E	57	E
		PM	28	D	28	D
90	Eleventh Street and San Antonio Street	AM	148	F	148	F
		PM	5	A	5	A
98	Tenth Street and Hedding Street	AM	68	F	68	F
		PM	47	E	47	E
99	Tenth Street and Taylor Street	AM	31	D	31	D
		PM	45	E	45	E
102	Tenth Street and Julian Street	AM	181	F	181	F
		PM	20	C	20	C

Table 14
Project Conditions Intersections Levels of Service (With Mitigation)

	Intersection	Peak Hour	2020 Project Ave. Delay	2020 Project LOS	Mitigated Ave. Delay	Mitigated LOS
103	Tenth Street and St. James Street	AM	108	F	108	F
		PM	71	F	71	F
111	Tenth Street and Reed Street	AM	5	B	5	B
		PM	70	F	70	F
117	Seventh Street and Virginia Street	AM	17	C	17	C
		PM	72	F	72	F
122	Fourth Street and Jackson Street	AM	52	E	52	E
		PM	48	E	48	E
132	First Street and Taylor Street	AM	36	D	36	D
		PM	107	F	107	F
141	Almaden Avenue and Virginia Street	AM	6	B	6	B
		PM	81	F	81	F
145	Vine Street and Grant Street	AM	48	E	48	E
		PM	19	C	19	C
153	Coleman Avenue and Hedding Street	AM	46	E	32	D
		PM	67	F	29	D
162	Meridian Avenue and San Carlos Street	AM	31	D	31	D
		PM	48	E	48	E

Notes:
Intersections located within downtown core are exempt from the city's LOS Policy and are allowed to opera
unacceptable levels. Levels of service provided for informational purposes only.
Box indicates significant impact
* Denotes CMP intersection.

Not to Scale

880
87
101
280
Old Bayshore
N. 1st St.
N. 4th St.
Guadalupe Pkwy
Hwy
N. 5th St.
Oakland Rd
Commercial St
Berryessa
Mabury
Mabury Rd
N. King Rd
McKee Rd
Alum Rock
N. 2nd St
N. 5th St.
N. 6th St.
N. 7th St.
N. 8th St.
N. 10th St.
N. 11th St
N. 13th St.
N. 17th St.
N. 19th St.
E. Taylor St
Jackson St
Empire St
W. Hedding St.
N. 3rd St
San Pedro St
E. Julian St
St. James St
St. John St
E. Santa Clara St
N. 24th St
E. San Antonio St
San Fernando St
San Antonio St
San Carlos St
San Salvador St
E. William St
E. Reed St
Margaret St
E. Virginia St
Stockton Av
N. Market St
San Pedro St
N. 1st St
San Jose State University
Almaden Bl
Woz
The Alameda
Dalmas
Cahill St
Montgomery St
Autumn St
Park Av
Race St
Sunol St
San Carlos St
Lincoln Av
Meridian Av
Auzerais Av
Locust St
E. Virginia St
Martha St
Keyes St
S. 11th St
S. 10th St
S. 7th St
S. 6th St
Senter Rd
Story Rd
McLaughlin Av
Goodyear
Vista St
Almaden Av
W. Alma Av
Bird Av
Willow St
Fruitdale Av
Lincoln Av
Minnesota Av
Monterey Hwy
Tully Rd
Curtner Av

LEGEND

- = Downtown Core Boundary
- = Expanded Core Boundary
- = LOS E
- = LOS F
- = Mitigated Impact
- = Mitigated But Still Unacceptable LOS
- = Potentially No Feasible Mitigation
- = Gateway Corridor

NOTE:
Identified intersections operate at LOS E or F during at least one peak hour.

Figure 9

PROJECT IMPACTS AND IMPROVEMENTS

Downtown San Jose

Hexagon
Transportation Consultants, Inc.

Should it be determined that the recommended improvement will not be implemented by the project, an alternative would be the application of Senate Bill No. 1636. The bill allows for the non-conformance with Congestion Management Programs standards for infill housing, transit-oriented development, and mixed use developments. The purpose of the bill is to allow for the identified types of developments in order to reduce traffic congestion regionally and provide for more housing. The Downtown Strategy Plan includes infill housing and mixed-use development, and all downtown development is transit oriented.

(38) Almaden Boulevard and Santa Clara Street (E) - This intersection could be improved by providing the Autumn Street connection to Coleman Avenue as identified in the City's General Plan. The extension of Autumn Street would provide an alternative north/south route in the downtown area and alleviate congestion along Almaden Boulevard. The implementation of this improvement would improve intersection level of service to LOS D.

(40) Almaden Boulevard and San Carlos Street* - This intersection could be improved by the addition of a separate southbound right-turn lane. The implementation of this improvement would improve intersection level of service to LOS D.

Expanded Core Intersections

As part of the Strategy Plan, it is proposed that the traditional downtown boundary (downtown core) be extended to include areas surrounding downtown. With the extension of the boundary, intersections located in the expanded core would be exempt from city's level of service policy, as with the current downtown core intersections. The following mitigation measures for impacts at expanded core intersections are presented for informational purposes. The decision on whether to implement the improvements will be made upon the adoption of the expanded downtown boundary.

(52) Coleman Avenue and Taylor Street

Impact: The level of service would be LOS E and D during the AM and PM peak hours, respectively, under existing conditions and the intersection would degrade to LOS F and E during the AM and PM peak hours, respectively, under project conditions. This constitutes a significant impact by City of San Jose standards.

Mitigation Measure. The necessary improvement to mitigate the project impact at this intersection would consist of the widening of Coleman Avenue from a four-lane roadway to a six-lane roadway (including the associated improvements of double-left-turn lanes and separate right turn-lanes on Taylor Street) and the Autumn Street connection to Coleman Avenue as identified in the City's General Plan. The widening of Coleman Avenue has been studied by the city. The study indicated that the widening is feasible, but funding is necessary. The Coleman widening will require an amendment to the City's General Plan. The implementation of these improvements would improve intersection level of service to LOS D under both the AM and PM peak hours.

It should be noted that the proposed nearby Cousins development may be required to implement improvements to Coleman Avenue/Taylor Street as mitigation.

(53) Stockton Avenue and The Alameda

Impact: The level of service would be LOS C during both the AM and PM peak hours under existing conditions and the intersection would degrade to LOS F during both peak hours

under project conditions. This constitutes a significant impact by City of San Jose standards.

Mitigation Measure. The necessary improvement to mitigate the project impact at this intersection would consist of the Autumn Street connection to Coleman Avenue as identified in the City's General Plan, in addition to restriping the southbound approach to provide one left-turn, one shared left-through, and one right-turn lane. The extension of Autumn Street would provide an alternative north/south route in the area and alleviate congestion along both Stockton Avenue and The Alameda. The implementation of these improvements would improve intersection level of service to LOS D and C under the AM and PM peak hours, respectively.

(55) Montgomery Street and Santa Clara Street*

Impact: The level of service would be LOS C during the PM peak hour under existing conditions and the intersection would degrade to LOS F under project conditions. This constitutes a significant impact by City of San Jose and CMP standards.

