DRAFT
SUPPLEMENTAL
ENVIRONMENTAL IMPACT REPORT

COMMUNICATIONS HILL

KAUFMAN & BROAD RESIDENTIAL PROJECT

Volume I of II
SEIR Text

Prepared by the
City of San Jose

November 2000

SAN JOSE
CAPITAL OF SILICON VALLEY

CITY OF SAN JOSÉ, CALIFORNIA

DEPARTMENT OF PLANNING, BUILDING AND CODE ENFORCEMENT
801 NORTH FIRST STREET
SAN JOSE, CALIFORNIA 95110-1795

JAMES R. DERRYBERRY
DIRECTOR

November 9, 2000

Ladies and Gentlemen:

SUBJECT: DRAFT ENVIRONMENTAL IMPACT REPORT FOR A PLANNED DEVELOPMENT REZONING & PREZONING, CITY FILE NO. PDC99-10-083.

The Planning Commission of the City of San José will hold a Public Hearing to consider the Draft Environmental Impact Report (DEIR) prepared for the project described below. A copy of the DEIR is enclosed for your review.

Your comments regarding the significant environmental effects of this project and the adequacy of the DEIR are welcome. Written comments submitted to the Department of Planning, Building and Code Enforcement by 5:00 p.m., December 29, 2000, will be included in the EIR and be considered by the Planning Commission at this Public Hearing. *If you make comments through a state or regional clearinghouse, please send a copy of your comments to the contact person listed below to insure prompt consideration.* If we receive no comments (nor a request for an extension of time) from you by the specified date, we will assume you have none to make.

Project Description and Location: Draft Environmental Impact Report for a Planned Development Prezoning and Rezoning (File No. PDC99-10-083) for the property located at the north side of Hillsdale Avenue opposite the terminus of Vista Park Drive from County and A(PD) Planned Development to A(PD) Planned Development Zoning District to allow up to 765 attached residential dwelling units on approximately 130 gross acres. The project site is located within the Communications Hill Planned Community and Specific Plan.

Council District: 7

Tentative Hearing Date: February 14, 2001

Contact Person: Darryl Boyd, Principal Planner
Department of Planning, Building and Code Enforcement
801 North First Street
San José, CA 95110-1795

Sincerely,

James R. Derryberry
Director of Planning

Darryl Boyd
Deputy

PDC99-10-083 DEIR Cover Ltr.doc

PREFACE

This Supplemental Environmental Impact Report (SEIR) has been prepared by the City of San Jose as the Lead Agency in conformance with the California Environmental Quality Act (CEQA). It evaluates the potential environmental impacts that would occur as a result of a proposal to construct up to 765 residential units, consisting of townhomes, row homes, condominiums and other medium to high-density attached dwellings on an approximately 130 acre site located on Communications Hill, east of State Route 87, in San Jose.

The primary land use policies that apply to the site are contained in the Communications Hill Specific Plan, adopted by the City Council in 1992. The approved Communications Hill Specific Plan provided a comprehensive planning framework for development of a unified, high-density, pedestrian-oriented, urban community with a mix of uses on approximately 400 acres, on and around Communications Hill. The Communications Hill Specific Plan also included a comprehensive design and phasing plan for necessary utilities and services, and identified financing mechanisms for funding them. The planning process for the Communications Hill Specific Plan included the active participation of a citizen's task force, City staff, and a consultant planning team. The property owners within the Specific Plan area were also involved in the formulation of the Specific Plan. The basic land use and policy components of the Specific Plan have been incorporated into the General Plan as a Planned Residential Community (PRC). The PRC establishes the fundamental intent of the City for development of the Specific Plan area.

The Communications Hill Specific Plan EIR (October 1991) evaluated, at a programmatic level, the potential environmental impacts of a high-density residential development such as the one proposed. The 1991 Communications Hill Specific Plan EIR states that subsequent environmental review will be necessary for future, specific development proposals. This SEIR has been prepared to provide the subsequent environmental review.

In particular, this SEIR has been prepared in order to evaluate and address the specific environmental impacts of the currently proposed project that were not considered or addressed in the 1991 Communications Hill Specific Plan EIR. This SEIR relies on and incorporates by reference the 1991 Communications Hill Specific Plan EIR, as modified by this SEIR. This SEIR addresses any changes and new information which are relevant to the specific impacts of the proposed project. The SEIR updates the environmental information contained in the Communications Hill Specific Plan EIR in the following subject areas: land use; geology and soils; drainage, flooding and water quality; biological resources; environmental hazards and hazardous materials; transportation and circulation; air quality; noise; cultural resources; visual and aesthetic quality; energy; and utilities and services.

The information provided in this SEIR addresses the environmental consequences of the proposed project and identifies possible means for minimizing or eliminating impacts identified as potentially significant. Various alternatives to the project that would reduce or eliminate significant environmental impacts are also discussed.

Although this document supplements an existing EIR, this document meets the requirements of an EIR as outlined in the CEQA Guidelines. The following paragraphs, excerpted from the CEQA Guidelines clarifying the overall purpose of an EIR, also describe the purpose for and standards for adequacy of this SEIR:

§15121(a). Informational Document. An EIR is an informational document which will inform public agency decision makers and the public of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR, along with other information which may be presented to the agency.

§15146. Degree of Specificity. The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR.

(a) An EIR on a construction project will necessarily be more detailed in the specific effects of a project than will an EIR on the adoption of a local general plan or comprehensive zoning ordinance because the effects of the construction can be predicted with greater accuracy.

(b) An EIR on a project such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan should focus on the secondary effects that can be expected to follow from the adoption or amendment, but the EIR need not be as detailed as an EIR on the specific construction projects that might follow.

§15151. Standards for Adequacy of an EIR. An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good-faith effort at full disclosure.

This SEIR, and all documents referenced in it, are available for public review in the office of the Department of City Planning, Building and Code Enforcement, 801 North First Street, Room 400, San Jose, California, on weekdays during normal business hours.

TABLE OF CONTENTS

PAGE

PREFACE i

SUMMARY vii

I. DESCRIPTION OF THE PROJECT 1

A. BACKGROUND AND OVERVIEW OF THE PROJECT 1
B. PROJECT LOCATION 1
C. DESCRIPTION OF THE PROJECT 5
D. PROJECT OBJECTIVES 11
E. USES OF THE EIR 11
F. CONSISTENCY WITH ADOPTED PLANS AND POLICIES 12
1. Regional Plans and Policies 12
2. Local Plans and Policies 13

II. ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES 17

A. LAND USE 17
1. Existing Setting 17
2. Land Use Impacts 18
3. Mitigation Measures 21
B. GEOLOGY AND SOILS 23
1. Existing Setting 23
2. Geology and Soils Impacts 29
3. Mitigation Measures 32
C. DRAINAGE, FLOODING AND WATER QUALITY 36
1. Existing Setting 36
2. Drainage, Flooding and Water Quality Impacts 39
3. Mitigation Measures 42
D. BIOLOGICAL RESOURCES 44
1. Existing Setting 44
2. Biological Resources Impacts 71
3. Mitigation Measures 78
E. ENVIRONMENTAL HAZARDS AND HAZARDOUS MATERIALS 87
1. Existing Setting 87
2. Environmental Hazards and Hazardous Materials Impacts 90
3. Mitigation Measures 92
F. TRANSPORTATION AND CIRCULATION 96
1. Existing Setting 96
2. Transportation and Circulation Impacts 106
3. Mitigation Measures 115
G. AIR QUALITY 117
1. Existing Setting 117
2. Air Quality Impacts 121
3. Mitigation Measures 124

