North San Jose
Traffic Impact Fee Plan

Prepared for:
City of San Jose

Prepared by:
Hexagon Transportation Consultants, Inc.

June 2005

Table of Contents

1. Introduction 1
2. North San Jose Future Growth Analysis 11
4. Improvement Costs 28
5. North San Jose Traffic Impact Fee 31

List of Tables

Table 1 Intersection Level of Service Comparison of Deficient Intersections 12
Table 2 Intersection Levels of Service Summary 13
Table 3 Improvement Cost Summary 28
Table 4 North San Jose Trip Estimates 32
Table 5 North San Jose Land Use Traffic Impact Fees 32
Table 6 Consumer Price Index 32

List of Figures

Figure 1 North San Jose Deficiency Plan Boundary 2
Figure 2 North San Jose Study Intersections 5
Figure 3 Other City of San Jose Study Intersections 6
Figure 4 North San Jose Roadway/Intersection Improvements 14
Figure 5 North San Jose Project Impacts and Improvements 17
Figure 6 Other City of San Jose Project Impacts and Improvements 19
Figure 7 Potential Future Bicycle Facilities 27

1. Introduction

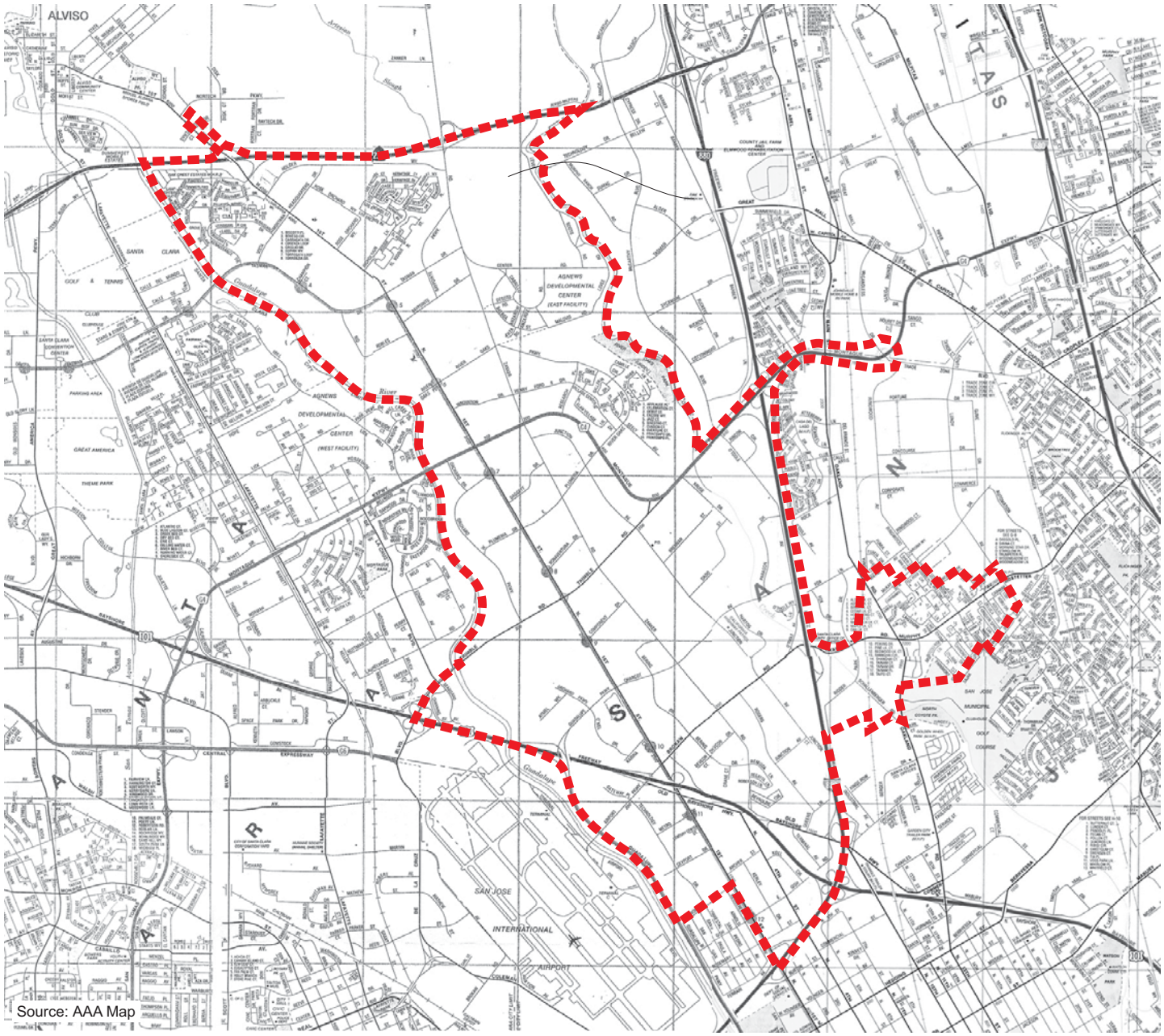
The purpose of this document is to set forth a plan to fund and implement the identified transportation improvements that will be needed to serve the anticipated development growth in North San Jose. Improvements to serve the projected growth have been identified as part of the "*North San Jose Development Policy*" traffic study prepared by Hexagon Transportation Consultants Inc, January 2005. As development proceeds in North San Jose, improvements to the transportation system will be needed to serve increases in traffic volumes as well as transit use.

North San Jose Future Growth

The North San Jose area, also known as the Golden Triangle, is generally bounded by US 101, I-880, and SR 237, and is primarily an industrial area made up of one to four story buildings housing high-tech companies and other industrial businesses. Though there are some residential developments within the North San Jose area, it has generally been viewed as a major employment center for the city. The potential development levels would allow for the intensification of employment, while also adding additional housing to balance land uses in the North San Jose area. The proposed future development levels for each type of land use are as follows:

26.7 msf of Industrial Space
1.6 msf of Commercial Space
32,000 Residential Units

Employment growth within North San Jose will attract vehicle trips from future housing in outlying cities and counties putting further burden on a roadway system that already is operating at or near capacity. With the additional housing located within the North San Jose area in close proximity to employment, it is expected that less of a demand will be placed on regional transportation facilities. Housing within North San Jose may create additional demands on the roadway system within its boundaries, but will shorten vehicle trips to and from surrounding areas. it. The North San Jose boundary is shown on Figure 1.



= North San Jose Deficiency Plan Area Boundary

Figure 1

NORTH SAN JOSE BOUNDARY

North San Jose Traffic Impact Fee

Hexagon
Transportation Consultants, Inc.

North San Jose Development Growth Analysis

The North San Jose traffic impact fee on new development is based on the comprehensive traffic analysis completed for the proposed development levels, *North San Jose Development Policy*, *February 2005*. The traffic analysis consists of the evaluation of the proposed intensification of future development within the North San Jose area. There currently are two development policies in place for the North San Jose area, the North San Jose Deficiency Plan administered by the Congestion Management Program (CMP) of the VTA and the North San Jose Development Policy that is administered by the City of San Jose. The proposed development levels will require that the existing development policies be revised. As such, the traffic analysis consists of a near-term and long-range traffic analysis of the proposed development levels and their effects on transportation facilities based on the standard City of San Jose and CMP level of service policies. Results of the analysis have since been used to establish a new North San Jose Development Policy that identifies development guidelines and necessary roadway improvements. The traffic impact fee on new development within North San Jose will serve to implement those improvements identified as part of the traffic analysis.

North San Jose Development Traffic Projections

The VTA/BART travel demand model was used to estimate the trip making characteristics of the project. There are four major steps in the travel demand forecasting process. First, the trip generation model is applied to calculate the number of (daily) trips produced by the population in the modeled area. Next, the distribution model estimates where the trips are coming from and going to. The mode choice model then estimates which mode of transportation will be chosen for each trip (walk, bike, transit, automobile). And at last, the trip assignment step determines the amount of traffic that will be allocated to each road or transit route.

The model estimated that the project will increase the number of trips within the region by approximately 622,000 per day. The North San Jose project area will generate about 487,000 new person trips. About 158,000 (or 32%) of these project trips will stay within the North San Jose area. Of all North San Jose project trips, 88% will be made by automobile, six percent will be on transit and six percent will be pedestrian or bike. Of the trips that will stay within the North San Jose area, these mode shares are 75% automobile, 8% transit, and 17% pedestrian/bike. The project will add approximately 34,200 vehicles to the roadways during the AM peak hour and 41,300 vehicles during the PM peak hour.

Intersection Level of Service Analysis

The analysis of the effect of the development growth in North San Jose included the analysis of 156 signalized intersections located throughout San Jose. 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 intersections within North San Jose were studied. Additionally, other City of San Jose intersections located outside of North San Jose that are currently operating at LOS D or worse conditions and to which the project will likely add a significant amount of traffic, 10 trips or more per lane, were also studied. Intersections operating at LOS C or better outside of the North San Jose area were not studied because the project will not add a sufficient amount of traffic through the intersections to cause them to degrade adequately, two letter grades, to cause a significant impact. The exclusion of intersections operating at LOS C or better is based on the assumption that the majority of traffic generated by the project remains within North San Jose and the remainder of traffic is dispersed to major arterials and freeways. Traffic

due to the North San Jose development dissipates quickly as the distance from North San Jose increases. The study intersections are shown graphically in Figures 2 and 3.

Traffic Impact Fees on New Development

The North San Jose traffic impact fee will be determined based on a calculated cost per vehicle trip utilizing identified improvement costs, land use types, sizes, and trip generating characteristics. Using PM peak-hour trip-making characteristics of the particular land use proposed for development in North San Jose a proportioned fee can be calculated for each land use type. The PM peak hour is used because it is the PM peak hour during which traffic conditions are the worst, as described above. The cost per vehicle trip for the anticipated growth is calculated by dividing the total package cost of improvements by the increase in peak hour trips. The cost is then distributed upon each of the land uses based on their trip generating characteristics using the following rates:

Single-Family Residential	0.63 trips per unit
Multi-Family Residential	0.50 trips per unit
Industrial Uses	0.93 trips per 1,000 s.f.

The land use trip rates are established by the traffic model and account for internalization, transit use, and bicycle/pedestrians. Multiplying the cost per trip figure by each of the rates determines the applicable fee for each land use.

Retail development will be exempt from traffic impact fees because it is anticipated that retail will be primarily local serving and will not put any additional burden on the road system. The retail space will serve as supporting retail to the industrial land uses and residents of North San Jose. Although it is assumed that vehicle trips will be made to the North San Jose retail land uses, the vast majority of trips to the retail uses will be generated by the other land uses within North San Jose. Therefore, the trips to the retail land uses are already accounted for in the residential and industrial trip generation estimates.