Mitigation Measure. The necessary improvement to mitigate the project impact at this intersection would consist of the Autumn Street connection to Coleman Avenue as identified in the City's General Plan. The extension of Autumn Street would provide an alternative north/south route in the area and alleviate congestion along Montgomery Street. The implementation of this improvement would improve intersection level of service to LOS B.

Since this is a CMP intersection, should it be determined that the recommended improvement will not be implemented by the project, an alternative would be the application of Senate Bill No. 1636, as described above.

(56) Autumn Street and Santa Clara Street*

Impact: The level of service would be LOS D and B during the AM and PM peak hours, respectively, under existing conditions and the intersection would degrade to LOS E during both peak hours under project conditions. This constitutes a significant impact by City of San Jose standards.

Mitigation Measure. The necessary improvement to mitigate the project impact at this intersection would consist of the Autumn Street connection to Coleman Avenue as identified in the City's General Plan, in addition to providing two westbound left-turn lanes at the intersection. The implementation of these improvements would improve intersection level of service to LOS D during the AM peak hour and improve the intersection's average delay during the PM peak hour. However, the intersection would continue to operate at LOS E during the PM peak hour. This, based on City of San Jose standards, is an unacceptable level of service. There are no further feasible improvements that can be implemented to improve intersection level of service to acceptable levels, therefore the impact is significant and unavoidable.

(58) Bird Avenue and San Carlos Street*

Impact: The level of service would be LOS D during the PM peak hour under existing conditions and the intersection would degrade to LOS F under project conditions. This constitutes a significant impact by both City of San Jose and CMP standards.

Mitigation Measure. One possible improvement consists of the addition of a second northbound left-turn lane. The implementation of this improvement would improve intersection level of service to LOS E. In accordance to CMP standards, this is an acceptable level of service, however, based on City of San Jose standards this intersection would continue to operate at an unacceptable level of service during the PM peak hour. The impact at this intersection is significant and unavoidable. Operational problems such as blocked intersections and an imbalance of lane usage along Bird Avenue between San Carlos Street and I-280 are due to large volumes and the close spacing of intersections. As such, signal timing modifications along Bird Avenue between I-280 and San Carlos Street should also be implemented.

Since this is a CMP intersection, should it be determined that the recommended improvement will not be implemented by the project, an alternative would be the application of Senate Bill No. 1636, as described above.

(59) Bird Avenue and Auzerais Avenue

Impact: The level of service would be LOS C during the PM peak hour under existing conditions and the intersection would degrade to LOS E under project conditions. This constitutes a significant impact by City of San Jose standards.

Mitigation Measure. One possible improvement to mitigate the project impact at this intersection would consist of the addition of a second northbound left-turn lane. The implementation of this improvement would improve intersection level of service to LOS C. Operational problems such as blocked intersections and an imbalance of lane usage along Bird Avenue between San Carlos Street and I-280 are due to large volumes and the close spacing of intersections. As such, signal timing modifications along Bird Avenue between I-280 and San Carlos Street should also be implemented.

(60) I-280 and Bird Avenue (N)*

Impact: The level of service would be LOS C during the PM peak hour under existing conditions and the intersection would degrade to LOS E under project conditions. This constitutes a significant impact by the City of San Jose standards.

Mitigation Measure. A possible improvement to mitigate the project impact at this intersection would consist of the addition of a southbound free-right-turn lane. The addition of the right-turn lane would also require that a fourth southbound through lane be added at the upstream intersection of Bird Avenue with Auzerias Avenue. The implementation of this improvement would improve intersection level of service to LOS C. Operational problems such as blocked intersections and an imbalance of lane usage along Bird Avenue between San Carlos Street and I-280 are due to large volumes and the close spacing of intersections. As such, signal timing modifications along Bird Avenue between I-280 and San Carlos Street should also be implemented.

(63) Delmas Avenue and Park Avenue

Impact: The level of service would be LOS C during the PM peak hour under existing conditions and the intersection would degrade to LOS F under project conditions. This constitutes a significant impact by City of San Jose standards.

Mitigation Measure. The necessary improvement to mitigate the project impact at this intersection would consist of the striping of the north leg to provide a shared through-left turn lane and shared through-right-turn lane. The improvement would require that on-street parking in the area of the intersection to be

eliminated. In order to maintain the existing on-street parking along both sides of Delmas Avenue north of Park Avenue, this improvement would require widening the roadway between San Fernando Street and Park Avenue by 2 feet. Additional right of way would need to be acquired from the properties on the east side of the street in order to maintain the existing sidewalk width. There are no street trees within the public right of way along Delmas Avenue. The affected properties from which additional ROW would be acquired include privately owned parcels and a parcel owned by Santa Clara County. If additional right of way can not be acquired from the private property owners, up to 7 on-street parking spaces may need to be eliminated in order to accomplish the recommended mitigation measure. Because the intersection would function at acceptable levels with only a single southbound lane during much of the day, the parking restriction could be implemented during the PM peak hours only. Currently, the on-street parking is allowed only by permit and is used by the residents of the adjacent single family homes and the multi-family residential development on the northwest corner of Delmas Avenue and Park Avenue. The permit parking restriction is in effect 24 hours a day. The planned Vasona LRT Project will widen the segment of Delmas Avenue between Park Avenue and San Carlos Street. The planned width south of Park Avenue is adequate for two travel lanes with on-street parking on both sides. The implementation of these improvements would improve intersection level of service to LOS C.

Intersections Outside Core/Expanded Core

(74) Senter Road and Keyes Street

Impact: The level of service would be LOS D during the PM peak hour under existing conditions and the intersection would degrade to LOS E under project conditions. This constitutes a significant impact by City of San Jose standards.

Mitigation Measure. The necessary improvement to mitigate the project impact at this intersection would consist of the addition of a second westbound left-turn lane. The implementation of this improvement would improve intersection level of service to LOS C. The impact and need for improvement at this intersection would occur after 96% (10.8 msf office space, 8,160 residential units, 1.3 msf retail space, and 3,456 hotel rooms) of the proposed development is completed.

(75) Oakland Road and Commercial Street

Impact: The level of service would be LOS D during both peak hours under existing conditions and the intersection would degrade to LOS F during both peak hours under project conditions. This constitutes a significant impact by City of San Jose standards.

Mitigation Measure. The necessary improvement to mitigate the project impact at this intersection would consist of the reconstruction of the US 101/Oakland Road interchange to include six-lanes on the overpass. The Oakland Road interchange operates over capacity with many operational problems due to vehicle queues. The intersection of Commercial Street and Oakland Road serves as a primary gateway to access the interchange and does not have the capacity to meet demands. Necessary improvements at Oakland/Commercial to serve the reconstructed interchange will be determined upon design of the interchange. The reconstruction of the interchange would improve intersection level of service to LOS D during both the AM and PM peak hours at the intersection. The impact and need for improvement at this intersection would occur after 65% (7.3 msf office space, 5,525 residential units, 910 ksf retail space, and 2,246 hotel rooms) of the proposed development is completed.