TABLE OF CONTENTS, Continued

H. NOISE 126
1. Existing Setting 126
2. Noise Impacts 129
3. Mitigation Measures 132
I. CULTURAL RESOURCES 135
1. Existing Setting 135
2. Cultural Resources Impacts 137
3. Mitigation Measures 138
J. VISUAL AND AESTHETIC QUALITY 140
1. Existing Setting 140
2. Visual and Aesthetic Impacts 144
3. Mitigation Measures 149
K. ENERGY 151
2. Energy Impacts 151
3. Mitigation Measures 151
L. UTILITIES AND SERVICE SYSTEMS 152
1. Existing Setting 152
2. Utilities and Service Impacts 154
3. Mitigation Measures 158

III. AVAILABILITY OF PUBLIC SERVICES 159

IV. CUMULATIVE IMPACTS 162

V. ALTERNATIVES TO THE PROPOSED PROJECT 171
A. NO PROJECT ALTERNATIVE 171
B. REDUCED DEVELOPMENT ALTERNATIVE 172
C. AVOIDANCE OF SENSITIVE BIOLOGICAL HABITATS ALTERNATIVE 174
D. AVOIDANCE OF DUDLEYA HABITAT ALTERNATIVE 176
E. AVOIDANCE OF DUDLEYA HABITAT WITH MODIFIEDSTREET GRID ALTERNATIVE 179
F. DEVELOPMENT OF BERNS/ROSS PROPERTY ONLY ALTERNATIVE 181
G. ALTERNATIVE SITE LOCATIONS 183
H. ENVIRONMENTALLY SUPERIOR ALTERNATIVE 185

VI. SIGNIFICANT, UNAVOIDABLE IMPACTS 186

VII. GROWTH INDUCING IMPACTS OF THE PROJECT 187

VIII. REFERENCES AND PERSONS CONTACTED 188

IX. AUTHOR AND CONSULTANTS 191

TABLE OF CONTENTS, Continued

FIGURES

Figure 1 Regional Map 2
Figure 2 Vicinity Map 3
Figure 3 Aerial Photograph 4
Figure 4 Property Ownership 6
Figure 5 Conceptual Grading Plan 7
Figure 6 Cross-Section View A 8
Figure 7 Cross-Section View B 9
Figure 8 Active Fault Zones in the San Francisco Bay Area 27
Figure 9 Canoas Creek Drainage Subareas 38
Figure 10 Biotic Habitat Types on the Project Site 45
Figure 11 Locations of Santa Clara Valley Dudleya on the Site 57
Figure 12 Locations of Special-Status Wildlife Observations and Potential Habitat 61
Figure 13 Proposed Dudleya Mitigation Areas 80
Figure 14 Trip Distribution Pattern 110
Figure 15 Noise Measurement Locations 128
Figure 16 Reduced Development Alternative 173
Figure 17 Avoidance of Environmentally Sensitive Habitats Alternative 175
Figure 18 Avoidance of Santa Clara Valley Dudleya Alternative 177
Figure 19 Modified Santa Clara Valley Dudleya Avoidance Alternative 180
Figure 20 Development of Berns/Ross Property Only Alternative 182

TABLES

Table 1 Special-Status Plant Species 51
Table 2 Special-Status Wildlife Species with Potential to Occur in Vicinity of Site 58
Table 3 Special-Status Wildlife Species Known to Occur in Vicinity of Site 60
Table 4 Potential Corps Jurisdictional Wetlands and Waters of the U.S. 70
Table 5 Intersection LOS Definitions Based on Average-Stopped Vehicular Delay 100
Table 6 LOS Definitions for Freeway Segments 101
Table 7 Existing Intersection LOS 102
Table 8 Existing Freeway Segments LOS 104
Table 9 Background Intersection LOS 107
Table 10 Project Trip Generation Estimates 109
Table 11 Project Intersection LOS 111
Table 12 Project Freeway LOS 113
Table 13 Major Criteria Pollutants 118
Table 14 Federal and State Ambient Air Quality Standards 119
Table 15 Summary of Air Quality Data for Downtown San Jose 120
Table 16 Worst Case Carbon Monoxide Concentrations Near Selected Intersections 122
Table 17 Project Regional Emissions in Pounds Per Day 123
166

PHOTOS

Photos 1-4 Views of the Project Site 141
Photos 5-8 Views from the Project Site 145

TABLE OF CONTENTS, Continued

VOLUME II – TECHNICAL APPENDICES

APPENDIX A:	GEOTECHNICAL & GEOLOGIC ASSESSMENT (LOWNEY ASSOCIATES)
APPENDIX B:	HYDROLOGY STUDY (SCHAAF & WHEELER)
APPENDIX C:	BIOLOGICAL INVENTORY REPORT, WETLAND DELINEATION AND DUDLEYA MITIGATION PLAN (OLBERDING ENVIRONMENTAL, INC.)
	BAY CHECKERSPOT BUTTERFLY HISTORICAL REVIEW (LIVE OAK ASSOCIATES, INC.)
APPENDIX D:	PHASE I ENVIRONMENTAL SITE ASSESSMENTS (AQUA SCIENCE ENGINEERS, INC.)
APPENDIX E:	SITE TRAFFIC ANALYSIS (HEXAGON, INC.)
APPENDIX F:	AIR QUALITY ANALYSIS (DON BALLANTI)
APPENDIX G:	NOISE ANALYSIS (ILLINGWORTH & RODKIN)
APPENDIX H:	ARCHAEOLOGICAL EVALUATION REPORT (BASIN RESEARCH ASSOCIATES, INC.)
APPENDIX I:	NOTICE OF PREPARATION OF DRAFT EIR AND RESPONSES TO NOTICE OF PREPARATION

SUMMARY DESCRIPTION OF THE PROPOSED PROJECT

In 1992, the City adopted the Communications Hill Specific Plan (Specific Plan), which provided a comprehensive planning framework for development of a unified, high-density, pedestrian-oriented, urban community with a mix of uses on approximately 400 acres, on and around Communications Hill in San Jose. The approximate 130-acre project site, which is comprised of portions of four contiguous properties, is located along the southern portion of Communications Hill, north of Hillsdale Avenue and Narvaez Avenue, and east of State Route (SR) 87. The project proposes the development of up to 765 multi-family residential units, consisting of townhomes, row homes, condominiums and other medium to high-density attached dwellings on the site, which is consistent with the Communications Hill Specific Plan. Substantial grading of the site would be required for construction of the proposed development. The project proposes open space, predominantly consisting of the hillside slopes. The project will dedicate approximately 1.3 acres of the site, as well as the land around the AT&T communication tower, to the City for a public park. The infrastructure proposed as part of the project will include a water supply system, and extension of utility lines and services.

Local and connector streets providing primary and emergency access will be constructed as part of the project. The primary access is expected to be via Hillsdale Avenue to a portion of Vista Park Drive, with a secondary access via Narvaez Avenue.

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATIONS

The following summarizes the primary impacts of the project. The reader is referred to the main body of the EIR for discussions of the environmental setting, impacts, and mitigation measures.