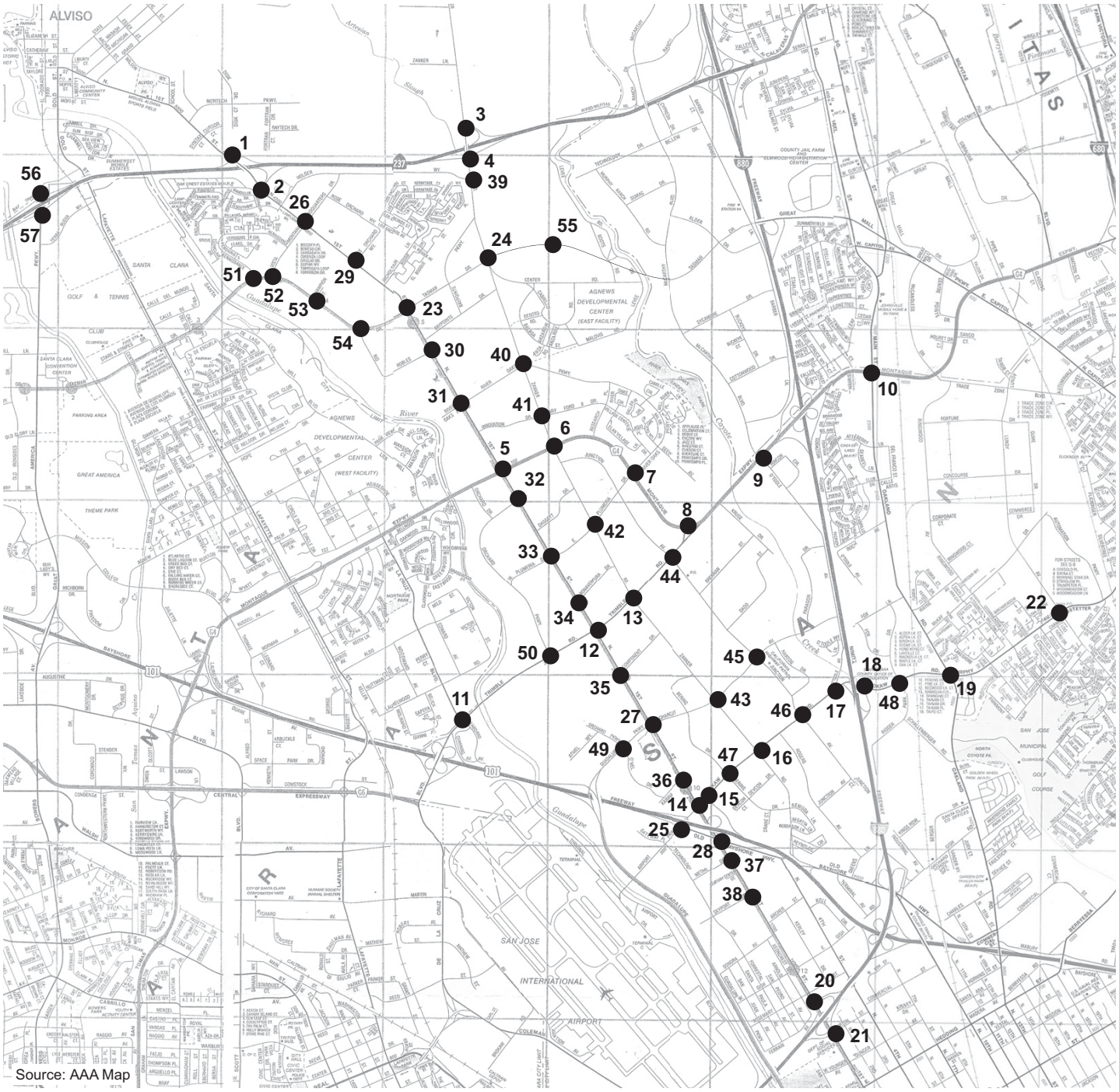


Figure 2

NORTH SAN JOSE STUDY INTERSECTIONS

North San Jose Traffic Impact Fee

Hexagon
Transportation Consultants, Inc.

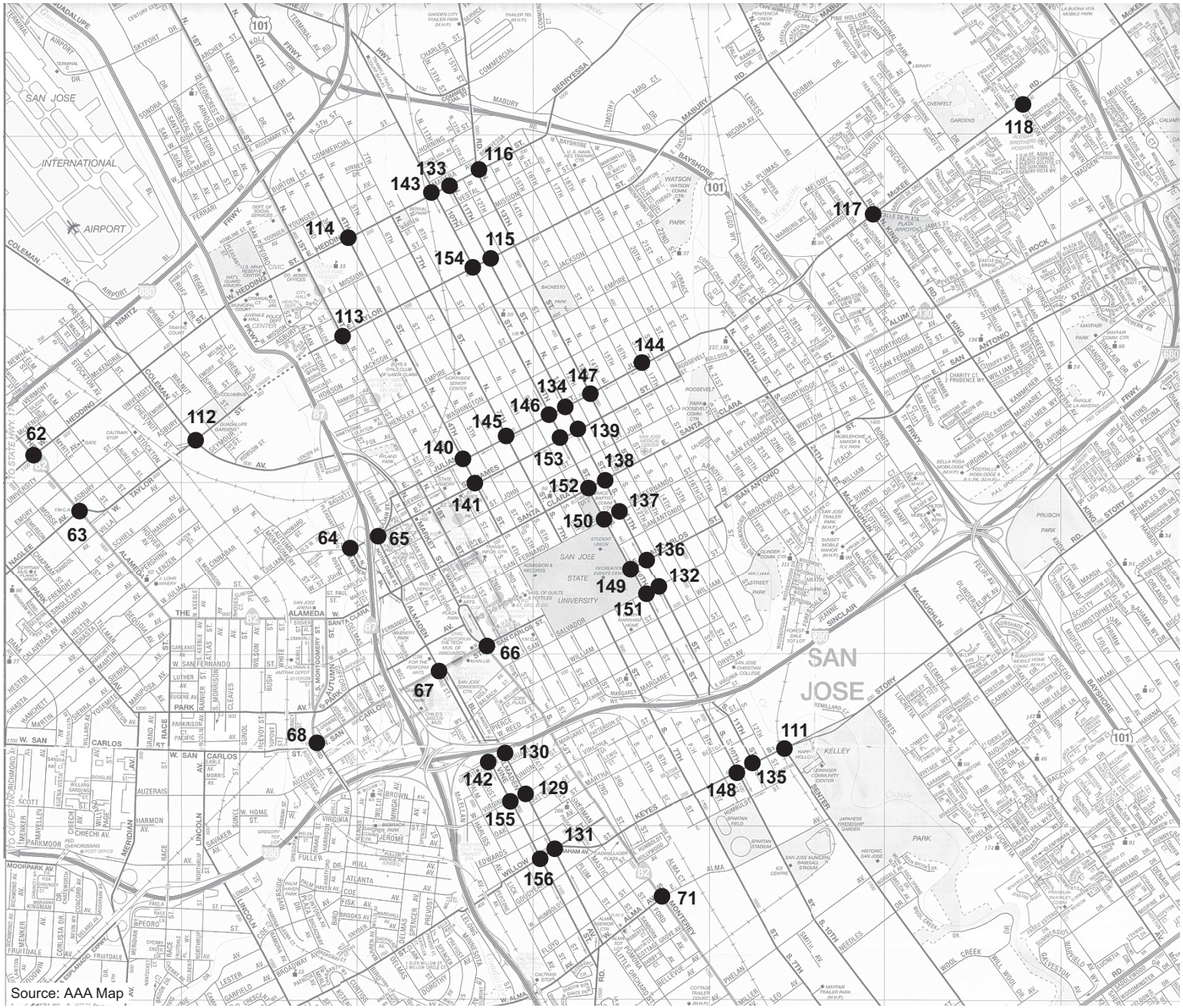
Source: AAA Map

Figure 3A

OTHER CITY OF SAN JOSE STUDY INTERSECTIONS

Hexagon
Transportation Consultants, Inc.

North San Jose Traffic Impact Fee



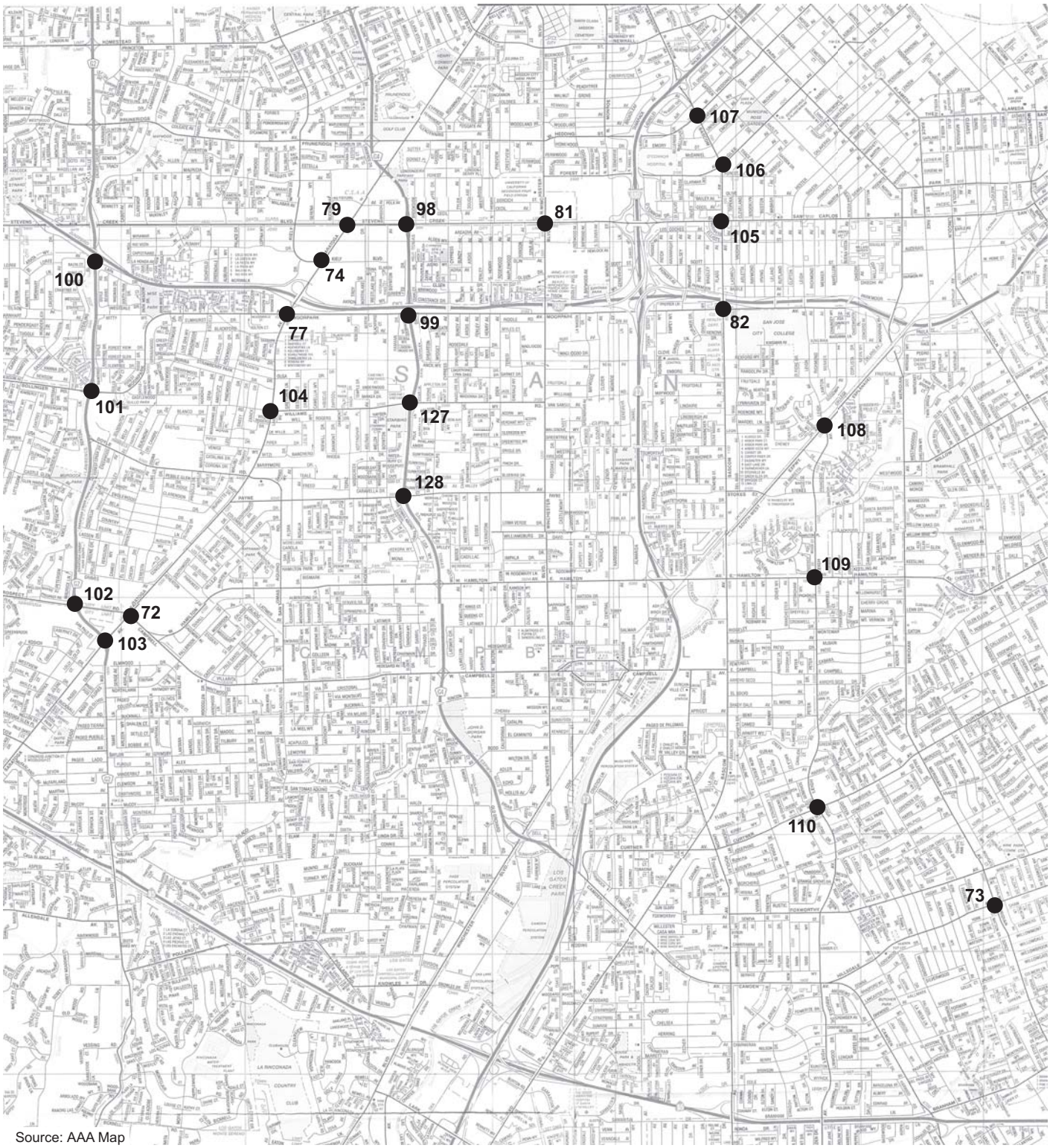
Source: AAA Map

Figure 3B

OTHER CITY OF SAN JOSE STUDY INTERSECTIONS

Hexagon
Transportation Consultants, Inc.