(76) US 101 and Oakland Road (N)*

Impact: The level of service would be LOS D during the AM peak hour under existing conditions and the intersection would degrade to LOS F under project conditions. This constitutes a significant impact by both City of San Jose and CMP standards.

(77) US 101 and Oakland Road (S)*

Impact: The level of service would be LOS D during the PM peak hour under existing conditions and the intersection would degrade to LOS F under project conditions. This constitutes a significant impact by both City of San Jose and CMP standards.

Mitigation Measure. The necessary improvement to mitigate the project impact at this intersection would consist of the reconstruction of the interchange to include six-lanes on the overpass. The reconstruction of the interchange would improve intersection levels of service to LOS C. The impact and need for improvement at this intersection would occur after 65% (7.3 msf office space, 5,525 residential units, 910 ksf retail space, and 2,246 hotel rooms) of the proposed development is completed.

(78) Oakland Road and Hedding Street

Impact: The level of service would be LOS D during the AM peak hour under existing conditions and the intersection would degrade to LOS E under project conditions. This constitutes a significant impact by City of San Jose standards.

Mitigation Measure. The necessary improvement to mitigate the project impact at this intersection would consist of the conversion of an eastbound through lane to a shared through-left-turn lane. The implementation of this improvement would improve intersection level of service to LOS D. The impact and need for improvement at this intersection would occur after 96% (10.8 msf office space, 8,160 residential units, 1.3 msf retail space, and 3,456 hotel rooms) of the proposed development is completed.

Proposed Gateway Intersections

There is currently an application to amend the city's General Plan that will exempt intersections that serve as gateways to the greater downtown area from the city's level of service policy for Downtown Development. Projects outside of the Downtown core will still be required to conform to the City's LOS policy for impacts on Gateways Corridors. The application contends that the intersections serve as gateways to the greater downtown area and experience higher traffic demands resulting in traffic impacts. The General Plan Amendment requests that additional capacity not be added to the intersections and they be allowed to operate at capacity (thus, not being required to meet the LOS D standard) with the expectation that alternative routes or modes will be used by drivers when delays become unacceptable. A total of 19 identified gateway intersections will be impacted by the project. Of the 19 intersections only one can be improved.

(153) Coleman Avenue and Hedding Street

Impact: The level of service would be LOS D during the PM peak hour under existing conditions and the intersection would degrade to LOS F under project conditions. This constitutes a significant impact by City of San Jose standards.

Mitigation Measure. The necessary improvement to mitigate the project impact at this intersection would consist of the widening of Coleman Avenue from a four-lane roadway to a six-lane roadway (including the associated improvements of double-left-turn lanes and separate right turn-lanes on Hedding Street). The widening of Coleman Avenue has been studied by the city. The study indicated that the widening is feasible, but funding is necessary. The Coleman widening will require an amendment to the City's General Plan. The implementation of these improvements would improve intersection level of service to LOS D. It should be noted that the proposed nearby Cousins development may be required to implement improvements to Coleman Avenue/Hedding Street as mitigation.

Infeasible Gateway Intersection Impacts

There would be no feasible improvements at the 17 gateway intersections listed below due to right-of-way restrictions. The addition of project traffic to these intersections would result in significant unavoidable impacts. With the exemption of these intersections from the city's level of service policy, as described above, it is expected that traffic congestion will increase as the development identified in the Strategy Plan as well as other future development progresses. Future development, including the Strategy Plan, will not be required to provide mitigation at the exempted gateway intersections.

Proposed Gateway Intersections

(82) Eleventh Street and Taylor Street
(85) Eleventh Street and Julian Street
(86) Eleventh Street and St. James Street
(87) Eleventh Street and St. John Street
(88) Eleventh Street and Santa Clara Street
(90) Eleventh Street and San Antonio Street
(98) Tenth Street and Hedding Street
(99) Tenth Street and Taylor Street
(102) Tenth Street and Julian Street
(103) Tenth Street and St. James Street
(111) Tenth Street and Reed Street
(117) Seventh Street and Virginia Street
(122) Fourth Street and Jackson Street
(132) First Street and Taylor Street
(141) Almaden Avenue and Virginia Street
(145) Vine Street and Grant Street
(162) Meridian Avenue and San Carlos Street

Freeway Segment and Ramp Levels of Service

Project conditions traffic volumes for the subject freeway segments were estimated with the use of the traffic model. Ratios of traffic model projections for the Years 2000 and project conditions were applied to the Year 2000 CMP traffic volume data. The results show that 33 of the 48 directional freeway segments analyzed will operate at an unacceptable LOS F during at least one peak hour (see Figure 10). In addition, the HOV lanes on 25 of the segments also are projected to operate at LOS F conditions. A few freeway segments were shown to improve under project conditions. The improvements are attributable to the many freeway facility improvements that add capacity outlined earlier in this chapter.

Analysis of freeway ramps indicate that three ramps are projected to degrade to unacceptable levels. The following ramps are projected to operate at poor levels of service (V/C worse than 0.900 or LOS E):

Not to Scale

NOTE:
Highlighted segment operates at LOS F in at least one direction during at least one peak hour.

AM Peak Hour (LOS F)

PM Peak Hour (LOS F)

Figure 10

YEAR 2020 FREEWAY SEGMENT LEVEL OF SERVICE CONDITIONS

Downtown San Jose

Hexagon
Transportation Consultants, Inc.

Northbound SR 87 off to Julian Street (AM Peak Hour)
Southbound SR 87 on from Julian Street (PM Peak Hour)
Northbound I-280 off to 7th Street (AM Peak Hour)

Summary tables of freeway segment and ramp analysis are included in Appendix B.

Mitigation of freeway impacts would require widening of the freeways, which is infeasible. Therefore, these impacts must be considered significant and unavoidable. However, there are measures that could reduce the impacts. The measures primarily consist of transit improvements and enhancements as outlined below:

- Extension of BART to San Jose
- Further expansion of LRT lines
- Enhanced Bus Service
- Successful implementation of the parking plan that leads to a greater transit mode-split

These measures would provide options to commuters to the downtown area. An enhanced transit system, with a major improvement such as the BART extension, would reduce auto usage. The implementation of a parking plan that controls the amount of parking provided in the downtown area with policies and pricing, also will encourage the use of transit that would be more efficient and economical than auto. The reduction in auto usage would be most noticeable on freeways since most transit trips would originate from outside the downtown area.

The planned improvements to the SB SR 87 on-ramp from Julian Street and NB I-280 off-ramp to 7th Street ramps would improve conditions to acceptable levels of service.

- Southbound SR 87 on from Julian Street - The planned improvement at the ramp consists of the addition of a second lane to the ramp.

- Northbound I-280 off to 7th Street – A potential improvement at this ramp consists of its extension to Third Street. With the addition of a second lane on the ramp, levels of service would improve. Funding for this improvement has not been obtained.