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Land Use Impacts	
The project, as proposed, would not result in a significant land use compatibility impact to nearby land uses, including the AT&T communication tower and the County's communications facility. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
Development of the project would result in a significant impact to mineral resources, as identified in the Specific Plan EIR. **(Significant Impact)**	No mitigation measures proposed. **(Significant Unavoidable Impact)**
Construction of the proposed project would result in the same significant loss of open space impact as identified in the Specific Plan EIR. **(Significant Impact)**	No mitigation measures proposed. **(Significant Unavoidable Impact)**

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Land Use, cont.	
Construction activities would result in significant physical disturbance, and could cause temporary disruption to the adjacent land uses. **(Significant Temporary Impact)**	The project would implement a Construction Management Plan that would minimize impacts on adjacent land uses to less than significant level. **(Less Than Significant Impact with Mitigation)**
Existing land uses on and adjacent to the project site would not result in significant land use impacts to the project. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
Geology	
The presence of compressible soils on the site could present a significant impact to the project. **(Significant Impact)**	Potentially compressible colluvial soils would be excavated and replaced with engineered fill. The potential impacts from these loose surficial soils would be mitigated by following the recommendations of the design-level geotechnical investigation addressing proper foundation design, site preparation, subgrade preparation, and grading. **(Less Than Significant Impact with Mitigation)**
The presence of non-engineered fill materials on the site would not present a significant impact to the project. **(Less Than Significant Impact)**	The potential impacts from non-engineered fill would be mitigated by following the recommendations of the design-level geotechnical investigation addressing proper foundation design, site preparation, subgrade preparation, and grading. Existing undocumented fill materials will be removed and recompacted. **(Less Than Significant Impact with Mitigation)**
The presence of potentially unstable colluvial soils and Franciscan bedrock on the site could significantly impact future residential structures and improvements on the site. **(Significant Impact)**	Project development will adhere to the recommendations of a design-level geotechnical investigation. A registered engineering geologist would be present and inspect all slopes on site at the time of grading operations for indications of potentially unstable conditions. **(Less Than Significant Impact with Mitigation)**
Differential movement on lots with cut/fill transitions or large fill depths could significantly impact residential structures on the site. The presence of thick fill areas and	Building pads on lots with cut/fill transitions would be over-excavated to provide more uniform conditions for foundation support. Colluvial soils on-site would be excavated and

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Geology, cont.	
fill slopes on the site could also impact future residential structures on the site. **(Significant Impact)**	replaced with engineered fill. The fill slope on the site would be constructed at an overall (average maximum) slope of 2.3:1 (horizontal:vertical) and cut slopes would be graded at a overall (average maximum) slope of 3:1(horizontal:vertical). **(Less Than Significant Impact with Mitigation)**
Construction of the project, as proposed, on highly expansive soils and/or non-engineered fill would not result in significant structural damage. **(Less Than Significant Impact)**	Project development will adhere to the recommendations of a design-level geotechnical investigation. Moisture changes in the soil would be limited by using positive drainage away from the buildings and limiting the watering of landscape areas. **(Less Than Significant Impact with Mitigation)**
Development of the project, as proposed, would not expose structures and occupants to significant seismic ground shaking impacts. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would not be subject to significant impacts from sympathetic rupture on the site resulting from seismic ground shaking. **(Less Than Significant Impact)**	Seismic ground shaking hazards to the proposed project would be minimized by utilizing construction practices in accordance with Seismic Zone 4 building criteria, as described in the San Jose Building Code and the Uniform Building Code, and in accordance with the 1997 UBC Seismic Near Source Zone requirements. **(Less Than Significant Impact with Mitigation)**
Drainage, Flooding and Water Quality	
Although development of the proposed project would result in an increase in site runoff, the project proposes to connect to planned detention ponds and proposes to construct an interim detention pond to prevent increased runoff from increasing the potential for flooding along the Canoas Creek storm drainage system. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Drainage, Flooding and Water Quality, cont.	
The project would not result in significant water quality impacts on Canoas Creek and the Guadalupe River beyond those identified in the Specific Plan EIR. **(Significant Impact)**	The project would prepare a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP, along with the projects grading plans, would be reviewed and approved by the City to insure the project does not result in significant construction and post-construction impacts. **(Less Than Significant Impact with Mitigation)**
Biological Resources	
The loss of ruderal and serpentine grassland habitats as a result of the project would reduce the availability of such habitats in the area and contribute to a reduction in the diversity of species present in the project area, and would reduce foraging opportunities available on the site to special-status bird species. **(Significant Impact)**	With the exception of the Dudleya mitigation areas, portions of the site disturbed by development will be revegetated with native grasses and forbes. All non-disturbed grassland shall be preserved and placed into a conservation easement preventing future development or use of those areas. **(Less Than Significant Impact with Mitigation)**
The project would result in significant impacts to suitable bird nesting habitat. **(Significant Impact)**	To avoid the nesting season of raptors and sensitive songbirds, tree removals shall not take place between February 15 and June 30. Pre-construction surveys for nesting songbirds and raptors will be conducted for any construction conducted during the month of January 1 through February 15. Pre-construction surveys will also be conducted at other times of the year when deemed necessary by the consulting biologist. **(Less Than Significant Impact with Mitigation)**
The project would result in the significant loss of Santa Clara Valley dudleya plants on the site. **(Significant Impact)**	There will be three mitigation areas on the western slope of the project area. The total habitat encompassed by these mitigation areas is 10.7 acres. Mitigation will either involve the translocation of existing plants and/or seed collection and propagation depending on success rates. The mitigation transplantation and propagation efforts shall meet the final success criteria described in the proposed mitigation plan in Appendix C of this report. **(Less Than Significant Impact with Mitigation)**

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Biological Resources, cont.	
If California tiger salamander (CTS) are found in the ephemeral pond near Hillsdale Avenue, the project would result in impacts to CTS breeding and estivation habitat. **(Significant Impact)**	Protocol-level surveys will be completed at the Hillsdale Avenue pond. If CTS are detected, then the project would set aside and enhance on-site estivation habitat. Any residual effects would be replaced at a 1:1 ratio for both breeding and estivation habitat, adjacent to a known CTS population. Mitigation will be implemented to prevent impacts to estivating CTS that are associated with the quarry pond. **(Less Than Significant Impact with Mitigation)**
The project would not result in significant impacts to Bay Checkerspot Butterfly individuals or Bay Checkerspot Butterfly habitat on the site. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would not result in significant impacts to Hom's microblind harvestman. **(No Impact)**	No significant adverse impact has been identified; no mitigation is required. **(No Impact)**
The project would not result in significant impacts to Ricksecker's water scavenger beetle. **(No Impact)**	No significant adverse impact has been identified; no mitigation is required. **(No Impact)**
The project would result in a loss of Loggerhead Shrike foraging habitat and could result in significant impacts to individual nesting Loggerhead Shrikes. **(Significant Impact)**	No more than 30 days prior to construction or grading, a qualified biologist would survey the site to determine whether Loggerhead Shrikes nest on the project site. In the event this species is found nesting on the site, removal of nest and adjacent trees would be avoided during the nesting season. Trees would only be removed after the nesting season when the young Loggerhead Shrikes have left the nest. **(Less Than Significant Impact with Mitigation)**
The project would result in a loss of Northern Harrier foraging habitat and could result in significant impacts to individual nesting Northern Harriers. **(Significant Impact)**	No more than 30 days prior to construction or grading, a qualified biologist would survey the site to determine whether Northern Harriers nest on the project site. In the event this species is found nesting on the site, a construction free buffer zone 200-feet in diameter surrounding the nest would be provided for the extent of the nesting season. **(Less Than Significant Impact with Mitigation)**

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Biological Resources, cont.	
The project would result in a loss of White-tailed Kite foraging habitat and could result in significant impacts to individual nesting White-tailed Kites. **(Significant Impact)**	No more than 30 days prior to construction or grading, a qualified biologist would survey the site to determine whether White-tailed Kites nest on the project site. In the event this species is found nesting on the site, removal of nest and adjacent trees would be avoided during the nesting season. **(Less Than Significant Impact with Mitigation)**
The project would not result in significant impacts to special-status bats. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would not result in significant impacts to California red-legged frogs. **(No Impact)**	No significant adverse impact has been identified; no mitigation is required. **(No Impact)**
The loss of approximately 0.107 acres of wetland and drainage channel habitats as a result of the project would contribute to a reduction in the diversity of wildlife species present in the project site area, including precluding or limiting the presence of special-status species associated with these habitat types. The project would result in impacts to wetlands/waters regulated by the U.S. Army Corps of Engineers **(Significant Impact)**	The project will either create new wetlands, contribute in-lieu fees for the restoration of existing wetlands, or purchase or restore existing wetlands as mitigation. The final mitigation measure will be determined by the US Army Corps of Engineers through the section 104 permitting process. **(Less Than Significant Impact with Mitigation)**
Development of the project would result in the removal of approximately 14 ordinance size trees from the site. **(Significant Impact)**	Loss of non-native ordinance size trees will be replaced at a minimum one to one ratio. All removed native trees will be replaced at a three to one ratio. All trees adjacent to proposed project construction areas which are not removed will be protected from construction impacts. **(Less Than Significant Impact with Mitigation)**
Hazardous Materials	
The presence of naturally-occurring chrysotile asbestos on the site could result in significant impacts to workers and neighbors during contruction and upon future residents of the proposed development. **(Significant Impact)**	A health and safety plan would be prepared for the project. The plan would identify measures to reduce construction dust impacts and any long-term impacts to future residents and the public **(Less Than Significant Impact with Mitigation)**