North San Jose Traffic Impact Fee



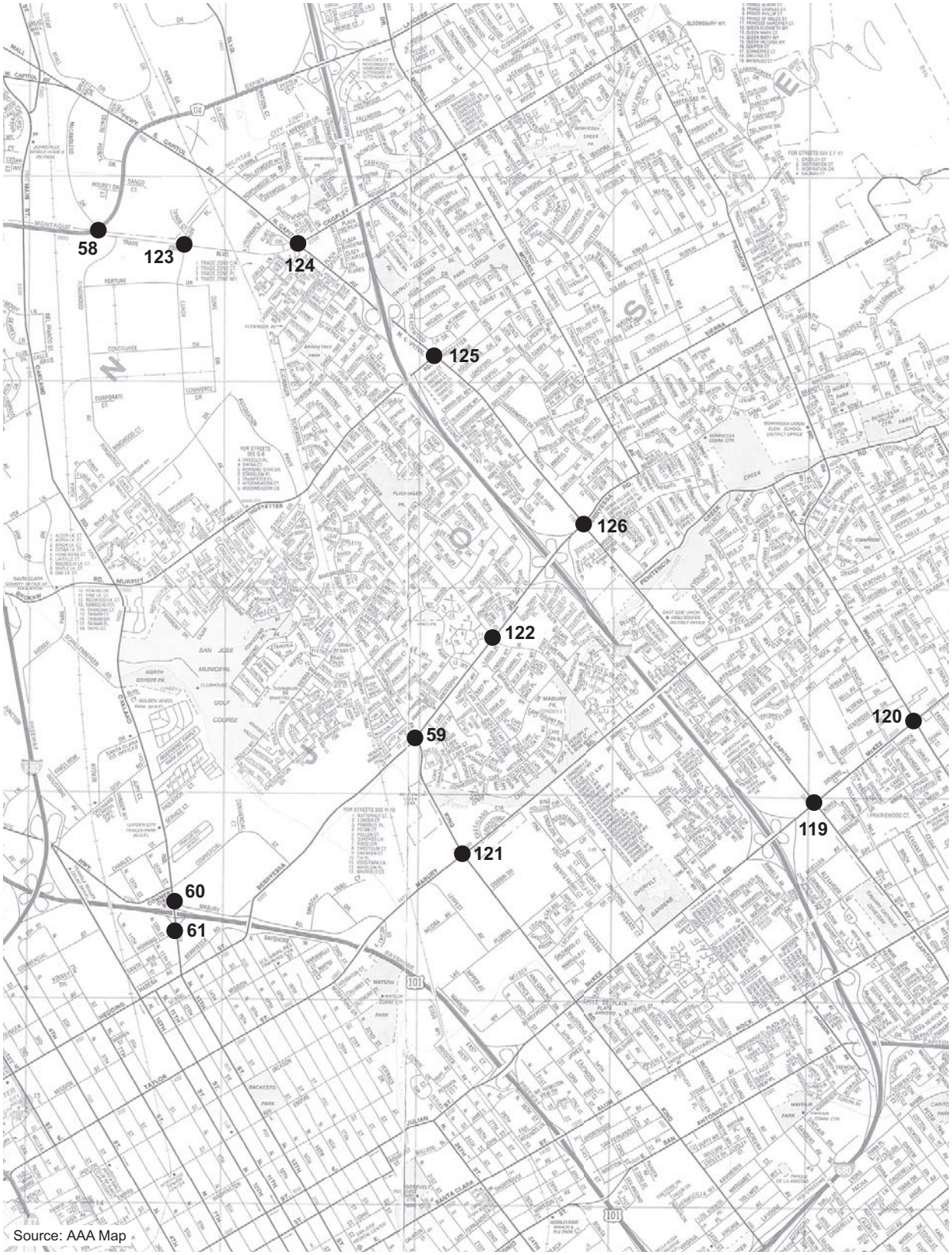
Source: AAA Map

Figure 3C

OTHER CITY OF SAN JOSE STUDY INTERSECTIONS

North San Jose Traffic Impact Fee

Hexagon
Transportation Consultants, Inc.



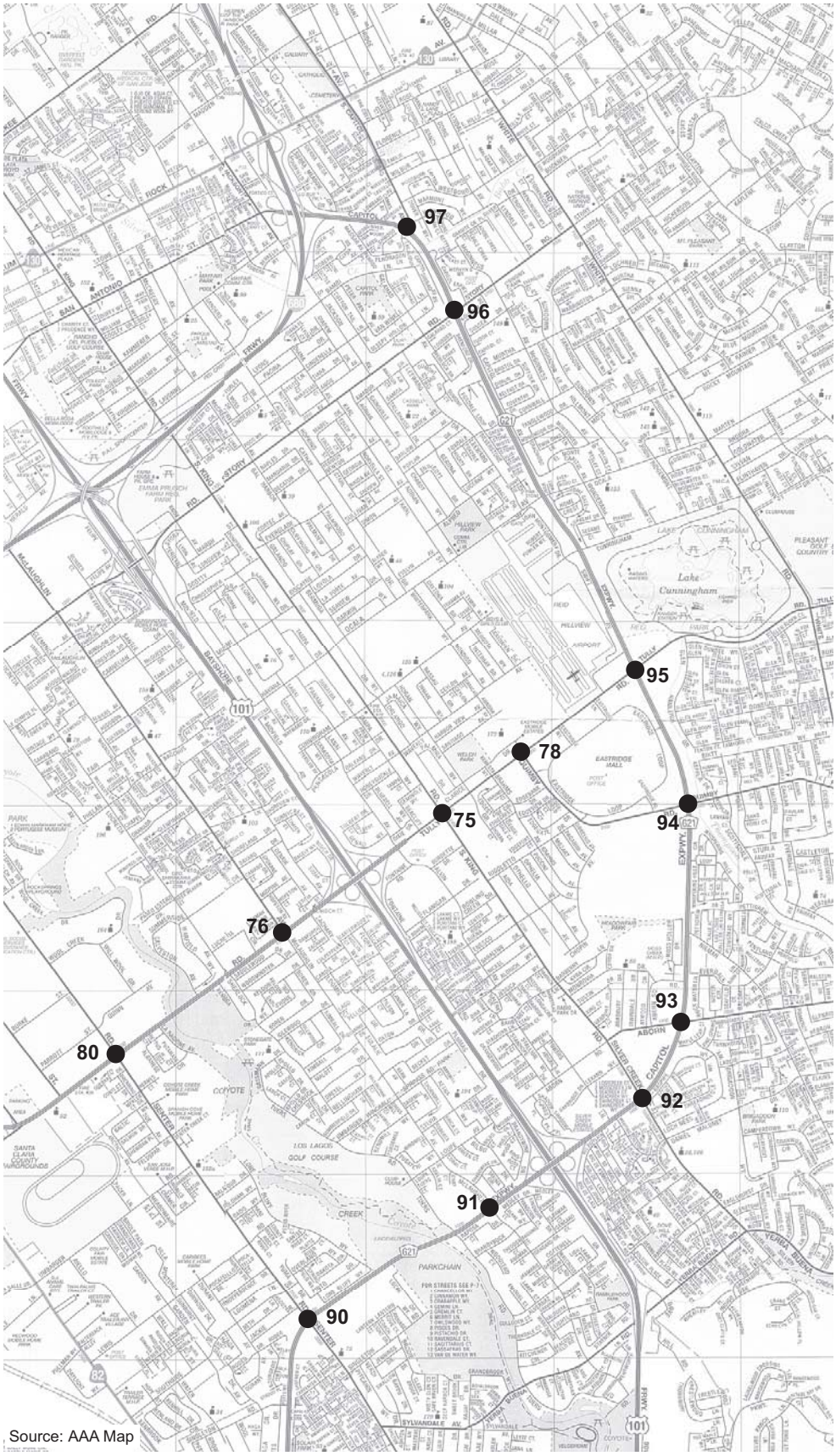
Source: AAA Map

Figure 3D

OTHER CITY OF SAN JOSE STUDY INTERSECTIONS

North San Jose Traffic Impact Fee

Hexagon
Transportation Consultants, Inc.



Source: AAA Map

Figure 3E

OTHER CITY OF SAN JOSE STUDY INTERSECTIONS

North San Jose Traffic Impact Fee

Hexagon
Transportation Consultants, Inc.

2.
North San Jose Future Growth Analysis

Intersection Levels of Service Results and Comparison

Intersection levels of service calculations were conducted as part of the "*North San Jose Development Policy*" traffic study prepared by Hexagon Transportation Consultants Inc, January 2005. Results of the analysis indicate that 18 intersections located within North San Jose and 34 other City of San Jose intersections located outside of North San Jose are projected to operate at LOS E or worse. The North San Jose development will impact 12 of the 18 deficient intersections within North San Jose and 21 of the 34 other intersections. Improvements have been identified to mitigate or reduce the impacts of the North San Jose development on 10 of the 12 intersections impacted within North San Jose and 12 of the 21 intersections located outside of North San Jose. The proposed improvements are intended to enhance circulation within and to North San Jose. Nevertheless, 18 intersections within North San Jose and 27 outside of North San Jose will continue to operate at unacceptable levels according to the City's Level of Service Policy.

Under existing conditions, 25 of the study intersections in San Jose are operating at unacceptable levels. The facilities within North San Jose are allowed to operate at deficient levels under the current development policy for North San Jose. Those intersections currently operating at unacceptable levels outside of North San Jose have deteriorated due to the inability to implement feasible physical improvements. As stated above, even with the proposed improvements to support the North San Jose development, a total of 45 intersections will continue to operate at unacceptable levels. When compared to the 25 intersections currently operating at unacceptable levels, ithe improvements implemented through the collection of the traffic impact fees from new industrial and residential development and City contribution will not be addressing existing deficiencies, but will be accommodating, to the extent feasible, the future planned growth of North San Jose.

A comparison of the number of intersections operating at unacceptable levels is summarized in Table 1. Table 2 presents the operating levels of each of the intersections projected to operate at unacceptable levels and/or be impacted by the North San Jose development.

Table 1
Intersection Level of Service Comparison of Deficient Intersections

Intersection Location	Existing Conditions	Project Conditions	Project Conditions with Improvements
Within North San Jose	5	18	18
Outside of North San Jose	20	34	27
Total	**25**	**52**	**45**

North San Jose Roadway Improvements

The anticipated development levels and associated increase in traffic volumes will significantly impact the North San Jose transportation system. As such, significant roadway system improvements will be required to accommodate the future demands brought about by the proposed development of the North San Jose area. Each of the planned improvements is described below and presented in Figure 4. The phasing of the improvements is described in detail in the Area Development Policy and the EIR.