Improvement to the NB SR 87 off ramp to Julian Street would necessitate the widening of the off ramp to two-lanes, but there are no plans to construct this improvement.

Strategy Plan Roadway Improvements

The proposed roadway improvements or adjustments outlined by the Strategy Plan and described earlier in this chapter will, in some cases, improve traffic circulation throughout the Greater Downtown area. Some of the proposed changes may improve transit, pedestrian, and vehicular cohesion, but also result in adverse impacts on the roadways. Discussed below are each of the proposed roadway changes and their effects on the transportation system.

- ***I-280 3rd Street Ramp Extension*** – As the freeway ramp analysis indicated, the extension of the I-280 to 7th Street off-ramp to 3rd Street would improve projected project impacts on the ramp. The improvements should include an additional lane on the off-ramp. The ramp extension would provide necessary capacity to serve the downtown area and aid in alleviating congestion on other downtown area ramps.

- ***Autumn Street Extension*** - The extension of Autumn Street, as identified under mitigation measures,

is necessary to serve projected traffic volumes. The Autumn Street extension would serve as an alternative route through the downtown area and alleviate traffic congestion along parallel routes such as Market Street and Almaden Boulevard.

- ***Coleman Avenue Widening*** - The widening of Coleman Avenue, as identified under mitigation measures, is necessary to serve projected traffic volumes.

The following proposed roadway changes could result in potentially significant impacts on the roadway system. The effects of each change will need to be assessed at the time of specific development plans.

- Enlarge Plaza de Cesar Chavez by removing a lane of traffic on either side of the plaza.
- Realign Julian Street between SR 87 and North 1st Street to extend the Downtown urban grid pattern.
- Explore the design of a median in Market Street with generous planting, street trees, and carefully considered left-turn lanes in the median.
- Explore the design of the Park continuing to the north across William Street and to the east with a narrowing of 1st Street.
- Consider certain streets to have more traffic to carry and other streets to be more pedestrian-oriented within SoFA. Designate streets for the character of their traffic and pedestrian uses.
- Make Market Street a less heavily traveled, more landscaped boulevard.
- Establish Second Street as two-way from San Carlos Street. Design Second Street, a local- serving street, to have bicycle lane(s)and angled parking on the west side.
- Explore the design of San Carlos Street to better accommodate vehicular traffic, the light rail trains (LRT) and wider sidewalks, especially along the southern side of the street.
- Consider traffic calming measures for the streets in the adjacent neighborhoods, such as Reed Street in the Market Almaden Neighborhood to the west of SoFA.
- Realign Reed Street and redesign the intersection of Market and Reed Streets for better traffic and pedestrian movements and improved streetscape design.
- Explore the designs of the intersections of San Carlos Street at Market, First, and Second Streets in order to make the pedestrian crossings easier and the light rail more integrated with the streetscape.

Project Transit Conditions

The planned growth within the downtown area will require that the already extensive transit system within the downtown area be enhanced. Projections indicate an increase of 50% in transit usage in the downtown area. Under project conditions, approximately 10,000 downtown related transit trips will be made during each of the AM and PM peak hours. This compares to about 6,600 to 6,700 in the year 2000.

The Strategy Plan outlines the following transit enhancements:

- Encourage bus ridership through the use of efficient, quiet, low-emission vehicles, improved bus shelters, and other rider amenities.

Thus, the Strategy Plan generally will have a beneficial impact on transit service and ridership. However, individual buildup could have adverse impacts depending on the building orientation and parking entrances. This is a potentially significant impact. Mitigation is that individual development plans need to be reviewed with VTA staff to insure compatibility with transit service. This would reduce the impact to a level of insignificance.

Project Conditions Pedestrian and Bicycle Enhancements

It is a goal of the Strategy Plan to not only maintain, but also enhance the pedestrian environment within the downtown area. With the large amount of planned development, increases in vehicular traffic are expected. It is undesirable to inhibit the flow of pedestrians and bicyclists throughout downtown with the narrowing or elimination of sidewalks for street widening to accommodate vehicular traffic. Rather the Strategy Plan proposes that existing pedestrian and bicycle facilities be improved and future development designed to better serve pedestrians and bicyclists.

By implementing the measures described earlier in this chapter, the Strategy Plan will have a beneficial effect on pedestrian and bicycle circulation. However, there is no provision in the plan to replace the San Carlos Street Bridge over Los Gatos Creek at the UPRR tracks. Since the plan will increase pedestrian traffic on San Carlos Street and the existing bridge is deficient, this is a significant adverse impact. Mitigation is to replace the bridge with a design that is ADA compliant or to provide a separate pedestrian bridge.

The San Fernando Street Bike Lane plan will provide for bike lanes along both sides of San Fernando Street between Eleventh Street and Diridon Station. Along with other pedestrian improvements, the bike lanes will provide for a pedestrian friendly connection between Diridon Station and the traditional Downtown center. Though the bike lanes will necessitate the elimination of one lane of traffic in each direction on San Fernando Street, traffic conditions will only be minimally effected and will continue to operate at acceptable levels.

Project Parking Conditions

Coordination of the proposed parking plan with the anticipated development levels will be critical in the maintenance of a functional transportation system. The parking plan will serve as a tool to control the quantity of parking spaces provided within the downtown core. Controlling the allotment of parking spaces on-site will serve as a tool to encourage the use of transit. With benefits to employers and employees it is expected that alternative means of transportation will be pursued. This shift from vehicle to transit will provide some relief to the roadway system. The Strategy Plan, by incorporating the Parking Management Plan will have a beneficial impact on downtown parking conditions.

4.
Improvement Phasing

The timing and implementation of each of the improvements identified to mitigate project impacts in the previous chapter are described in this chapter. As development within Downtown San Jose progresses, the construction of each of the identified improvements will be necessary.

Development Phasing

The funding for each of the identified improvements will be established as the development levels planned for Downtown San Jose proceed. Since the development planned for Downtown San Jose will not occur immediately, it is not necessary to construct all improvements at the initiation of development. Rather the improvements will be constructed concurrently with development as deemed necessary.

Generally, the implementation of each of the intersection improvements was determined based on level of service calculations with incremental phases of development. The planned development was divided into 25% increments to develop the following four phases of development:

Phase 1	2.8 msf of Office Space 2,125 Residential Units 350 ksf of Retail Space 900 Hotel Guest Rooms	Phase 3	8.4 msf of Office Space 6,375 Residential Units 1.05 msf of Retail Space 2,700 Hotel Guest Rooms
Phase 2	5.6 msf of Office Space 4,250 Residential Units 700 ksf of Retail Space 1,800 Hotel Guest Rooms	Phase 4	11.2 msf of Office Space 8,500 Residential Units 1.4 msf of Retail Space 3,600 Hotel Guest Rooms

Improvement Phasing

The phasing of the improvements was determined based on judgement of necessity of the improvements and level of service calculations. The phase at which the major improvements were needed was determined based on their need to serve the Downtown San Jose area as a whole. The major improvements serve as gateways and/or major arterials to and within Downtown San Jose, and therefore are needed to serve each of the development phases. Each of the major improvements is outlined below and presented in Table 15.