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Hazardous Materials, cont.	
The presence of a water well and a septic tank on the site would not significantly impact the project. **(Less Than Significant Impact)**	The existing water well on the Berns/Ross property would be closed and destroyed, and the existing septic tank on the Berns/Ross property would be closed. **(Less Than Significant Impact with Mitigation)**
The presence of naturally-occurring mercury in nearby soils is not anticipated to result in significant health hazard. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The Specific Plan EIR concluded that, with appropriate design measures, the presence of the radio waves and microwaves from the existing County communication center and the AT&T communication tower would not significantly impact future residents on the site. Because the project conforms to the requirements of the Specific Plan, this impact is considered less than significant. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would not be subject to significant impacts due to off-site contamination sources. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
Traffic	
The project would result in a significant level of service impact according to the City of San Jose and CMP thresholds at the intersection of the SR 87 southbound ramps and Capitol Expressway. **(Significant Impact)**	The eastbound exclusive right-turn lane would be converted to a shared through/right-turn lane, which will extend past Narvaez Avenue. With the added capacity of the additional eastbound lane, the LOS at this intersection would be LOS E. **(Less Than Significant Impact with Mitigation)**
The project would add greater than one percent of the capacity to three freeway segments operating at LOS F, and therefore, would result in significant LOS impacts on these three freeway segments. **(Significant Impact)**	The project could widen the freeway segments of SR 87 by adding lanes to provide additional capacity in the vicinity of the impacted freeway segments. However, due to the extensive cost of such widening and the regional nature of freeway planning, this

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Traffic, cont.	
	mitigation could not reasonably be implemented by a single development, and therefore, is considered infeasible. **(Significant Unavoidable Impact)**
The project would not result in significant operational safety impacts. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project, with the proposed street improvements, would not result in significant impacts upon bicycle and pedestrian circulation. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would contribute demand for local bus service that would not be met by existing service. However, the proposed project would not interfere with existing transit service and has been designed to accommodate the transit routes identified in the Communications Hill Specific Plan. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
Air Quality	
The project would result in less than significant local air quality impacts. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
Project emissions of regional pollutants would exceed BAAQMD thresholds for two regional pollutants, and therefore, would have a significant impact on regional air quality. **(Significant Impact)**	The project's location in hilly terrain limits the potential for non-auto modes of travel. Thus, the projects adoption of non-auto modes of travel would only have the potential to reduce the regional air quality impacts of the project by 1-5 percent. This reduction would not reduce the project's regional air quality impacts to less than significant levels. **(Significant Unavoidable Impact)**
Temporary air quality impacts resulting from construction activities, particularly generation of construction dust, could cause significant short-term adverse impacts to the adjacent sensitive land uses. **(Significant Temporary Impact)**	The BAAQMD list of feasible construction dust control measures that can reduce impacts to a less than significant level would be implemented during all phases of construction, except when it is raining. **(Less Than Significant Impact with Mitigation)**

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Noise	
The proposed residences adjacent to Hillsdale Avenue would be subject to significant noise levels generated by vehicular traffic on Hillsdale Avenue. The proposed multi-family residences will be subject to exterior noise levels that will require noise attenuation to meet interior noise requirements. **(Significant Impact)**	Mitigation of noise levels would require appropriate site planning of common outdoor use areas and/or noise barriers to create acoustically protected areas shielded from traffic noise. Prior to occupying the other residential units on the site, residents would be notified that exterior noise levels generated by aircraft and the speedway exceed recommended levels for the proposed land use. A detailed acoustical analysis of interior noise exposure would be prepared. The project will incorporate attenuation measures identified in the analysis that will insure interior noise levels do not exceed the City's and State's objectives. **(Less Than Significant Impact with Mitigation)**
Exterior noise levels at other residences on the site would meet the short-range exterior noise level goal of the City of San Jose. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project site would not be subject to significant noise impacts resulting from aircraft overflights. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would be subject to less than significant noise impacts from train passbys on the nearby railroad line. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would not be exposed to significant noise levels from nearby transportation-related noise sources. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would result in a less than significant increase in noise levels on nearby roadways. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Noise, cont.	
Construction of the project would result in significant short-term noise impacts upon nearby sensitive land uses. **(Significant Temporary Impact)**	The proposed project would provide advance written notification of planned construction activities to residents of sensitive land uses within 300 feet of the site, include a construction coordinator, limit construction to the hours of 7:00 AM to 7:00 PM, and incorporate other measures such as the use of "new technology" equipment to mitigate construction noise impacts. **(Less Than Significant Impact with Mitigation)**
Cultural Resources	
The project would not result in significant impacts to buried archaeological resources. **(Less Than Significant Impact)**	The project includes the following mitigation: In the event that buried archaeological resources are exposed or discovered during project grading or construction activities, work shall be halted within 100 feet of the find and an archaeologist will be contacted. Construction in the area will only resume when mitigation measures recommended by the archaeologist and/or City have been implemented. Uncovered resources will be treated in accordance with state law. **(Less Than Significant Impact with Mitigation)**
The project would not result in significant impacts to recorded historic resources. **(Less Than Significant Impact)**	The project includes the following mitigation: The Museum Director of the History Museums of San Jose shall be contacted regarding the barbed wire fence containing Schmidt's Fence Strip. If the museum Director or staff wish to locate and retrieve samples of the fence wire for public display and/or historical research, the applicant would allow the museum staff to remove the fence wire prior to fence removal. **(Less Than Significant Impact with Mitigation)**
Visual and Aesthetics	
The project would result in significant visual and aesthetic impacts upon views of the project site from nearby and distant areas. **(Significant Impact)**	Although conformance with the proposed PD Zoning would require that the project include design and aesthetic qualities that would conform to City guidelines and would ensure

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Visual and Aesthetics, cont.	
	the appearance of the project is consistent with acceptable aesthetic standards, the project would still result in significant visual and aesthetic impacts. **(Significant Unavoidable Impact)**
Grading for the project would result in significant visual and aesthetic impacts. **(Significant Impact)**	Grading for the proposed project would result in a significant change in the visual character of the hillside and would be considered a significant unavoidable visual and aesthetic impact. **(Significant Unavoidable Impact)** The project could use natural looking retaining walls and/or rock slopes to reduce the visual effects of project grading. This could involve salvaging large boulders on-site and using them as part of retaining walls. This measure could also involve the use of Caltrans' natural-looking "stone" walls. **(Mitigation Measure Not Proposed By Project)**
The elevated water tank(s), if necessary for the project, would be visible from the surrounding streets and neighborhoods, and also from the many areas of the City that have views of Communications Hill and the site, and therefore, would result in a significant visual and aesthetic impact. **(Significant Impact)**	The elevated water tank(s), if necessary for the project, would be visible from the surrounding streets and neighborhoods, and also from the many areas of the City having views of Communications Hill and the site. This impact was identified in the Communications Hill Specific Plan as a significant unavoidable visual and aesthetic impact. **(Significant Unavoidable Impact)**
The project would not result in significant light and glare impacts. **(Less Than Significant Impact)**	All new outdoor lighting for the residential buildings and outdoor use areas would meet the City of San Jose's outdoor lighting requirements. **(Less Than Significant Impact with Mitigation)**
The project would increase access opportunities to the scenic views from the site. **(Beneficial Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Beneficial Impact)**