Roadway Improvements

In addition to the individual intersection improvements described below, several major roadway improvements in and surrounding the North San Jose area will be required to serve the projected traffic volumes of the North San Jose development. The improvements consist of street widenings, construction of new streets, and interchange reconstruction/construction. The following are the major roadway improvements that will enhance access to North San Jose and provide for better circulation within North San Jose:

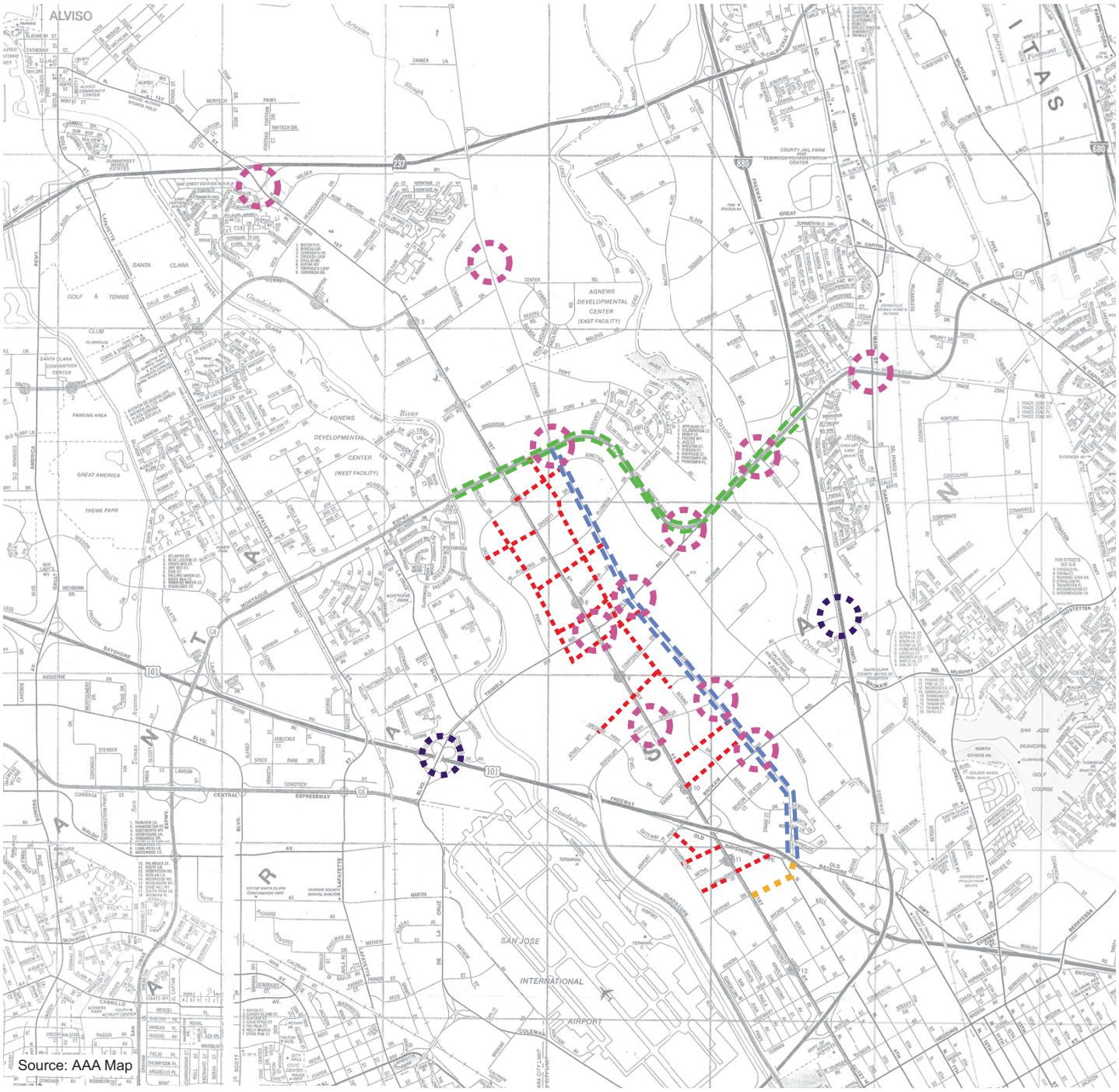
- ***Montague Expressway Widening*** – As part of the Tier 1-A improvements to Montague Expressway identified by the County, Montague Expressway will be widened within North San Jose from six to eight lanes between North First Street and I-880. The project will also include the improvement of the I-880 interchange to a partial cloverleaf interchange and intersection improvement at River Oaks/Plumeria and McCandless/Trade Zone. Tier 1-B improvements to Montague Expressway include the construction of a flyover from westbound Montague Expressway to southbound Trimble Road.

- ***Zanker Road Widening*** – Zanker Road runs from Old Bayshore Highway north into Alviso. It is currently two lanes in each direction between Old Bayshore Highway and Montague Expressway. Between Montague Expressway and SR 237 it widens to six lanes, three lanes in each direction. The planned widening will consist of widening the roadway to a minimum of 120 feet between Old Bayshore Highway and Montague Expressway to accommodate the addition of through lanes in each direction. The widening will provide an alternative north/south route to North First Street. This widening will require a General Plan Amendment to designate the entire length of Zanker Road, south of SR 237 as a major arterial.

- ***North San Jose Grid Streets*** – To facilitate the efficient circulation of traffic within North San Jose, several new local streets will be constructed to form a "grid system" of streets. The streets, as shown in Figure 21, will serve future development and provide connections to all major arterials in North San Jose. The new streets will generally be two-lane roadways connecting to the major roadways within North San Jose such as Montague Expressway, Trimble Road, North First Street, and Zanker

Table 2
Intersection Levels of Service

Study Number		Peak Hour	Year 2000 Existing Ave. Delay/a/	Year 2000 Existing LOS	Project Conditions Ave. Delay/a/	Project Conditions LOS	ProjectConditions Mitigated Ave. Delay/a/	ProjectConditions Mitigated LOS
North San Jose Intersections								
5	North First Street and Montague Expressway	AM	63.3	E	100.6	F	100.6	F
		PM	119.7	F	133.1	F	133.1	F
6	Zanker Road and Montague Expressway	AM	42.5	D	**66.8**	**E**	66.8	E
		PM	54.9	D	**163.9**	**F**	163.9	F
7	River Oaks Parkway and Montague Expressway	AM	44.8	D	**107.4**	**F**	107.4	F
		PM	52.9	D	**143.5**	**F**	143.5	F
9	McCarthy Boulevard and Montague Expressway	AM	48.2	D	190.5	F	190.5	F
		PM	119.3	F	304.1	F	304.1	F
10	Old Oakland Road and Montague Expressway	AM	78.0	E	**173.5**	**F**	173.5	F
		PM	88.8	F	**114.4**	**F**	114.4	F
11	De La Cruz Boulevard and Trimble Road	AM	33.8	C	34.8	C	34.8	C
		PM	53.4	D	63.0	E	63.0	E
12	North First Street and Trimble Road	AM	44.7	D	**86.2**	**F**	86.2	F
		PM	50.0	D	**101.0**	**F**	101.0	F
13	Zanker Road and Trimble Road	AM	35.0	D	**63.7**	**E**	63.7	E
		PM	53.8	D	**210.4**	**F**	210.4	F
14	North First Street and Brokaw Road	AM	46.9	D	89.6	F	89.6	F
		PM	44.6	D	96.2	F	96.2	F
16	Zanker Road and Brokaw Road	AM	49.0	D	**96.1**	**F**	96.1	F
		PM	59.7	E	**105.2**	**F**	105.2	F
19	Old Oakland Road and Brokaw Road	AM	52.4	D	**79.0**	**E**	79.0	E
		PM	43.5	D	**72.3**	**E**	72.3	E
22	Lundy Avenue and Murphy Avenue	AM	45.0	D	50.7	D	50.7	D
		PM	43.9	D	**60.0**	**E**	60.0	E
24	Zanker Road and Tasman Drive	AM	40.5	D	43.4	D	43.4	D
		PM	44.7	D	**60.3**	**E**	60.3	E
27	North First Street and Charcot Avenue	AM	36.0	D	80.5	F	80.5	F
		PM	33.7	C	**65.1**	**E**	65.1	E
28	North First Street and Old Bayshore Highway	AM	41.4	D	37.8	D	37.8	D
		PM	67.2	E	79.8	E	79.8	E
38	North First Street and Skyport Drive	AM	14.7	B	**105.1**	**F**	81.3	F
		PM	21.7	C	51.2	D	86.5	F
43	Zanker Road and Charcot Avenue	AM	28.6	C	**56.6**	**E**	56.6	E
		PM	27.6	C	**61.0**	**E**	61.0	E
49	Orchard Parkway and Guadalupe Parkway	AM	15.2	B	34.3	C	34.3	C
		PM	20.2	C	61.0	E	61.0	E
Other San Jose CMP Intersections								
58	Trade Zone Boulevard and Montague Expressway	AM	45.8	D	54.0	D	52.7	D
		PM	75.8	E	**124.5**	**F**	70.0	E
59	Lundy Avenue and Berryessa Road	AM	53.3	D	**55.2**	**E**	49.9	D
		PM	44.3	D	**60.6**	**E**	50.9	D
60	Oakland Road and US 101 (N)	AM	48.0	D	**89.8**	**F**	47.8	D
		PM	23.0	C	**56.4**	**E**	22.6	C
61	Oakland Road and US 101 (S)	AM	25.6	C	22.0	C	20.3	C
		PM	35.0	C	**95.1**	**F**	50.6	D
76	McLaughlin Avenue and Tully Road	AM	46.5	D	46.0	D	46.0	D
		PM	62.6	E	64.2	E	64.2	E
83	Alamden Expressway and Branham Lane	AM	69.0	E	67.5	E	67.5	E
		PM	49.0	D	51.4	D	51.4	D



Legend

- = North San Jose Grid Streets
- = Montague Widening
- = Zanker Widening
- = Zanker Skyport Connection
- = Interchange Improvement
- = Intersection Improvement

Hexagon Transportation Consultants, Inc.

Figure 4

NORTH SAN JOSE ROADWAY/ INTERSECTION IMPROVEMENTS

North San Jose Traffic Impact Fee

Road. The additional roadways will serve to alleviate congestion along the major arterials in the area. Included within the system of streets will be the extensions of Zanker Road to Skyport Drive and Component Drive to Orchard Parkway. Orchard Parkway will also be connected between Trimble Road and Atmel Way.

- ***Zanker Road to Skyport Drive Connection*** – The current intersection of Fourth Street and Old Bayshore Road will be replaced by a new partial interchange with US 101 that will provide for the extension of Zanker Road to Skyport Drive and Fourth Street. Currently, ramps only provide access to southbound US 101 from Fourth Street/Old Bayshore and Old Bayshore/Zanker Road from US 101 northbound with no connection over US 101. The new interchange will allow for the connection of Zanker Road to Skyport Drive as well as access to southbound US 101 from Zanker Road and Fourth Street/Old Bayshore. Access to Fourth Street/Skyport Drive and Zanker Road form US 101 northbound also will be provided.

- ***US 101 and Trimble Road Interchange*** – Some improvements at the US 101 and Trimble Road interchange currently are under construction and others are planned but unfunded. Several improvements will be made to the existing interchange including the elimination of the southbound loop off-ramp to eastbound Trimble, construction of a new southbound diagonal ramp that will serve both eastbound and westbound Trimble, and reconstruction of the southbound diagonal on-ramp and southbound and northbound loop on-ramps. The northbound US 101 loop-off-ramp to westbound Trimble Road also will be eliminated and replaced by a new northbound diagonal off-ramp that will serve both eastbound and westbound Trimble. The northbound diagonal ramp will be fed by a new collector road that will exit US 101 south of SR 87. The existing exit from US 101 is north of SR 87 and causes operational weaving problems.

- ***Charcot Avenue Extension*** – Charcot Avenue currently begins at North First Street, as a transition from Guadalupe Parkway, and runs east to its terminus at O'Toole Avenue. The planned overpass will cross I-880 and provide for the extension of Charcot Avenue to Old Oakland Road. The connection of Charcot Avenue to Old Oakland Road will provide an alternative east/west route to the already congested roadways of Brokaw Road and Montague Expressway. In order to provide space for bicycle and pedestrian access the overpass will provide tow travel lanes, one in each direction. This will require a General Plan Amendment to reclassify the connection from 4-lanes to 2-lanes.

- ***Trimble Road/Montague Expressway Flyover*** – The intersection of Trimble Road with Montague Expressway serves as a major access point into and out of North San Jose. It currently experiences large vehicle queues for the westbound Montague Expressway to southbound Trimble Road movement. The movement is currently served by three left-turn lanes. County improvement plans identify the construction of a flyover to serve the movement. With the construction of the flyover all other movements at the intersection should improve.