Major Downtown San Jose Improvements

Coleman Avenue Widening (Phase 1)
Autumn Extension (Phase 1)
Adjacent Neighborhood Traffic Calming (Phase 1)
SR 87/Julian off-ramp Improvements (Phase 2)
Bird Avenue Corridor Improvements (Phase 2)
US 101/Oakland Road Interchange Upgrade (Phase 2)
I-280/3rd & 7th Streets Extension (Phase 3)
Couplet Conversions (Phases 3 and 4)

The need for specific intersection improvements during each phase of development was determined based on level of service calculations. Each impacted intersection was evaluated to determine during which phase the addition of project traffic would cause the intersection to be impacted. A few exceptions to the level of service criteria include intersections for which the proposed improvements are minor and can be completed within the first phase of development. Each of the proposed improvements is outlined below. Level of service results for each development phase are shown in Table 15.

Phase 1

52 Coleman Avenue and Taylor Street
53 Stockton Avenue and The Alameda
55 Montgomery Street and Santa Clara Street*
56 Autumn Street and Santa Clara Street*

Phase 2

58 Bird Avenue and San Carlos Street*
59 Bird Avenue and Auzerais Avenue
60 I-280 and Bird Avenue (N)*
75 Oakland Road and Commercial Street
76 US 101 and Oakland Road (N)*
77 US 101 and Oakland Road (S)*
78 Oakland Road and Hedding Street
153 Coleman Avenue and Hedding Street

Phase 3

63 Delmas Avenue and Park Avenue

Phase 4

74 Senter Road and Keyes Street

Table 15
Downtown San Jose Phase Intersection Levels of Service Summary

Intersection	Peak Hour	Existing Ave. Delay	Existing LOS	Phase 1 Ave. Delay	Phase 1 LOS	Phase 1 Incr. In Crit. Delay	Phase 1 Incr. In Crit. V/C	Phase 2 Ave. Delay	Phase 2 LOS	Phase 2 Incr. In Crit. Delay	Phase 2 Incr. In Crit. V/C	Phase 3 Ave. Delay	Phase 3 LOS	Phase 3 Incr. In Crit. Delay	Phase 3 Incr. In Crit. V/C	2020 Project Ave. Delay	2020 Project LOS	2020 Project Incr. In Crit. Delay	2020 Project Incr. In Crit. V/C	Mitigated Ave. Delay	Mitigated LOS
Expanded Downtown Core Intersections																					
52 Coleman Avenue and Taylor Street	AM	47	E	54	E	16	0.07	70	F	47	0.15	92	F	91	0.23	121	F	147	0.32	37	D
	PM	34	D	38	D	6	0.06	41	E	16	0.15	46	E	21	0.25	59	E	43	0.38	34	D
53 Stockton Avenue and The Alameda	AM	17	C	16	C	-2	0.11	22	C	6	0.23	47	E	35	0.36	137	F	144	0.54	34	D
	PM	18	C	24	C	6	0.16	31	D	14	0.32	57	E	52	0.48	134	F	159	0.65	18	C
55 Montgomery Street and Santa Clara Street*	AM	14	B	14	B	0	-0.03	14	B	-1	-0.05	14	B	-1	-0.08	14	B	-1	-0.11	9	B
	PM	16	C	20	C	6	0.18	28	D	23	0.35	58	E	89	0.53	120	F	216	0.70	11	B
56 Autumn Street and Santa Clara Street*	AM	31	D	33	D	4	0.06	35	D	8	0.12	40	E	16	0.18	51	E	33	0.23	34	D
	PM	14	B	18	C	4	0.14	24	C	12	0.39	29	D	20	0.57	51	E	56	0.76	41	E
58 Bird Avenue and San Carlos Street*	AM	24	C	25	C	1	0.03	26	D	2	0.07	26	D	3	0.10	27	D	-5	0.10	26	D
	PM	34	D	38	D	4	0.06	44	E	13	0.12	54	E	27	0.18	64	F	49	0.23	48	E
59 Bird Avenue and Auzerais Avenue	AM	19	C	14	B	0	0.03	15	B	1	0.05	15	B	1	0.07	15	C	1	0.10	19	C
	PM	23	C	28	D	1	0.05	34	D	2	0.10	43	E	3	0.15	53	E	4	0.20	21	C
60 I-280 and Bird Avenue (N)*	AM	21	C	22	C	0	0.02	22	C	0	0.03	22	C	0	0.04	23	C	0	0.06	22	C
	PM	19	C	21	C	2	0.08	24	C	5	0.15	29	D	11	0.23	50	E	34	0.33	24	C
63 Delmas Avenue and Park Avenue	AM	18	C	19	C	1	0.06	19	C	2	0.13	20	C	3	0.19	20	C	4	0.25	18	C
	PM	20	C	23	C	4	0.19	33	D	18	0.38	83	F	92	0.57	199	F	255	0.75	32	D
Intersections Outside Core/Expanded Core																					
74 Senter Road and Keyes Street	AM	19	C	19	C	0	0.01	20	C	1	0.02	20	C	1	0.03	20	C	1	0.04	20	C
	PM	27	D	27	D	0	0.06	31	D	7	0.11	38	D	19	0.16	48	E	37	0.21	48	E
75 Oakland Road and Commercial Street	AM	31	D	47	E	32	0.15	89	F	108	0.29	156	F	229	0.44	252	F	396	0.58	41	E
	PM	36	D	42	E	10	0.07	53	E	29	0.14	70	F	58	0.21	93	F	94	0.27	34	D
76 US 101 and Oakland Road (N)*	AM	37	D	42	E	13	0.07	87	F	102	0.22	157	F	242	0.38	255	F	435	0.53	21	C
	PM	17	C	15	B	-3	-0.07	16	C	-1	-0.02	18	C	1	0.04	21	C	5	0.09	13	B
77 US 101 and Oakland Road (S)*	AM	19	C	15	B	-5	0.04	15	B	-5	0.07	15	C	-4	0.09	16	C	-4	0.11	14	B
	PM	26	D	42	E	32	0.11	69	F	87	0.22	107	F	166	0.33	157	F	270	0.43	25	C
78 Oakland Road and Hedding Street	AM	39	D	40	D	1	0.01	40	E	2	0.02	41	E	4	0.04	43	E	5	0.05	40	D
	PM	30	D	31	D	1	0.03	31	D	1	0.05	32	D	7	0.07	33	D	3	0.11	36	D
Gateway Intersections																					
153 Coleman Avenue and Hedding Street	AM	44	E	45	E	1	0.00	45	E	2	0.01	46	E	2	0.01	46	E	3	0.02	32	D
	PM	36	D	40	D	7	0.04	46	E	17	0.09	56	E	33	0.13	67	F	53	0.18	29	D

Notes:
Intersections located within downtown core are exempt from the city's LOS Policy and are allowed to operate at unacceptable levels. Levels of service provided for informational purposes only.
Box indicates trigger point of significant impact
* Denotes CMP intersection.