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Energy	
Although development of the project would contribute incrementally to the use of energy for development and operation of the site, this impact would be less than significant. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
Utilities	
The project would not result in significant sanitary sewer or wastewater treatment impacts. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would require the development of a new water distribution system. However, this system was identified in the Communications Hill Specific Plan, and therefore, the project would not result in new significant water service impacts. **(Less Than Significant Impact)**	The project would be required to comply with Chapters 15.10 and 15.11 of the San Jose Municipal Code by designing and constructing their facilities to receive recycled water. Irrigation plans must be submitted to and approved by South Bay Water Recycling (SBWR). Recycled water would be used for all grading, dust control, and other non-potable approved uses during construction. **(Less Than Significant Impact with Mitigation)**
The project would not create the need for major new storm drain infrastructure beyond that proposed on the project site and identified in the Specific Plan. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would not result in significant electric or natural gas service impacts. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would generate a substantial amount of additional solid waste which would impact the City's ability to meet the mandated solid waste diversion rate. However, the project would be designed to accommodate recycling of materials used by residents of the site. **(Less Than Significant Impact)**	The project would be designed to accommodate recycling of materials used by residents of the site. **(Less Than Significant Impact with Mitigation)**

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Utilities, cont.	
The project would not result in significant impacts upon telephone service and would not create the need for major new infrastructure. The project would not significantly interfere with the communications facilities on Communications Hill. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
Public Services	
The proposed project would provide or contribute a fair share amount towards the development of all public service facilities identified in the Communications Hill Specific Plan. The project would not create the need for any new facilities beyond those planned for in the Specific Plan. **(Less Than Significant Impact)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
Cumulative	
The project would contribute to cumulatively significant intersection and freeway level of service impacts. **(Significant Cumulative Impact)**	Because there is no such mechanism in place to achieve mitigation of identified cumulative traffic impacts, the project would contribute to significant unavoidable cumulative impacts upon intersections and freeway segments. **(Significant Unavoidable Cumulative Impact)**
The project would significantly contribute to cumulative regional air quality impacts. **(Significant Cumulative Impact)**	Under cumulative conditions, the project would generate a substantial amount of regional pollutants, and therefore, would significantly contribute to air quality exceedances of regional pollutants. **(Significant Unavoidable Cumulative Impact)**
The project would contribute to significant changes in the visual and aesthetic character of the Communications Hill ridgetop area and would contribute to the loss of views of the vacant hillsides from surrounding areas. **(Significant Cumulative Impact)**	No mitigation is proposed. **(Significant Unavoidable Cumulative Impact)**

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES
Cumulative, cont.	
The project would not result in significant cumulative land use, soils and geology, hydrology, cultural resources, hazardous materials, and services and utilities impacts. **(Less Than Significant Impacts)**	No significant adverse impact has been identified; no mitigation is required. **(Less Than Significant Impact)**
The project would contribute to the cumulative loss of open space. **(Significant Cumulative Impact)**	While the project would include the preservation of 78 acres of open space on the site, the development of the site would contribute to the cumulative loss of open space in the project site vicinity. **(Significant Unavoidable Cumulative Impact)**
The project would contribute to the loss of ruderal habitats and annual grasslands in the area, which would contribute to a reduction in the diversity of wildlife species present in the project site area. **(Significant Cumulative Impact)**	No mitigation is proposed. **(Significant Unavoidable Cumulative Impact)**
The project would contribute toward a cumulative loss of Santa Clara Valley dudleya. **(Significant Impact)**	The project includes a mitigation and monitoring plan that will reduce its contribution to the cumulative impact to a less than significant level. **(Less Than Significant Cumulative Impact with Mitigation)**
If tiger salamander are detected on the site during the on-going protocol-level surveys, the project would contribute towards a cumulative loss of California tiger salamander. **(Significant Impact)**	If it is determined that the project will impact CTS, the project shall include a mitigation plan that includes the enhancement of on-site estivation habitat, and the possible protection of existing off-site CTS populations by fee-title or a conservation easement. With the proposed mitigation and monitoring plan, the project's contribution to cumulative impacts to California tiger salamander would be less than significant. **(Less Than Significant Cumulative Impact with Mitigation)**

A. NO PROJECT ALTERNATIVE

The "No Project" Alternative consists of not constructing the proposed residential development and leaving the site in its present condition. In the short-term, the No Project Alternative would completely avoid all of the identified impacts anticipated to occur as a result of the project. However, with approval and adoption of the Communications Hill Specific Plan in 1992, the project site was designated for residential development. In the long-term, it is likely that another development project would be proposed on the site, in conformance with the City's General Plan and the Communications Hill Specific Plan. Therefore, because development has already been conceptually approved on the site, the No Project Alternative is not anticipated to result in permanent preservation of the site in its currently existing condition. The No Project Alternative does not meet any of the project objectives and is not consistent with the Communications Hill Specific Plan or the City of San Jose's General Plan. In addition, the No Project Alternative would not provide the benefits to the City resulting from development of infill residential uses on the site.

B. REDUCED DEVELOPMENT ALTERNATIVE

A design alternative to the proposed project would be a smaller scale residential development, representing a less intense use of the site. One Reduced Development Alternative would be the development of approximately 478 units on the site. The Reduced Development Alternative is environmentally superior to the proposed project, because it would result in less biological resources impacts than the proposed project, although these impacts would still be significant. Traffic, air quality, and visual impacts would all be reduced with the development of the Reduced Development Alternative, but would still be significant under this alternative scenario. The Reduced Development Alternative would produce less development than is called for in the Communications Hill Specific Plan, and would not complete the street grid on the ridge top that is specified in the Specific Plan. Therefore, this alternative would not conform to the specifications of the Specific Plan or the City's General Plan.

C. AVOIDANCE OF SENSITIVE BIOLOGICAL AREAS ALTERNATIVE

A possible alternative to the proposed project would be a design which avoids the main biologically sensitive areas of the site, including the main areas of Santa Clara Valley Dudleya, and potential special-status wildlife species habitat areas. Because of the site topography constraints, avoiding the environmentally sensitive areas of the site eliminates most of the proposed development. The only portion of the site that could feasibly be developed under this alternative would be the area of the Berns/Ross property east of Vistapark Drive. This alternative presumes that no California tiger salmander are found on the site at ephemeral pond near Hillsdale Avenue. This alternative would allow for the development of approximately 30 residential units on the site. The Avoidance of Sensitive Biological Areas Alternative is environmentally superior to the proposed project, because it would avoid all of the project's significant impacts. However, this alternative would produce far less development than specified in the Communications Hill Specific Plan, and therefore, would not conform to the specifications of the Specific Plan or the City's General Plan. In addition, this alternative would not preclude future development on the other portions of the site, in conformance with the Specific Plan.

D. AVOIDANCE OF SANTA CLARA VALLEY DUDLEYA HABITAT ALTERNATIVE

Another possible alternative to the proposed project would be a design that avoids the Santa Clara Valley dudleya habitat on the site. This alternative would allow for the development of approximately 321 residential units on the site. The Dudleya Avoidance Alternative is environmentally superior to the proposed project, because it would avoid the project's significant impacts on Santa Clara Valley dudleya. Significant traffic and air quality impacts would be reduced, but not avoided under this alternative. The visual impacts of this alternative would be similar to the proposed project. Because no development would occur within the central portion of the site under the Dudleya Avoidance Alternative, this alternative would produce less development than specified in the Communications Hill Specific Plan, and therefore, would not conform to the specifications of the Specific Plan or the City's General Plan.