- ***McCarthy Boulevard/O'Toole Avenue/Montague Expressway Interchange*** – The intersection of McCarthy Boulevard/O'Toole Avenue with Montague Expressway serves as a major access point into and out of North San Jose to and from I-880. The intersection also serves portions of Milpitas. As such, major congestion is experienced on all approaches to the intersection. County improvement plans identify the construction of a "square-loop" interchange to replace the at-grade intersection as a Tier 1-B improvement. The interchange will eliminate the conflicting movements at the intersection and allow for uninterrupted flow along Montague Expressway to I-880.

- ***Mabury Interchange*** – To alleviate congested condition at the Old Oakland Road and McKee Road interchanges with US 101, a new interchange is planned at Mabury Road. Mabury Road currently overpasses US 101, but no access to the freeway is provided.

Intersection Improvements

In addition to the major roadway improvements described above, several smaller intersection improvements also will be constructed as part of the project, or as mitigation to project impacts. The improvements were determined based on the need to improve intersection levels of service to acceptable levels to the maximum extent feasible. The improvements described below are preliminary designs only, and details about specific right-of-way and design features will be worked out when the improvements are programmed. Each of the proposed intersection improvements is described below and locations shown in Figure 5.

(2) North First Street and SR 237 (South) - The necessary improvement to maintain acceptable levels of service at this intersection consist of the addition of a third northbound through lane. The addition of the through lane will require that the existing overpass of SR 237 be widened.

(6) Zanker Road and Montague Expressway - As previously described, Montague Expressway will be widened from six-lanes to eight-lanes. The project will also add second northbound and southbound left-turn lanes at Zanker and Montague.

(7) River Oaks Parkway and Montague Expressway - As previously described, Montague Expressway will be widened from six-lanes to eight-lanes.

(8) Trimble Road and Montague Expressway - As previously described, Montague Expressway will be widened from six-lanes to eight-lanes and a flyover constructed to serve the westbound Montague Expressway to southbound Trimble Road movement.

(9) McCarthy Boulevard and Montague Expressway - As previously described, a "square-loop" interchange to replace the at-grade will be constructed.

(10) Old Oakland Road and Montague Expressway - Needed improvements consist of the addition of a second southbound left-turn lane on Old Oakland Road.

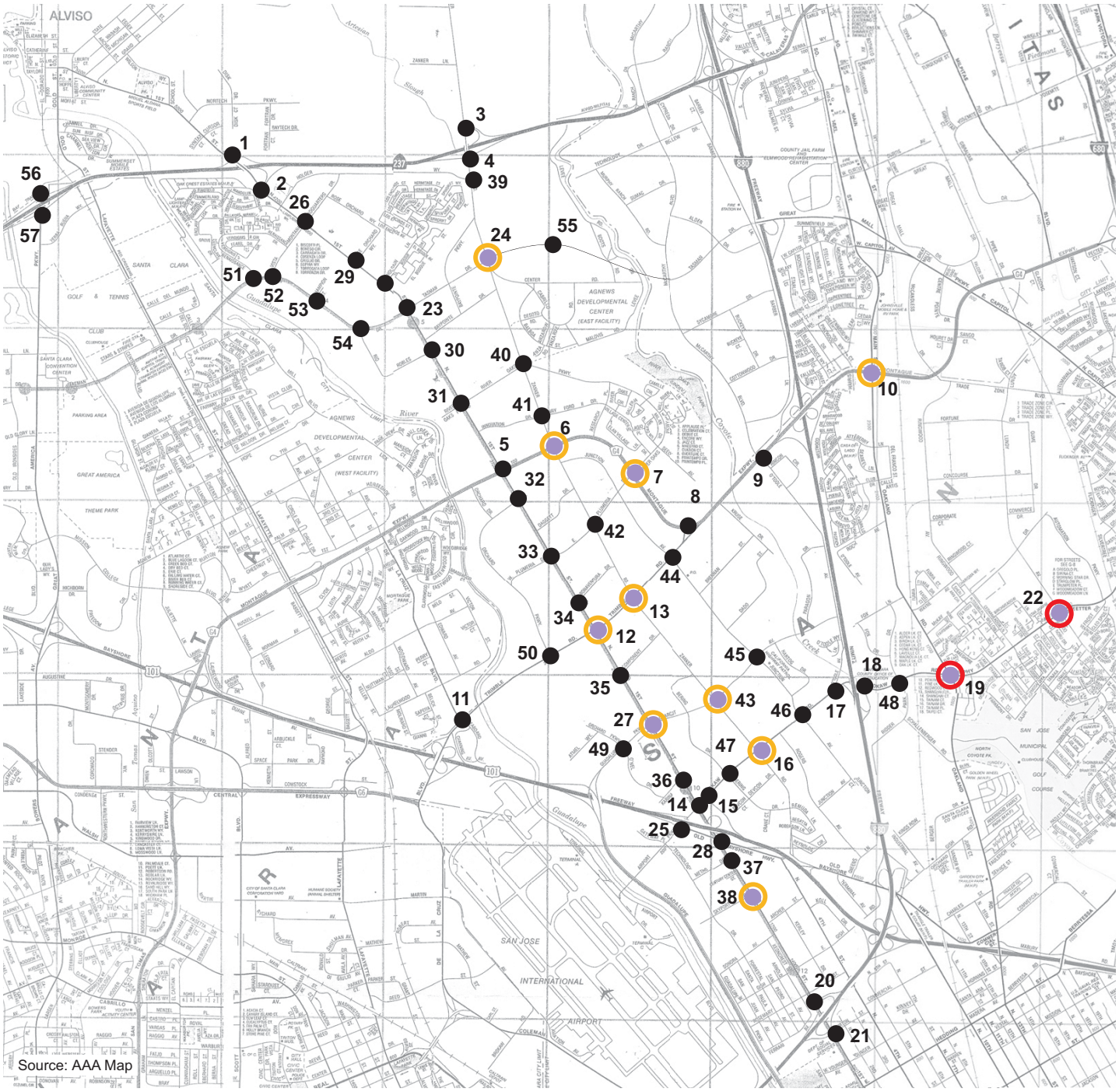
(12) North First Street and Trimble Road - Needed improvements consist of the addition of a second eastbound left-turn lane and exclusive westbound right-turn lane on Trimble Road. The improvements may require acquisition of a minimal amount of right-of-way.

(13) Zanker Road and Trimble Road - Needed improvements consist of the addition of second eastbound and southbound left-turn lanes. The improvements will fit within the existing right-of-way, but will require reconstruction of the existing medians.

(16) Zanker Road and Brokaw Road - Needed improvements consist of the addition of second eastbound, northbound and southbound left-turn lanes. The improvements may be constructed as part of the Zanker Road widening project described above.

(24) Zanker Road and Tasman Drive - Needed improvements consist of the addition of second eastbound and westbound left-turn lanes on Tasman Drive. The improvements may require the acquisition of right-of-way due to the LRT line running within the median along Tasman Drive.

(27) North First Street and Charcot Avenue - Needed improvements consist of the addition of exclusive westbound and eastbound right-turn lanes on Charcot Avenue and a second southbound left-turn lane on First Street. The improvements may require the acquisition of right-of-way due to the LRT line running within the median along First Street.



= Project Impact

= Improved but Still Unacceptable

= No Feasible Improvements Possible

Figure 5

NORTH SAN JOSE PROJECT IMPACTS AND IMPROVEMENTS

North San Jose Traffic Impact Fee

Hexagon Transportation Consultants, Inc.

(37) North First Street and Metro Drive - Needed improvements consist of the addition of a second eastbound left-turn lane. The improvement will fit within the existing right-of-way and will require restriping and possibly signal modifications.

(43) Zanker Road and Charcot Avenue - Needed improvements consist of the addition of second left-turn lanes on all approaches and widen Charcot Avenue from two-lanes to four-lanes. The improvements will not fit within the existing right-of-way, but may be included as part of the Zanker Road widening project.

(45) Junction Avenue and Charcot Avenue - Needed improvements consist of the addition of second eastbound and westbound left-turn lanes and widen both Charcot Avenue and Junction Avenue from two to four lanes.

(47) Bering Avenue and Brokaw Road - Needed improvements consist of the addition of a second northbound left-turn lane and separate southbound left-turn lane. The improvements may require the acquisition of a minimal amount of right-of-way.

Other City of San Jose Improvements

This section discusses any impacts associated with the proposed development levels for North San Jose on intersections outside of North San Jose. The results of the level of service analysis show that 12 other City of San Jose study intersections located outside of North San Jose may have feasible improvements that can be accommodated. It was determined that there are no feasible improvements that can be made at eight of the 20 impacted intersections. Each of the intersections and recommended mitigation measures are described below with locations shown in Figure 6.

(58) Trade Zone Boulevard and Montague Expressway - The necessary improvements at this intersection will consist of the construction of second northbound and southbound left-turn lanes and an eastbound free-right-turn lane.

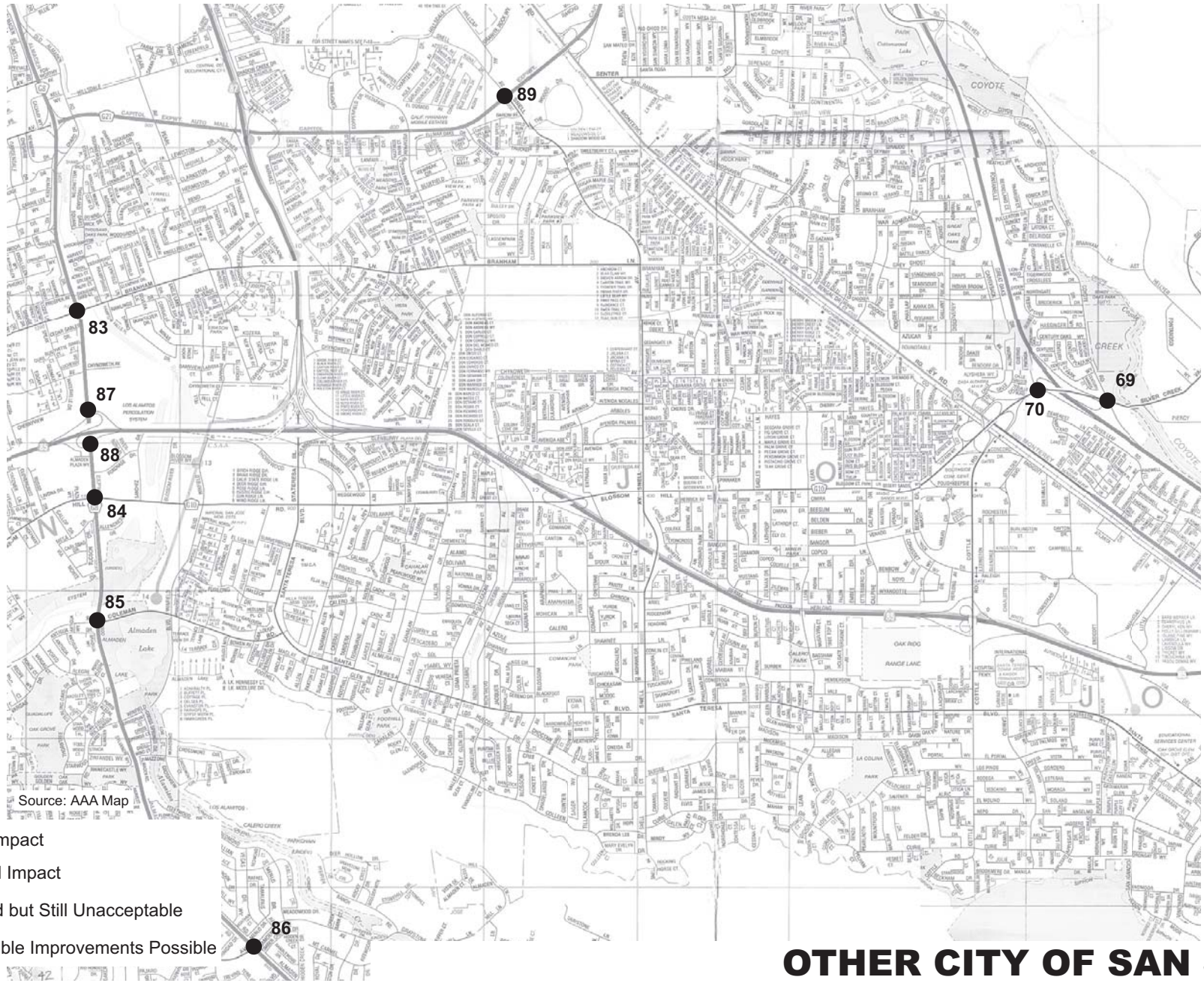
(59) Lundy Avenue and Berryessa Road - The necessary improvements will consist of the addition of second eastbound and westbound left-turn lanes. The improvements will require the acquisition of right-of-way.