5.
Cumulative Conditions

This chapter presents the long-term traffic impacts on the transportation system associated with the proposed development levels for the Greater Downtown area identified in *Strategy 2000* as well as full buildout of the existing General Plan in the City of San Jose. The purpose of this analysis is to evaluate the long-term traffic impacts on the transportation system associated with the proposed development for Downtown San Jose.

Year 2025 Traffic Conditions

In order to determine the change in traffic conditions for the year 2025, the model was used to forecast traffic volumes for cumulative conditions. Cumulative conditions allow development within the Downtown San Jose area as described in *Strategy 2000* and that represents full buildout of the existing General Plan. The 2025 model run also includes land use growth and transportation improvements within the entire nine Bay Area region. In general, the 2025 land uses are consistent with the year 2000 ABAG projections for the year 2025 and only those transportation improvements that are in MTC's Regional Transportation Plan are included in the assumed transportation networks.

Gateway Traffic Volumes

Tables 16 and 17 present the AM and PM peak hour model estimated directional volumes at the gateway facilities of Downtown San Jose. The table shows that under cumulative conditions approximately 90% of the roadway capacity would be utilized. During the AM peak hour, 9 of the 12 gateways would operate at volume-to-capacity (v/c) ratios of 0.90 or worse under cumulative conditions, while at 4 facilities the demand would exceed capacity. During the PM peak hour 8 of the 12 gateways would operate at a v/c ratio of .90 or worse under cumulative conditions, while at 6 facilities the demand would exceed capacity.

Table 16

2025 Cumulative Traffic Volumes at Gateways - AM Peak-Hour

		Peak Direction						Off Peak Direction					
Gateway		dir	# of lanes	lane cap.	1-hour cap.	model vol.	v/c	dir	# of lanes	lane cap.	1-hour cap.	model vol.	v/c
North													
Coleman Avenue	n/o Taylor Street	NB	2	950	1,900	1,810	0.95	SB	2	950	1,900	1,430	0.75
First Street	n/o Taylor Street	NB	2	950	1,900	1,910	1.01	SB	2	950	1,900	970	0.51
3rd/4th Streets	n/o Julian Street	NB	3	900	2,700	2,410	0.89	SB	3	900	2,700	470	0.17
Sub-Total					6,500	6,130	0.94				6,500	2,870	0.44
East													
Julian/St. James Streets	e/o 4th Street	WB	3	900	2,700	2,460	0.91	EB	3	900	2,700	1,260	0.47
Santa Clara Street	e/o 4th Street	WB	3	850	2,550	1,950	0.76	EB	3	850	2,550	1,090	0.43
Reed Street	e/o 4th Street	WB	2	600	1,200	230	0.19	EB	2	600	1,200	0	0.00
Sub-Total					6,450	4,640	0.72				6,450	2,350	0.36
South													
6th/7th Street	s/o Virginia Street	NB	2	900	1,800	1,960	1.09	SB	2	900	1,800	1,150	0.64
Monterey Highway	s/o Virginia Street	NB	3	900	2,700	2,660	0.99	SB	3	900	2,700	130	0.05
Almaden Avenue	s/o Virginia Street	NB	3	950	2,850	3,150	1.11	SB	2	950	1,900	1,110	0.39
Bird Avenue	s/o Virginia Street	NB	1	650	650	650	1.00	SB	1	650	650	120	0.18
Sub-Total					8,000	8,420	1.05				7,050	2,510	0.31
West													
San Carlos Street	w/o Montgomery	WB	2	900	1,800	1,730	0.96	EB	2	900	1,800	1,730	0.96
The Alameda	w/o Montgomery	WB	2	950	1,900	1,750	0.92	EB	2	950	1,900	1,070	0.56
Sub-Total					3,700	3,480	0.94				3,700	2,800	0.76
Total					***24,650***	***22,670***	***0.92***				***23,700***	***10,530***	***0.43***

Table 17

2025 Cumulative Traffic Volumes at Gateways - PM Peak-Hour

		Peak Direction						Off-Peak Direction					
Gateway		dir	# of lanes	lane cap.	1-hour cap.	model vol.	v/c	dir	# of lanes	lane cap.	1-hour cap.	model vol.	v/c
North													
Coleman Avenue	n/o Taylor Street	SB	2	950	1,900	1,920	1.01	NB	2	950	1,900	1,570	0.83
First Street	n/o Taylor Street	SB	2	950	1,900	1,930	1.02	NB	2	950	1,900	1,420	0.75
3rd/4th Streets	n/o Julian Street	SB	3	900	2,700	2,490	0.92	NB	3	900	2,700	860	0.32
Sub-Total					6,500	6,340	0.98				6,500	3,850	0.59
East													
Julian/St. James Streets	e/o 4th Street	EB	3	900	2,700	2,270	0.84	WB	3	900	2,700	2,130	0.79
Santa Clara Street	e/o 4th Street	EB	3	850	2,550	1,680	0.66	WB	3	850	2,550	1,620	0.64
Reed Street	e/o 4th Street	EB	2	600	1,200	120	0.10	WB	2	600	1,200	190	0.16
Sub-Total					6,450	4,070	0.63				6,450	3,940	0.61
South													
6th/7th Street	s/o Virginia Street	SB	2	900	1,800	1,890	1.05	NB	2	900	1,800	390	0.22
Monterey Highway	s/o Virginia Street	SB	3	900	2,700	2,790	1.03	NB	3	900	2,700	700	0.26
Almaden Avenue	s/o Virginia Street	SB	2	950	1,900	2,040	1.07	NB	3	950	2,850	1,270	0.67
Bird Avenue	s/o Virginia Street	SB	1	650	650	650	1.00	NB	1	650	650	80	0.12
Sub-Total					7,050	7,370	1.05				8,000	2,440	0.35
West													
San Carlos Street	w/o Montgomery	EB	2	900	1,800	1,700	0.94	WB	2	900	1,800	1,790	0.99
The Alameda	w/o Montgomery	EB	2	950	1,900	1,640	0.86	WB	2	950	1,900	1,730	0.91
Sub-Total					3,700	3,340	0.90				3,700	3,520	0.95
Total					***23,700***	***21,120***	***0.89***				***24,650***	***13,750***	***0.58***

Vehicle Miles Traveled

Table 18 presents the 2025 projected vehicle miles traveled (VMT) on the roadway facilities within the downtown area. The Greater Downtown area boundary extends beyond the traditional Downtown core to include areas around Diridon Station to the west, areas to the north to approximately Taylor Street, areas to the east that include San Jose State University (SJSU), and areas to the south to approximately I-280. The table shows that during the AM peak hour under cumulative conditions, about 50% of the vehicle miles would be traveled at congested conditions (LOS E or F). During the PM peak hour, the congested VMT be 40%. Most of the congested VMT would occur on the freeway system.