E. DUDLEYA AVOIDANCE WITH MODIFIED STREET GRID ALTERNATIVE

Another possible alternative to the proposed project would be a design that avoids the Santa Clara Valley dudleya habitat on the site, while still providing development of one block row across the central portion of the site. This alternative would allow the development of approximately 353 residential units on the site. The Dudleya Avoidance with Modified Street Grid Alternative is environmentally superior to the proposed project, because it would avoid the project's significant impacts on Santa Clara Valley dudleya. Significant traffic and air quality impacts would be reduced, but not avoided under this alternative. Visual impacts of this alternative would be similar to the proposed project. This alternative would produce less development than specified in the Communications Hill Specific Plan, and therefore, would not conform to the specifications of the Specific Plan or the City's General Plan

F. DEVELOPMENT OF BERNS/ROSS PROPERTY ONLY

Another possible alternative to the proposed project would be to develop a smaller portion of the project site, such as the Berns/Ross portion of the site only. Under this alternative, residential uses would only be located within the Berns/Ross portion of the site. This alternative would avoid development on the ridgetop portion of the site, and would allow for the development of approximately 131 residential units on the site. The Berns/Ross Alternative is environmentally superior to the proposed project, because it would avoid most of the project's significant biological resources impacts and the significant unmitigated freeway traffic and air quality impacts. This alternative would produce far less development and would not complete the street grid as specified in the Communications Hill Specific Plan. This alternative would not conform to the specifications of the Specific Plan or the City's General Plan. The development of this alternative would involve leaving the Vieira and Long-Kwei properties in their current condition, although this alternative would not preclude future development of those properties in accordance with the Specific Plan.

G. ALTERNATIVE SITE

A possible alternative site for the project would be approximately 47 acres of undeveloped land, located along Capitol Avenue, between Hostetter Road and McKee Road in north San Jose. Approximately 800-900 residential units could be developed on the vacant land in conformance with the medium-high density residential (12-25 dwelling units per acre) General Plan designation. It should be noted that these properties are currently under multiple ownerships. Assuming the land could be acquired, it could be developed with equivalent number of residential units as proposed on the site. While development of the Capitol Corridor sites would avoid the project's significant biological resources and visual and aesthetic impacts, development on these properties is already

continuing or proposed in conformance with the City's General Plan goals and policies, separate from the proposed project. It should be noted that, in response to regional housing needs, the City has undertaken a study to identify additional locations within San Jose for residential development, in addition to the sites already specified in the General Plan. The Capitol Corridor properties are currently being evaluated as part of the City's Housing Opportunities Study for re-designation at higher densities, appropriate along the future LRT corridor. Therefore, the development of an alternative site would not preclude the need for additional housing in the Communications Hill area.

H. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Based on the above discussion, the environmentally superior alternative is the No Project Alternative, because all of the project's significant environmental impacts would be temporarily avoided. However, Section 15126.6(e)(2) states that "if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." For purposes of this project, the environmentally superior alternative would be the Avoidance of Sensitive Biological Areas Alternative.

I. DESCRIPTION OF THE PROJECT

A. BACKGROUND AND OVERVIEW OF THE PROJECT

With the adoption of the Horizon 2000 General Plan in 1984, Communications Hill was recognized as a suitable location for development of a high-density urban community, due to its proximity to major transportation facilities and employment centers, its approximately 400 acres of vacant land, and its hilly topography which precludes most commercial and industrial uses.

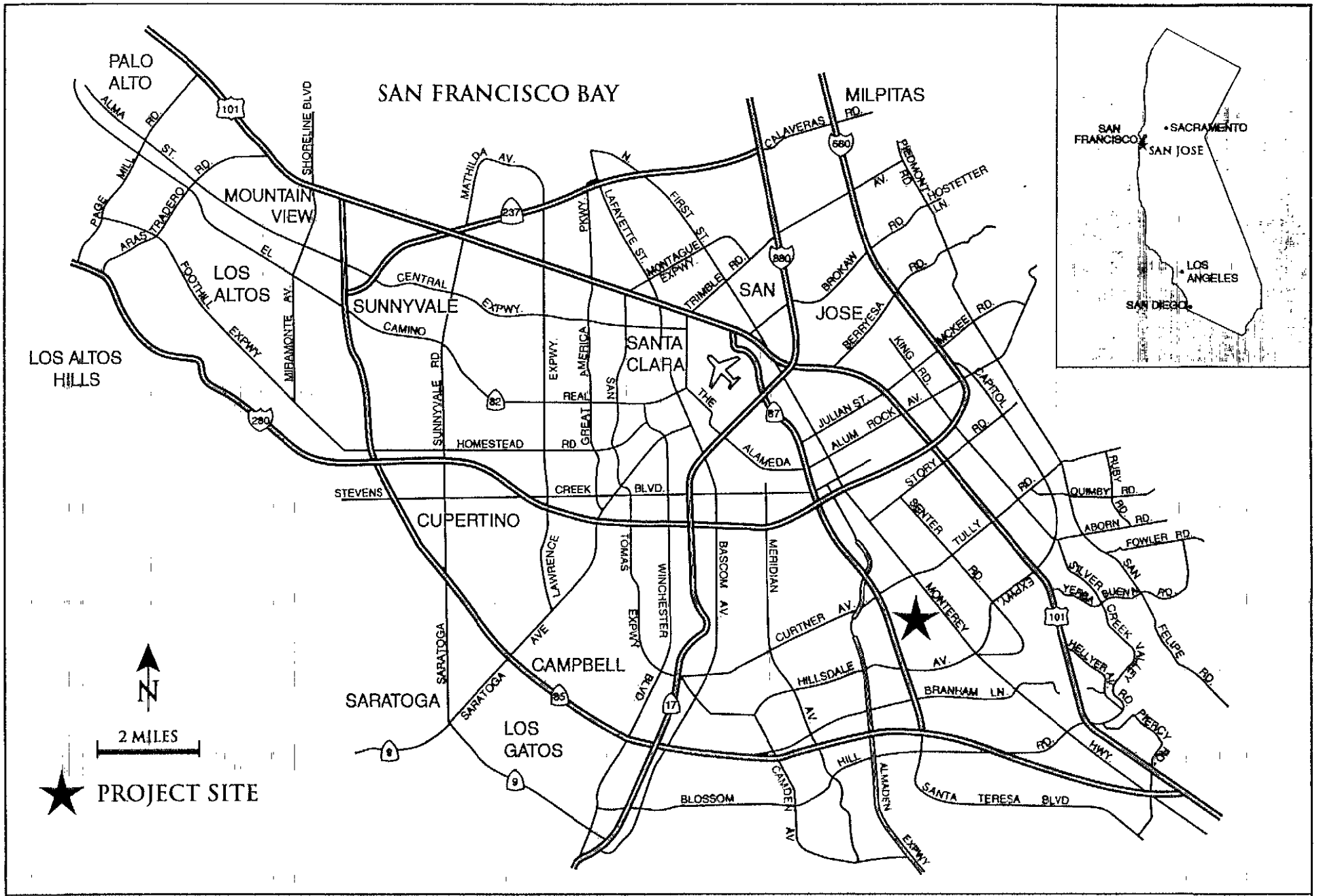
In 1992, the City adopted the Communications Hill Specific Plan (Specific Plan), which provided a comprehensive planning framework for development of a unified, high-density, pedestrian-oriented, urban community with a mix of uses on approximately 400 acres, on and around Communications Hill. The planning process for the Specific Plan included the active participation of a citizen's task force, City staff, and a consultant planning team. The property owners within the Specific Plan area were also involved in the formulation of the Specific Plan. Regional and vicinity maps of the Communications Hill area are presented on Figures 1 and 2, respectively. The Specific Plan also provided a comprehensive design and phasing plan for necessary utilities and services, and identified financing mechanisms for funding them. The Specific Plan also provided consistent development guidelines and standards for the entire hillside community. The basic land use and policy components of the Specific Plan have been incorporated into the General Plan as a Planned Residential Community (PRC). The PRC establishes the fundamental intent of the City for development of the Specific Plan area. The Specific Plan included multi-family neighborhoods, a public school, parks, a playfield, open space areas, a 50,000 square foot neighborhood commercial center, plus additional commercial areas throughout the residential areas, and civic uses.