(60) Oakland Road and US 101 (North) - The necessary improvement will consist of the addition of a second southbound right-turn lane.

(61) Oakland Road and US 101 (South) - The necessary improvement will consist of the reconstruction of the interchange to include six-lanes on the overpass.

(97) Capitol Expressway and Capitol Avenue - The necessary improvement will consist of the addition of a separate eastbound left-turn lane. The improvement will fit within the existing right-of-way, but will require restriping and signal modifications.

(98) San Tomas Expressway and Stevens Creek Boulevard - The necessary improvement will consist of the widening of San Tomas Expressway from six to eight lanes as identified in the County Expressways Study as a Tier 1-A improvement.



= Project Impact

= Mitigated Impact

= Improved but Still Unacceptable

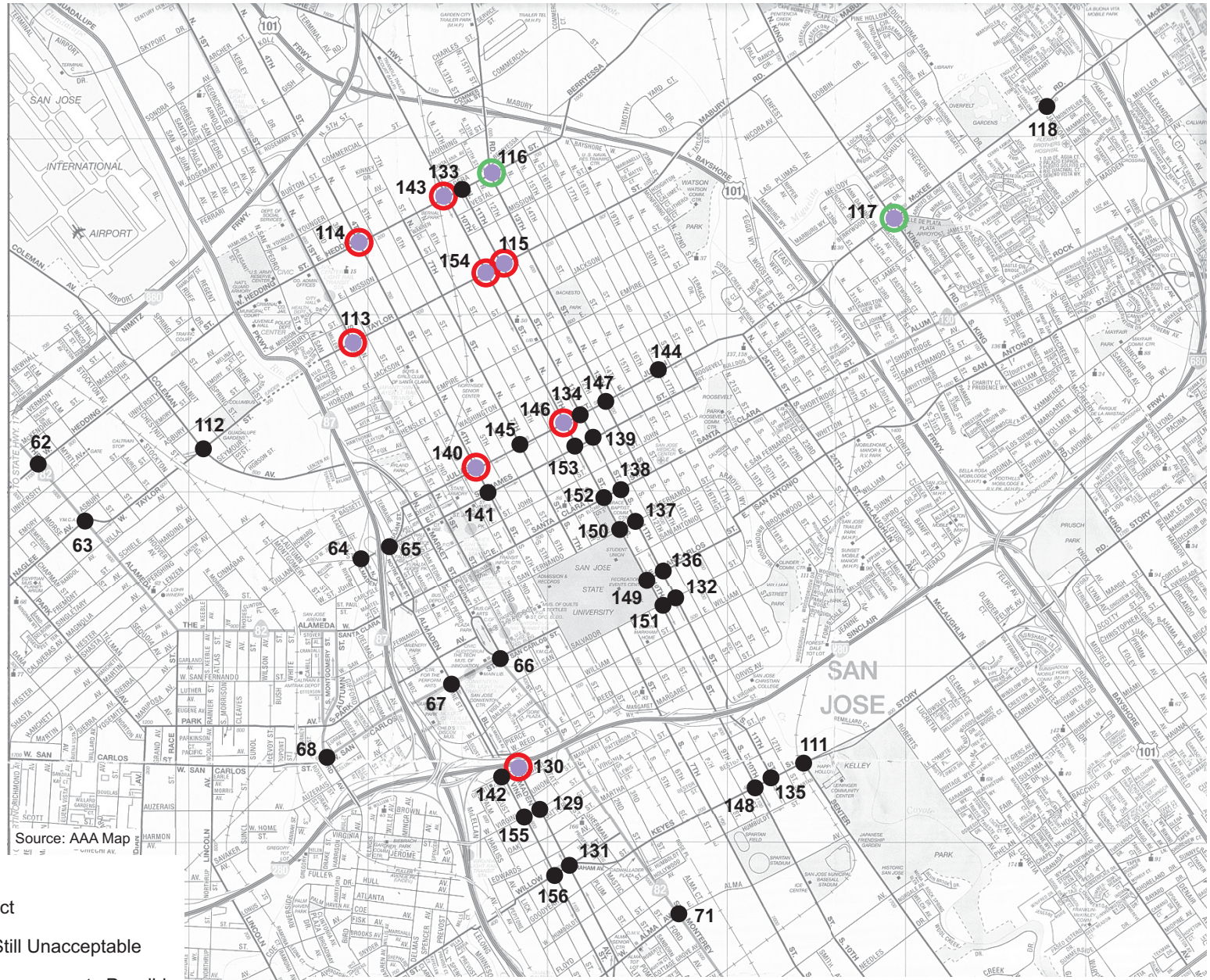
= No Feasible Improvements Possible

Figure 6A

OTHER CITY OF SAN JOSE PROJECT IMPACTS AND IMPROVEMENTS

North San Jose Traffic Impact Fee

Hexagon Transportation Consultants, Inc.



= Project Impact

= Mitigated Impact

= Improved but Still Unacceptable

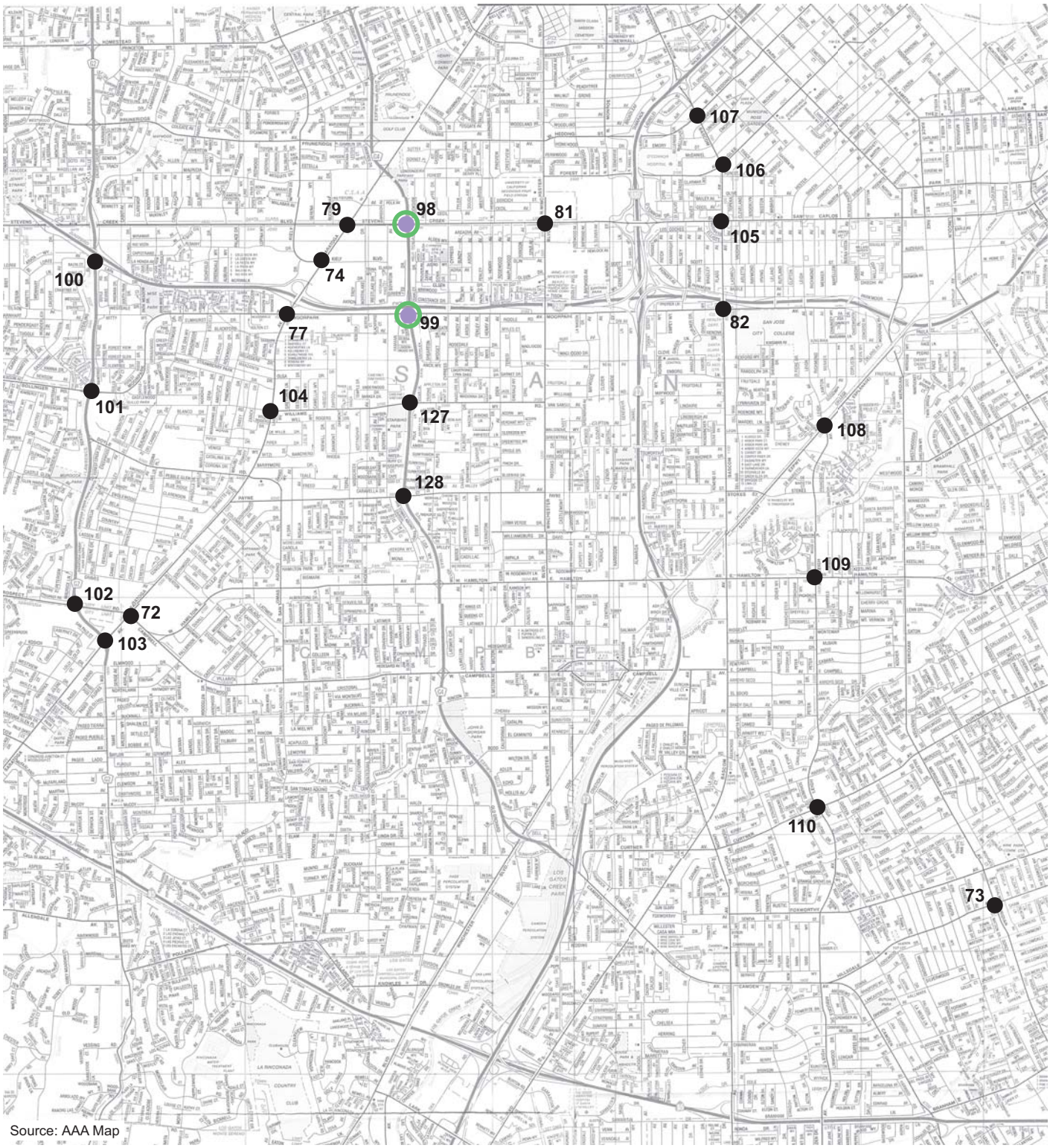
= No Feasible Improvements Possible

Figure 6B

OTHER CITY OF SAN JOSE PROJECT IMPACTS AND IMPROVEMENTS

Hexagon Transportation Consultants, Inc.