Freeway Analysis

Traffic conditions on the surrounding freeway system under cumulative conditions was also evaluated. Tables 19 and 20 present the number of lanes, the capacity, the forecasted AM and PM peak hour volumes, and the volume-to-capacity ratios for cumulative conditions. The table shows that the aggregate v/c-ratio for all freeway segments combined would be 1.02 and 1.05 during the AM and PM peak hours, respectively, under cumulative conditions. Almost all of the freeway segments would operate at congested traffic conditions by the year 2025. Even some of the HOV lanes would be heavily traveled and operate near or at capacity.

Downtown Gateway Intersections

As presented in Chapter 3, the following 17 study intersections that serve the downtown San Jose area were determined to be impacted by the project and would have no feasible improvements that can be implemented to improve their operations:

(82) Eleventh Street and Taylor Street
(85) Eleventh Street and Julian Street
(86) Eleventh Street and St. James Street
(87) Eleventh Street and St. John Street
(88) Eleventh Street and Santa Clara Street
(90) Eleventh Street and San Antonio Street
(98) Tenth Street and Hedding Street
(99) Tenth Street and Taylor Street
(102) Tenth Street and Julian Street
(103) Tenth Street and St. James Street
(111) Tenth Street and Reed Street
(117) Seventh Street and Virginia Street
(122) Fourth Street and Jackson Street
(132) First Street and Taylor Street
(141) Almaden Avenue and Virginia Street
(145) Vine Street and Grant Street
(162) Meridian Avenue and San Carlos Street

There is currently an application to amend the city's General Plan that will exempt intersections from the city's level of service policy that serve transit corridors. The application contends that it is not appropriate

Table 18

2025 Cumulative VMT by LOS (Facilities within Expanded Core Boundary

	AM Peak Hour			PM Peak Hour		
		LOS			LOS	
Facility	A-D	E	F	A-D	E	F
Freeways	11,944	16,776	9,714	20,050	11,326	8,701
Arterials	20,441	4,807	2,302	22,924	7,553	2,512
Collectors	614	90	570	1,274	0	201
	32,999	**21,673**	**12,586**	**44,248**	**18,879**	**11,414**
		67,258			**74,541**	
Freeways	31%	44%	25%	50%	28%	22%
Arterials	74%	17%	8%	69%	23%	8%
Collectors	48%	7%	45%	86%	0%	14%
	49%	**32%**	**19%**	**59%**	**25%**	**15%**

Note: percentages do not always add up to 100% due to rounding.

Table 19
2025 Cumulative Traffic Volumes on Freeway Segments - AM Peak Hour

	Freeway Segment	dir	Use	# of lanes	lane cap.	1-hour cap.	model vol.	v/c
1	I-280, e/o 11th Street	wb	lov	5	1,900	9,500	10,670	1.12
2	I-280, e/o 11th Street	eb	lov	5	1,900	9,500	9,490	1.00
3	I-280, w/o Bird Avenue	wb	lov	5	1,900	9,500	10,130	1.07
4	I-280, w/o Bird Avenue	eb	lov	4	1,900	7,600	9,430	1.24
5	SR 87, n/o Julian Street	nb	lov	2	1,850	3,700	4,100	1.11
6	SR 87, n/o Julian Street	nb	hov	1	1,850	1,850	1,840	0.99
7	SR 87, n/o Julian Street	sb	lov	2	1,850	3,700	2,380	0.64
8	SR 87, n/o Julian Street	sb	hov	1	1,850	1,850	590	0.32
9	SR 87, s/o I-280	nb	lov	3	1,900	5,700	6,920	1.21
10	SR 87, s/o I-280	nb	hov	1	1,900	1,900	2,280	1.20
11	SR 87, s/o I-280	sb	lov	3	1,900	5,700	4,740	0.83
12	SR 87, s/o I-280	sb	hov	1	1,900	1,900	1,060	0.56
	Totals			**33**	**22,600**	**62,400**	**63,630**	**1.02**

Table 20
2025 Cumulative Traffic Volumes on Freeway Segments - PM Peak Hour

	Freeway Segment	dir	Use	# of lanes	lane cap.	1-hour cap.	model vol.	v/c
1	I-280, e/o 11th Street	wb	lov	5	1,900	9,500	10,040	1.06
2	I-280, e/o 11th Street	eb	lov	5	1,900	9,500	9,940	1.05
3	I-280, w/o Bird Avenue	wb	lov	5	1,900	9,500	10,540	1.11
4	I-280, w/o Bird Avenue	eb	lov	4	1,900	7,600	10,020	1.32
5	SR 87, n/o Julian Street	nb	lov	2	1,850	3,700	2,960	0.80
6	SR 87, n/o Julian Street	nb	hov	1	1,850	1,850	620	0.34
7	SR 87, n/o Julian Street	sb	lov	2	1,850	3,700	4,310	1.16
8	SR 87, n/o Julian Street	sb	hov	1	1,850	1,850	1,960	1.06
9	SR 87, s/o I-280	nb	lov	3	1,900	5,700	4,760	0.84
10	SR 87, s/o I-280	nb	hov	1	1,900	1,900	1,140	0.60
11	SR 87, s/o I-280	sb	lov	3	1,900	5,700	6,720	1.18
12	SR 87, s/o I-280	sb	hov	1	1,900	1,900	2,220	1.17
	Totals			**33**	**22,600**	**62,400**	**65,230**	**1.05**

to widen intersections in areas that are designed to promote alternative modes. The General Plan Amendment requests that additional capacity not be added to the intersections and they be allowed to operate at capacity with the expectation that alternative routes or modes will be used by drivers when delays become unacceptable. It would be appropriate to add these six intersections to the list of exempted intersections under the proposed LOS policy change.

Additional intersection level of service analysis was performed at these 17 intersections to evaluate future conditions with the proposed downtown development levels as well as planned development levels throughout the city, including North San Jose, Evergreen, and Coyote Valley. Results shown in Table 21 indicate that each of the intersections is projected to operate at LOS E or F conditions during at least one peak hour.