The maximum number of additional residential dwelling units allowed for the Communications Hill area under the Specific Plan is 4,000 high-density attached residential units. The Specific Plan allows for the development of the high-density attached residential units at a density of 24 dwelling units per net developable acre. This number of units was determined based upon an assessment of the existing topography, projected building types, and parking requirements. The project proposes up to 765 residential units, consisting of townhomes, row homes, condominiums and other medium to high-density attached dwellings. This represents approximately 19 percent of the residential development approved under the Communications Hill Specific Plan.

An Environmental Impact Report (EIR) was prepared and certified on the Specific Plan in October 1991. The EIR provided a program-level analysis of the environmental impacts of the Specific Plan project and stated that subsequent environmental review will be necessary for future, specific development proposals. This SEIR has been prepared to provide the subsequent environmental review for the proposed project.

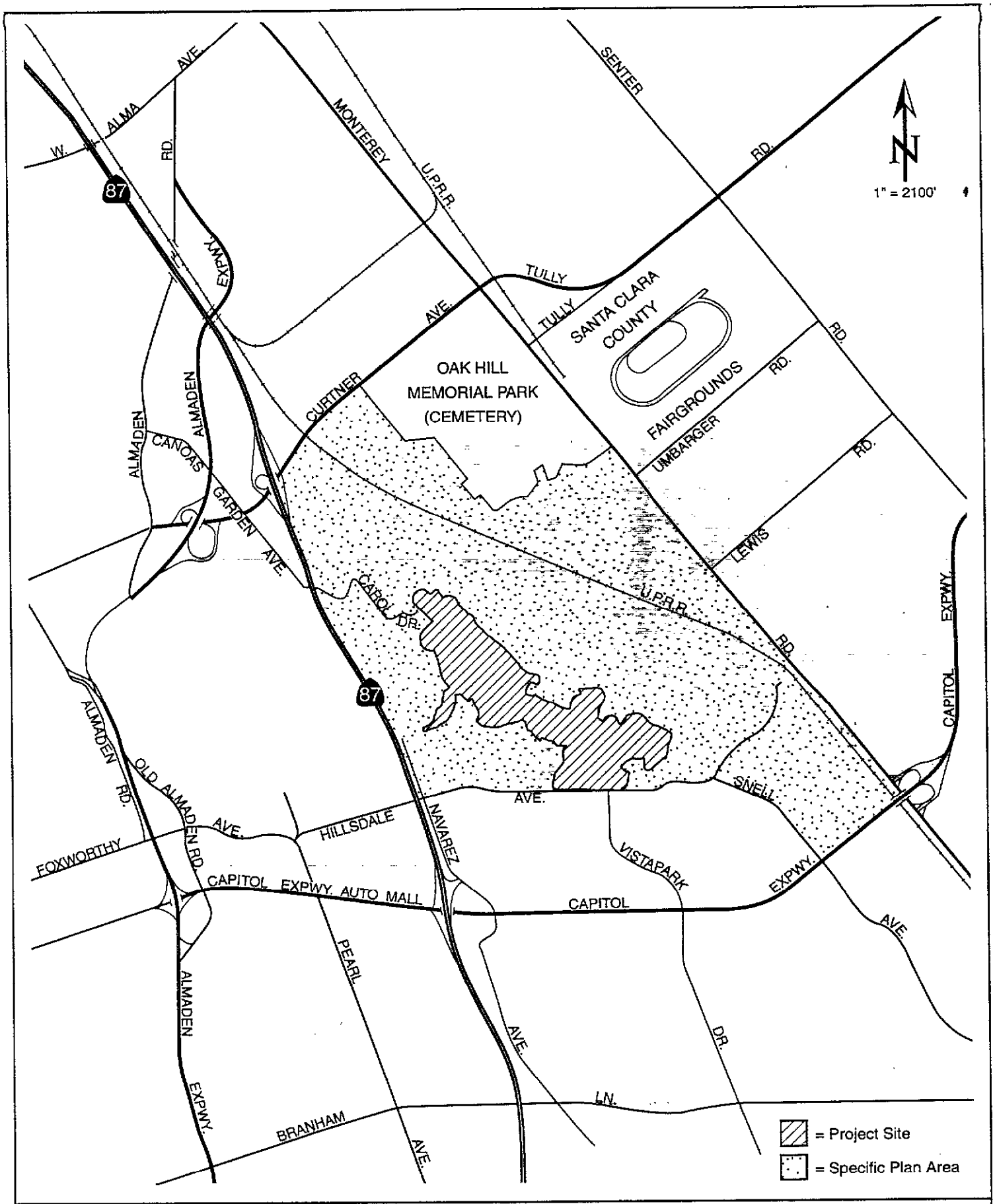
B. PROJECT LOCATION

The project site is located along the southern portion of Communications Hill, north of Hillsdale Avenue and Narvaez Avenue, and east of State Route (SR) 87, in San Jose (see Figures 1-3). The existing AT&T communications tower and facilities, a quarry, and existing open space are located east of the site. A sloping hillside/open space area is located southwest of the site. At the foot of the hill, existing residences are located farther southwest and west of the site. Open space, existing residential uses, and the Santa Clara County communications facilities are located northwest of the site. An aerial photograph of the site and surrounding land uses is presented on Figure 3.