North San Jose Traffic Impact Fee



Source: AAA Map

● = Project Impact

◯ = Mitigated Impact

◯ = Improved but Still Unacceptable

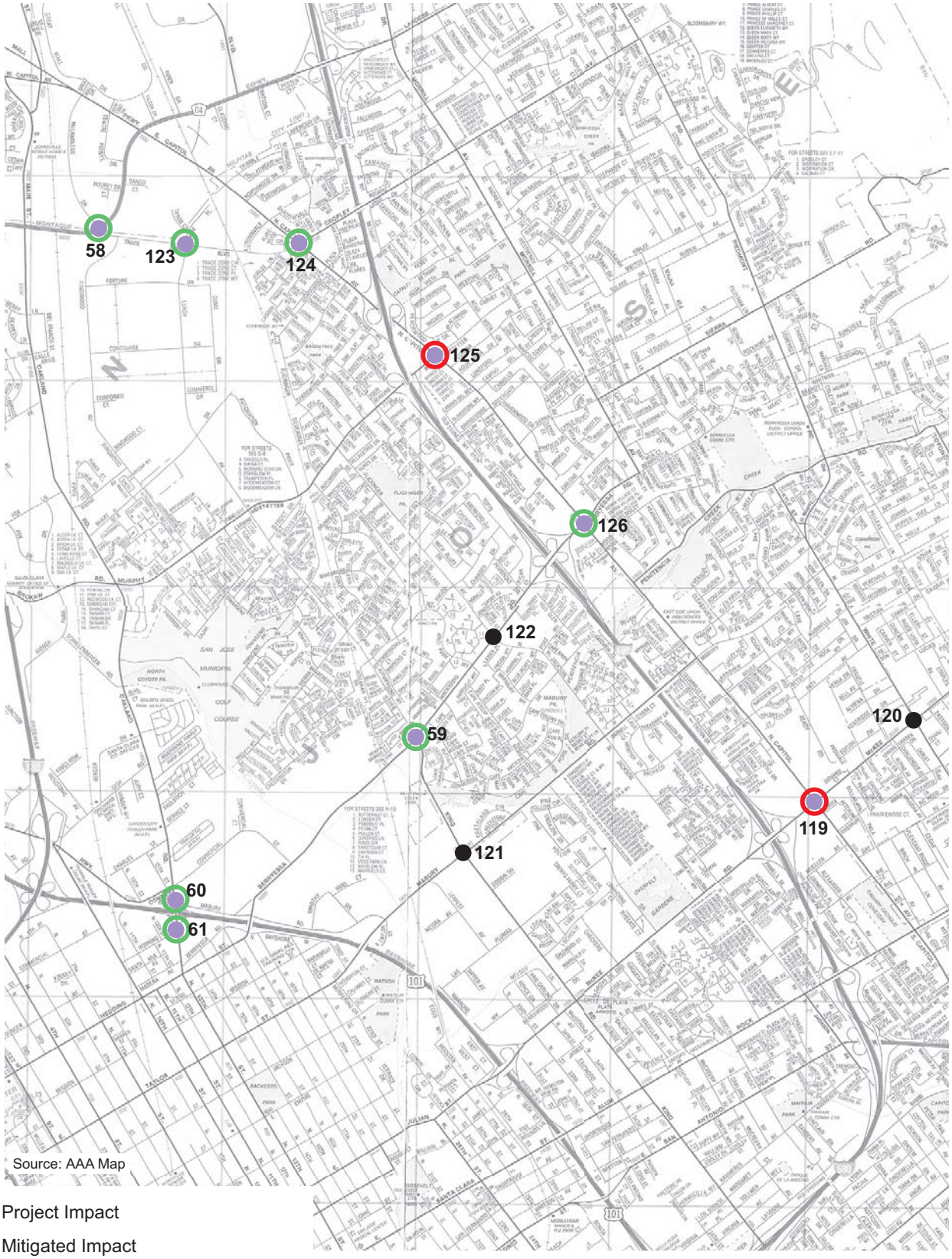
◯ = No Feasible Improvements Possible

Figure 6C

OTHER CITY OF SAN JOSE PROJECT IMPACTS AND IMPROVEMENTS

Hexagon Transportation Consultants, Inc.

North San Jose Traffic Impact Fee



Source: AAA Map

= Project Impact

= Mitigated Impact

= Improved but Still Unacceptable

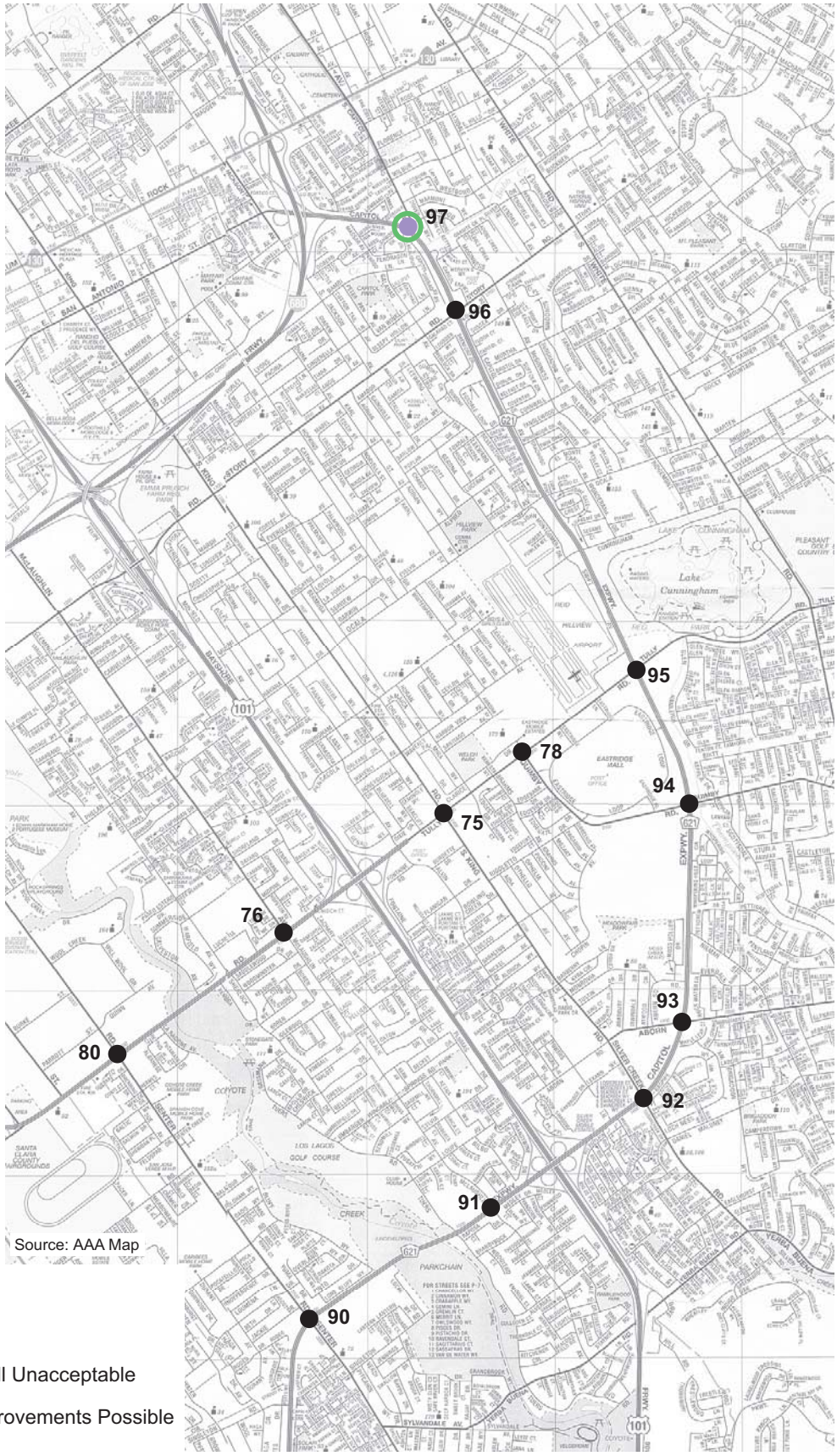
= No Feasible Improvements Possible

Figure 6D

OTHER CITY OF SAN JOSE PROJECT IMPACTS AND IMPROVEMENTS

North San Jose Traffic Impact Fee

Hexagon Transportation Consultants, Inc.



● = Project Impact

○ = Mitigated Impact

○ = Improved but Still Unacceptable

○ = No Feasible Improvements Possible

Figure 6E

OTHER CITY OF SAN JOSE PROJECT IMPACTS AND IMPROVEMENTS

North San Jose Traffic Impact Fee

Hexagon Transportation Consultants, Inc.

(99) San Tomas Expressway and Moorpark Avenue - Possible improvements include the addition of a second southbound left-turn lane. The improvement will fit within the existing right-of-way, but will require restriping and signal modifications.

(116) Thirteenth Street and Hedding Street - The necessary improvements will consist of the addition of second eastbound and westbound left-turn lanes. The improvements will require the acquisition of right-of-way.

(117) King Road and McKee Road - The necessary improvement will consist of the addition of second eastbound and westbound left-turn lanes and a separate southbound right-turn lane. The improvements will require the acquisition of right-of-way.

(123) Lundy Avenue and Trade Zone Boulevard - The necessary improvement will consist of the addition of a second westbound left-turn lane. The improvement will fit within the existing right-of-way, but will require restriping and signal modifications.

(124) Capitol Avenue and Cropley Avenue - The necessary improvement will consist of the addition of a second westbound left-turn lane. The improvement will fit within the existing right-of-way, but will require restriping and signal modifications.

(126) Capitol Avenue and Berryessa Road - The necessary improvement will consist of the addition of a second westbound left-turn lane. The improvement will fit within the existing right-of-way, but will require restriping and signal modifications.

Couplet Conversion Intersections and Traffic Calming

The North San Jose traffic analysis showed that the proposed development will significantly increase the demand for travel through downtown San Jose and the adjacent neighborhood to the east. These areas currently have a system of one-way streets that facilitate the movement of regional traffic through the area. Because of the impact of through traffic on neighborhood livability, the City of San Jose has adopted a program to discourage through traffic and speeding by converting the one-way streets to two-way operation. Though the conversions reduce vehicle speeds and through traffic in the affected neighborhoods, the reduced the capacity of the streets deteriorates levels of service as a trade off. The proposed North San Jose development will significantly impact the need for the one-way to two-way conversions due to the addition of project traffic. Based on the City's Level of Service Policy 5-3, which allows for alternate improvement measures for projects whose required traffic mitigation will result in a substantial adverse impact on an affected neighborhood, the project will implement alternative measures to off-set the level of service impacts. Therefore, the traffic impact fee program includes a contribution of $25 million toward the total cost of the conversions as well as traffic calming measures.

Transit Service Improvements

The planned growth within the North San Jose area will require that the already extensive transit system within the North San Jose area be enhanced. The backbone of the transit service in North San Jose is the light rail system that operates along North First Street and Tasman Drive. In addition, bus service is provided primarily along Tasman Drive, Montague Expressway and Trimble Road. According to model estimates, the demand for transit will greatly increase from about 8,200 without the project to 44,000 riders a day under project conditions.

In particular, the analysis of the effects of the project on the Light Rail lines that serve the North San Jose area indicate that the project will impact several lines. Capacity thresholds per light rail car established by the VTA were used for the analysis. VTA's impact criteria is based on rider comfort level not system capacity. This means the capacity of each of the cars is actually greater than assumed, but it will require that more commuters than currently desirable stand during their travel. However the project proposes improvements that will improve rider comfort as part of their overall transit experience.

The high density transit oriented proposed project development plan characterized by mixed land uses and high rise buildings along the North First Street creates opportunities for strong transit demand. The following measures will serve to meet anticipated transit service demands and comfort:

- Enhancement of bus service to each of the intensified development areas of North San Jose and along the new grid system streets.

- Coordination of extensive shuttle services between employment, transit stations, and large residential areas.