Table 21
Downtown Gateway Intersection Level of Service

	Intersection	Peak Hour	Existing Ave. Delay	Existing LOS	2020 Project Ave. Delay	2020 Project LOS	Cumulative Ave. Delay	Cumulative LOS
82	Eleventh Street and Taylor Street	AM	44	E	55	E	382	F
		PM	7	B	121	F	196	F
85	Eleventh Street and Julian Street	AM	12	B	88	F	149	F
		PM	8	B	202	F	381	F
86	Eleventh Street and St. James Street	AM	5	A	54	E	85	F
		PM	9	B	430116	F	387533	F
87	Eleventh Street and St. John Street	AM	4	A	16	C	16	C
		PM	7	B	56	E	56	E
88	Eleventh Street and Santa Clara Street	AM	16	C	57	E	57	E
		PM	12	B	28	D	31	D
90	Eleventh Street and San Antonio Street	AM	5	A	148	F	148	F
		PM	4	A	5	A	5	A
98	Tenth Street and Hedding Street	AM	10	B	68	F	104	F
		PM	22	C	47	E	58	E
99	Tenth Street and Taylor Street	AM	6	B	31	D	37	D
		PM	11	B	45	E	118	F
102	Tenth Street and Julian Street	AM	8	B	181	F	181	F
		PM	8	B	20	C	178	F
103	Tenth Street and St. James Street	AM	8	B	108	F	104	F
		PM	9	B	71	F	311	F
111	Tenth Street and Reed Street	AM	5	B	5	B	5	B
		PM	5	A	70	F	70	F
117	Seventh Street and Virginia Street	AM	13	B	17	C	17	C
		PM	16	C	72	F	72	F
122	Fourth Street and Jackson Street	AM	21	C	52	E	52	E
		PM	13	B	48	E	48	E
132	First Street and Taylor Street	AM	34	D	36	D	41	E
		PM	49	E	107	F	359	F
141	Almaden Avenue and Virginia Street	AM	5	B	6	B	27	D
		PM	11	B	81	F	74	F
145	Vine Street and Grant Street	AM	6	B	48	E	54	E
		PM	16	C	19	C	19	C
162	Meridian Avenue and San Carlos Street	AM	28	D	31	D	31	D
		PM	31	D	48	E	48	E

Notes:
Intersections located within downtown core are exempt from the city's LOS Policy and are allowed to operate at unacceptable levels. Levels of service provided for informational purposes only.
* Denotes CMP intersection.

6. Conclusions

The project is defined as the development level expected to occur under the *Strategy 2000* plan for Downtown San Jose. The study included level of service analysis of AM and PM peak hour traffic conditions for identified intersections and freeway segments and ramps within and surrounding the downtown area. The intersection level of service analysis consisted of the evaluation of a total of 164 intersections (28 CMP, 129 local, and 7 future signalized intersections). Forty-eight freeway segments and 45 freeway ramps also were evaluated. The potential level of service impacts of the planned downtown development levels were evaluated in accordance with the standards set forth by City of San Jose and the Congestion Management Program (CMP) of Santa Clara county. Impacts to transit and pedestrian facilities were determined based on engineering judgement.

Project Impacts

Intersection Impacts

Results of the intersection level of service analysis show that 31 of the 164 study intersections would be impacted by the project according to City of San Jose and CMP (where applicable) level of service standards. Of the 31 impacted intersections, there are 19 intersections at which there are no feasible improvements that can be made to mitigate project impacts. The impacts, therefore, must be considered significant and unavoidable. Proposed mitigation measures are presented for the other 12 intersections in Chapter 3.

Freeway and Ramp Impacts

The results of the freeway segment analysis show that 33 of the 48 freeway segments studied will be impacted by the project according to CMP level of service standards for freeways. Analysis of freeway ramps indicate that three of the 45 ramps studied will operate at poor levels under project conditions.

Mitigation is available at two of the ramps. At the third location, the NB SR 87 off-ramp to Julian Street, the impact must be considered significant and unavoidable.

Mitigation of freeway impacts would require widening of the freeways, which is infeasible. Therefore, these impacts must be considered significant and unavoidable. However, there are measures that could reduce the impacts. The measures primarily consist of transit improvements and enhancements as outlined below:

- Extension of BART to San Jose
- Further expansion of LRT lines
- Enhanced Bus Service
- Successful implementation of the parking plan, possibly including increased parking rates, that leads to a greater transit mode-split

Strategy Plan Roadway Improvements

Though the Strategy Plan proposes several significant roadway improvements to serve the downtown area, some of the proposed roadway changes of the Strategy Plan may have an adverse effect on traffic conditions. . The Strategy Plan identifies possible improvements. Actual roadway improvements/changes will be identified at the time of specific development. The means of funding and implementation of the improvements will also be determined with future developments. Discussed below are each of the proposed roadway changes and their effects on the transportation system.

- ***I-280 3rd Street Ramp Extension*** – As the freeway ramp analysis indicated, the extension of the I-280 to 7th Street off-ramp to 3rd Street would improve projected project impacts on the ramp. The improvements should include an additional lane on the off-ramp. The ramp extension would provide necessary capacity to serve the downtown area and aid in alleviating congestion on other downtown area ramps.

- ***Autumn Street Extension*** - The extension of Autumn Street, as identified under mitigation measures, is necessary to serve projected traffic volumes. The Autumn Street extension would serve as an alternative route through the downtown area and alleviate traffic congestion along parallel routes such as Market Street and Almaden Boulevard.

- ***Coleman Avenue Widening*** - The widening of Coleman Avenue, as identified under mitigation measures, is necessary to serve projected traffic volumes.

The following proposed roadway changes could result in potentially significant impacts on the roadway system. The effects of each change will need to be accessed at the time of specific development plans.

- Enlarge Plaza de Cesar Chavez by removing a lane of traffic on either side of the plaza.
- Realign Julian Street between SR 87 and North 1st Street to extend the Downtown urban grid pattern.
- Explore the design of a median in Market Street with generous planting, street trees, and carefully considered left-turn lanes in the median.
- Explore the design of the Park continuing to the north across William Street and to the east with a narrowing of 1st Street.
- Consider certain streets to have more traffic to carry and other streets to be more pedestrian-oriented within SoFA. Designate streets for the character of their traffic and pedestrian uses.
- Make Market Street a less heavily traveled, more landscaped boulevard.

- Establish Second Street as two-way from San Carlos Street. Design Second Street, a local- serving street, to have bicycle lane(s)and angled parking on the west side.
- Explore the design of San Carlos Street to better accommodate vehicular traffic, the light rail trains (LRT) and wider sidewalks, especially along the southern side of the street.
- Consider traffic calming measures for the streets in the adjacent neighborhoods, such as Reed Street in the Market Almaden Neighborhood to the west of SoFA.
- Realign Reed Street and redesign the intersection of Market and Reed Streets for better traffic and pedestrian movements and improved streetscape design.
- Explore the designs of the intersections of San Carlos Street at Market, First, and Second Streets in order to make the pedestrian crossings easier and the light rail more integrated with the streetscape.

Project Transit Conditions

The Strategy Plan includes several provisions to support and enhance transit service and ridership. Overall it would have a beneficial impact on transit. However, it should include a provision that future individual development projects should be reviewed with VTA staff to ensure that the siting of buildings and driveway is compatible with transit service.

Project Pedestrian Enhancements

The Strategy Plan also includes several provisions to enhance pedestrian and bicycle circulation. Overall, the plan would be beneficial to these modes. However, the plan should include a provision to replace the San Carlos Street Bridge over Los Gatos Creek at the UPRR tracks, which is pedestrian deficient, or to provide a separate pedestrian bridge.

Project Parking Conditions

The Strategy Plan also includes a Parking Management Plan. The parking plan will serve as a tool to control the quantity of parking spaces provided within the downtown core. Controlling the allotment of parking spaces on-site will serve as a tool to encourage the use of transit. Also, a reduction in on-site parking requirement is tied to implementation of TDM measures.