- Implementation of planned specific improvements as described below

VTA Specific Transit Improvements

Station and Bus Stop Related Improvements

- Specialized passenger shelters and bus/shuttle stop improvements including: curb bulbouts depending on location and new [additional] locations

- Station Improvements:
  - LRT northbound shelters at Orchard, Bonaventura, Component, (in the project area) and Tasman (lengthen existing plus SB shelter) and River Oaks outside the project area
  - Intersection and crosswalk improvements; lane or intersection narrowing, including reducing curve radii and/or curb bulbouts; sidewalks along median from intersections to station platform
  - Lighting, furniture and landscaping at LRT stations, bus stops and key pedestrian locations
  - Station platform improvements

- Other stop and station amenities such as sidewalks (locations) or sidewalk widening and lengthening
- Self-cleaning restrooms (2-4 locations)
- Real-time information infrastructure (on LRVs and at 17 stations and stops.)
- Duck outs (most important @ Tasman station)
- Shuttles between residential areas, businesses and transit stops/stations.
- New bus/shuttle stop locations (noted around Tasman LRT station) including dedication of ROW

Light Rail Specific

- Bi-directional full priority with ability to cascade calls for green signals for LRT along North First Street

- LRT operations capital improvements such as, but not limited to:
  - Trackway improvements

- Switches
- Tail/storage/layover tracks
- Platform improvements

Pedestrian and Bicycle Facility Enhancements

With the large amount of planned development, increases in pedestrians and bicyclists are expected along with increased auto traffic. It will be desirable to implement pedestrian bicycle improvements to reduce auto travel. Existing pedestrian facilities will need to be improved and future development designed to better serve pedestrians. As development progresses within North San Jose, the following pedestrian and bicycle facility enhancements will be needed:

- Construct the new grid system streets to accommodate and encourage bicycles and pedestrians.

- Provide for continuous bicycle connections throughout North San Jose. Bicycle facilities should be provided on all major streets where feasible. Possible locations of future bicycle facilities are shown in Figure 7.

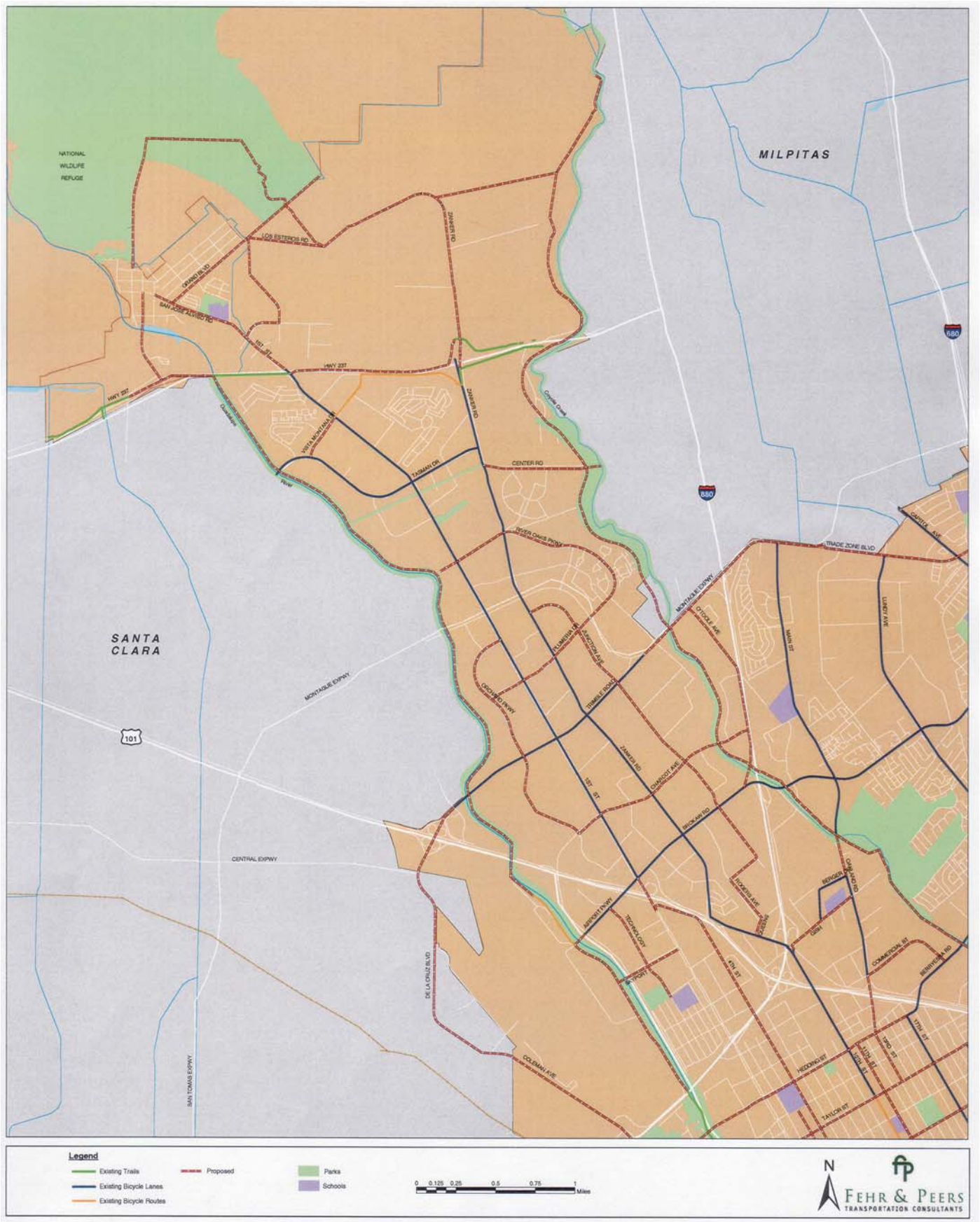


Figure 7

POTENTIAL FUTURE BICYCLE FACILITIES

Hexagon
Transportation Consultants, Inc.

North San Jose Traffic Impact Fee

4.
Improvement Costs

The purpose of this chapter is to describe the estimated costs of each of the identified improvements in the previous chapter.

Summary of Improvement Costs

The cost of roadway and intersection improvements in North San Jose as well as other parts of the city where it is expected that traffic associated with North San Jose development would have adverse effects totals approximately $519 million. A portion of these costs are planned to be funded by the City of San Jose and other funding sources totaling approximately $59 million. The proposed traffic impact fee for North San Jose should fund the majority of the cost of improvements. Table 3 itemizes the associated costs of each of the transportation improvement projects. Detailed cost estimates are presented in Appendix A.

Table 3
Improvement Cost Summary

Location (Type)	Cost
North San Jose Major Roadway Improvements	
Montague Expressway Widening	$18,000,000
Zanker Road to Skyport Drive Connection	$64,000,000
Charcot Avenue Extension	$32,000,000
Zanker Road Widening	$49,000,000
US 101/Trimble Road Interchange	$27,000,000
Montague Expressway and Trimble Road	$30,000,000
Montague Expressway and McCarthy Boulevard	$68,000,000
Mabury Road Interchange	$43,000,000

Location (Type)	Cost
North San Jose Grid Street System	$55,000,000
Subtotal North San Jose Major Roadway Improvements	**$386,000,000**
North San Jose Intersection Improvements	
North First Street & SR237 (South)	$7,000,000
Zanker Road & Montague Expressway	See Note a
River Oaks Parkway & Montague Expressway	See Note b
Trimble Road & Montague Expressway	See Note c
McCarthy Boulevard & Montague Expressway	See Note d
Old Oakland Road & Montague Expressway	$500,000
North First Street & Trimble Road	$1,000,000
Zanker Road & Trimble Road	See Note a
Zanker Road & Brokaw Road	See Note a
Zanker Road & Tasman Drive	$2,000,000
North First Street and Charcot Avenue	$2,000,000
North First Street and Metro Drive	$250,000
Zanker Road and Charcot Avenue	$2,000,000
Junction Avenue and Charcot Avenue	$1,000,000
Bering Drive and Brokaw Road	$1,000,000
Trade Zone Boulevard & Montague Expressway	$2,175,000
Subtotal North San Jose Intersection Improvements	**$18,925,000**
Other Intersections Outside of North San Jose	
Lundy Avenue and Berryessa Road	$500,000
Oakland Road and US 101 (North/South)	$20,250,000
Capitol Expressway and Capitol Avenue	$250,000
San Tomas Expressway and Stevens Creek Boulevard	$1,300,000
San Tomas Expressway and Moorpark Avenue	$500,000
Thirteenth Street and Hedding Street	$700,000
King Road and McKee Road	$2,025,000
Lundy Avenue and Trade Zone Boulevard	$500,000
Capitol Avenue and Cropley Avenue	$500,000
Capitol Avenue and Berryessa Road	$250,000
Couplet Conversions/Traffic Calming	$25,000,000
Subtotal Intersections Outside of North San Jose	**$51,775,000**

Location (Type)	Cost
Offsetting Action from CMA Immediate Implementation Action List	
Bicycle, Pedestrian Actions and Transit Actions (Bus & LRT Station Improvements)	$62,300,000
Subtotal Immediate Implementation Action Items	**$62,300,000**
Total	**$519,000,000**

Notes:
a – Included as part of the Zanker Road Widening cost.
b – Included as part of the Montague Expressway Widening cost.
c – Included as part of the Montague Expressway and Trimble Road Improvements
d – Included as part of the Montague Expressway and McCarthy Boulevard Improvements

5.
North San Jose Traffic Impact Fee

This section presents the traffic impact fees for future development within North San Jose. The calculation method for the traffic impact fees is presented.

Summary of San Jose Traffic Impact Fees

A portion of the funding for the needed improvements will be contributed by the City of San Jose and other regional programs, but the majority of funding will be collected via a traffic impact fee for all new development within North San Jose. The traffic impact fee is calculated based on proposed development type and size. Collected fees will only be used towards the cost of implementation of the identified improvements outlined in this report. With the exception of retail/commercial land uses, all new development within the North San Jose boundaries will be required to contribute appropriate fees.

The North San Jose traffic impact fee is based on PM peak-hour trip-making characteristics of the particular land use proposed for development in North San Jose. The PM peak hour is used because it is the PM peak hour during which traffic conditions are the worst. The total increase in PM peak hour trips with the anticipated development was estimated to be 41,300, as shown in Table 4. The traffic impact fee is determined by calculating the cost per vehicle trip for the anticipated growth by dividing the total cost of improvements ($519 million minus $59 million = $460 million) by the increase in peak hour trips (41,300) to come up with $11,138 per trip. The cost is then distributed upon each of the land uses based on their trip generating characteristics determined based on the following rates:

Single-Family Residential	0.63 trips per unit
Multi-Family Residential	0.50 trips per unit
Industrial Uses	0.93 trips per 1,000 s.f.

Multiplying the cost per trip figure times each of the rates determines the applicable fee for each land use. Traffic impact fees by land use type are presented in Table 5.

Table 4
North San Jose Trip Estimates

Land Use	Size	Trip Rate
SF Detached	3,530 units	.6279 per unit
MF Attached	28,470 units	.5024 per unit
Industrial	26.7 m.s.f	.9371 per s.f.

Table 5
North San Jose Land Use Traffic Impact Fees

Land Use	Fee	Unit of Measure
SF Detached	$6,994.00	Per dwelling unit
MF Attached	$5,596.00	Per dwelling unit
Industrial	$10.44	Per 1,000 sq. ft. Per sq. ft. equivalent)

In order to completely fund the cost of the improvements at the time of actual construction, the fees indicated in Table 5 should be escalated annually in an amount of 3.3%, which represents the average increase in the Consumer Price Index as reported by the U.S. Department of Labor for the previous 20 years (1985-2004) for the San Francisco-Oakland-San Jose Metropolitan Statistical Area as depicted in Table 6.

Table 6
Consumer Price Index

Year	Annual CPI % Change	Year	Annual CPI % Change
1985	4.2	1995	2.0
1986	3.0	1996	2.3
1987	3.4	1997	3.4
1988	4.4	1998	3.2
1989	4.9	1999	4.2
1990	4.5	2000	4.5
1991	4.4	2001	5.4
1992	3.3	2002	1.6
1993	2.7	2003	1.8
1994	1.6	2004	1.2
20 Year Average = 3% per Year			