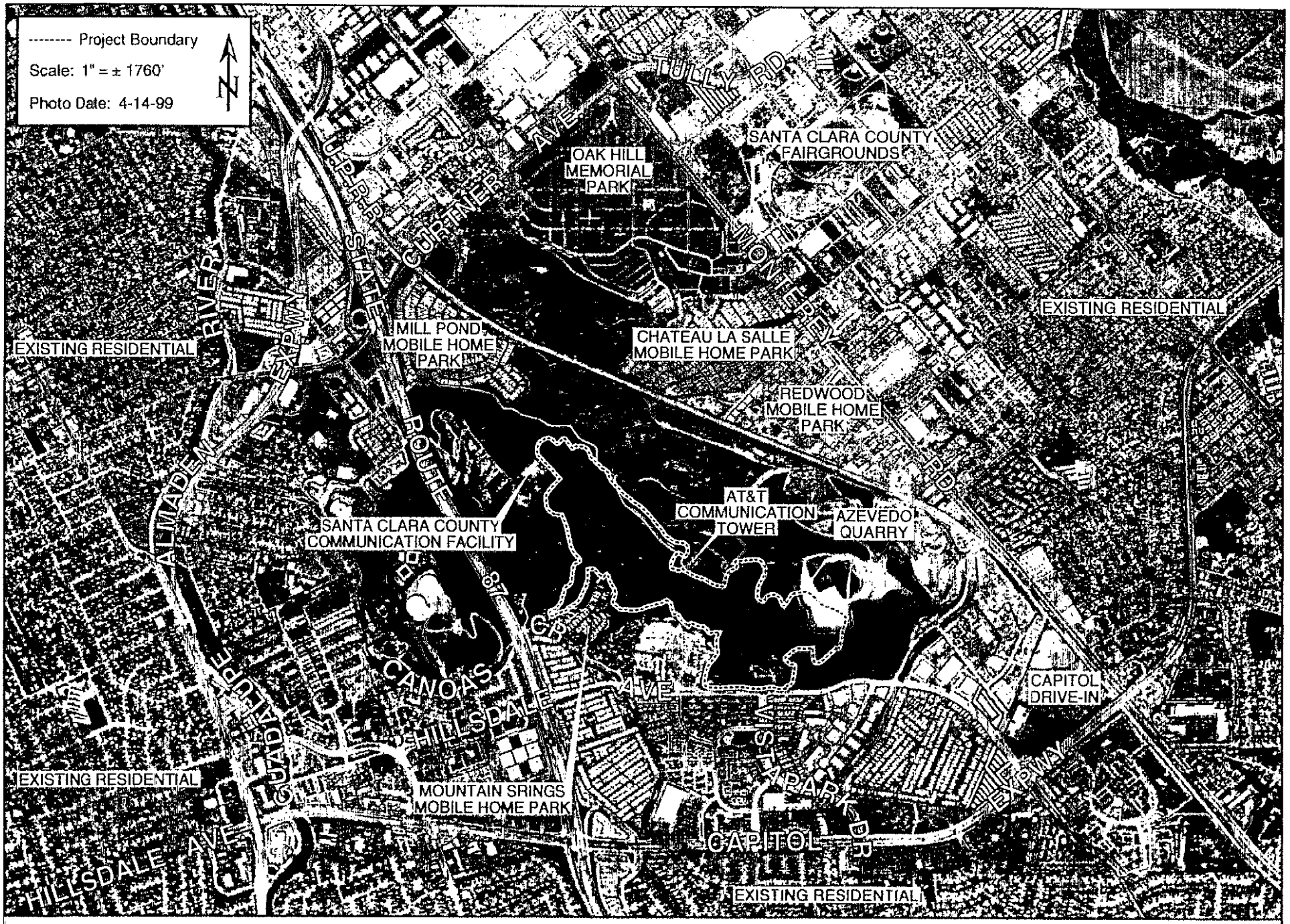
REGIONAL MAP

FIGURE 1



VICINITY MAP

FIGURE 2



AERIAL PHOTOGRAPH

FIGURE 3

The project site consists of portions of four contiguous properties on Communications Hill: the Vieira property, the Western Pacific/Long Kwei property, the Berns/Ross property, and the MTA property to the north. The total project site includes approximately 130 acres, which consists of the majority of the Vieira, Western Pacific/Long-Kwei[1] and Berns Ross properties, as well as approximately 41 acres of the MTA Property (see Figure 4). The Vieira property is the most westerly property, ranging from the hilltop down to the existing Helzer redevelopment project at the foot of the hill. Long Kwei is the central property and is located below the AT&T tower. Berns/Ross is the easterly property at the foot of the hill adjacent to Hillsdale Avenue (refer to Figure 4).

C. DESCRIPTION OF THE PROPOSED PROJECT

The project proposes the development of up to 765 residential units, consisting of townhomes, row homes, condominiums and other medium to high-density attached dwellings. This is consistent with the Communications Hill Specific Plan. The architectural design and the number of specific types of units (i.e., townhomes, row homes, and condominiums) are yet to be determined.

The project proposes open space, predominantly consisting of the hillside slopes. The project will also dedicate approximately 1.3 acres of the site to the City for a public park. In addition, the project will also dedicate the land around the AT&T communication tower to the City for park uses. A conceptual site grading plan is shown on Figure 5. Because the specific locations of residential buildings and open space areas are not yet determined, this EIR evaluates the potential impacts of development occurring throughout the limit of grading shown on Figure 5.

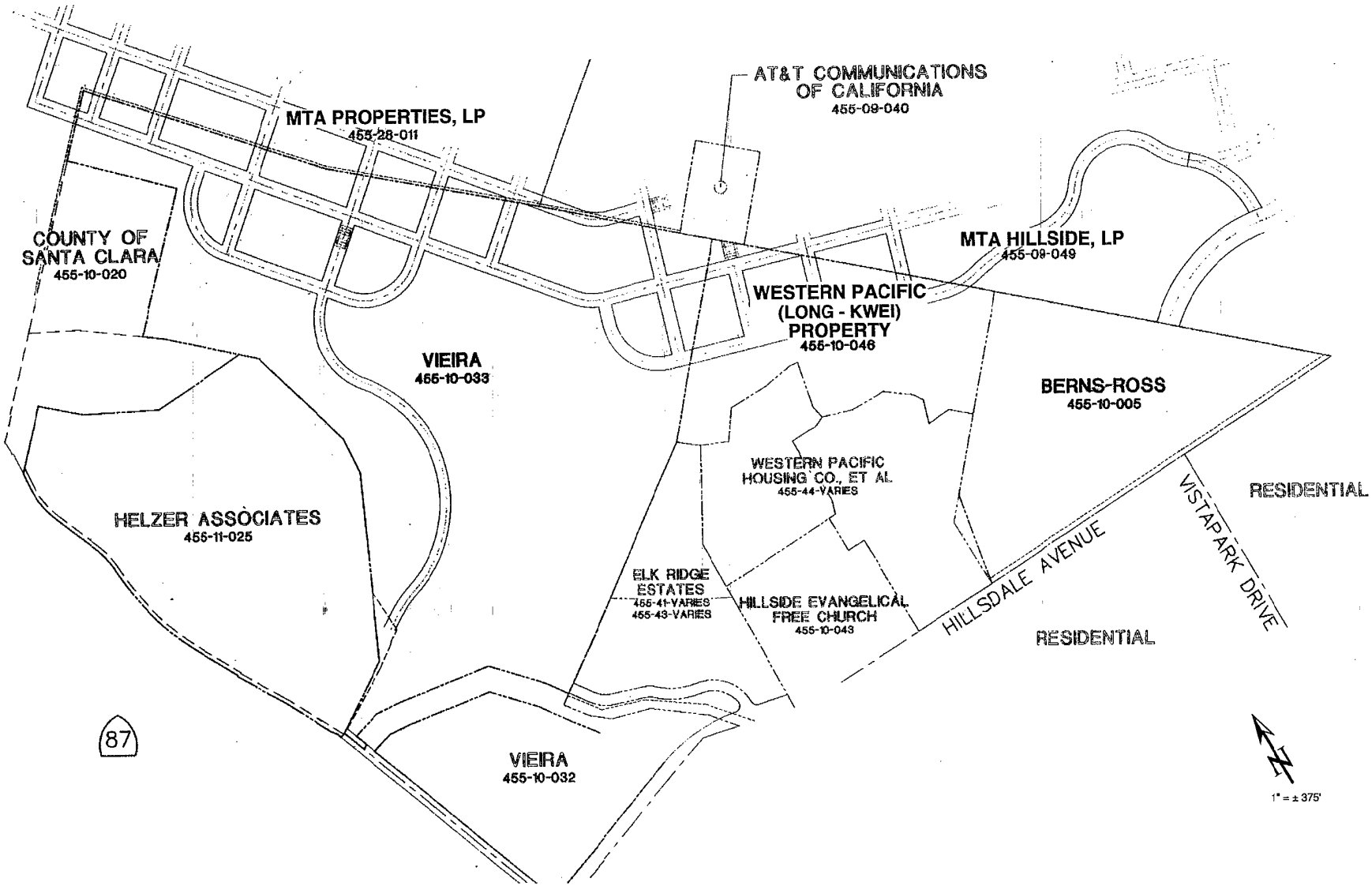
At this time, the project applicant proposes to commence construction of the project in Spring 2001. The rough grading for project construction is estimated to be ongoing for approximately six (6) months. Completion of the project is estimated in 2-3 years.

Site Grading

Substantial grading would be required on the site for construction of the proposed development. Grading would be designed to conform to the existing natural contours of the hillside as much as feasible. However, due to the size of the proposed development and the nature of the site, there would be a substantial amount of grading on the site, which would significantly alter the character of the project site. Preliminary estimates indicate that the project would require approximately 1.9 million bank yards of cut and approximately 1.9 million bank yards of fill on the site.

Grading for the proposed residential development would result in several cut and fill slopes with depths of approximately 40 feet. The maximum depth of fill on the site would be approximately 87 feet at one location, and the maximum depth of cut on the site would be approximately 73 feet at another location. The cut and fill slopes would be capped with up to two (2) feet of soil, and would be covered with roads, housing, parks, terrace and open space areas. Two cross-sectional views of the site are provided on Figures 6 and 7.

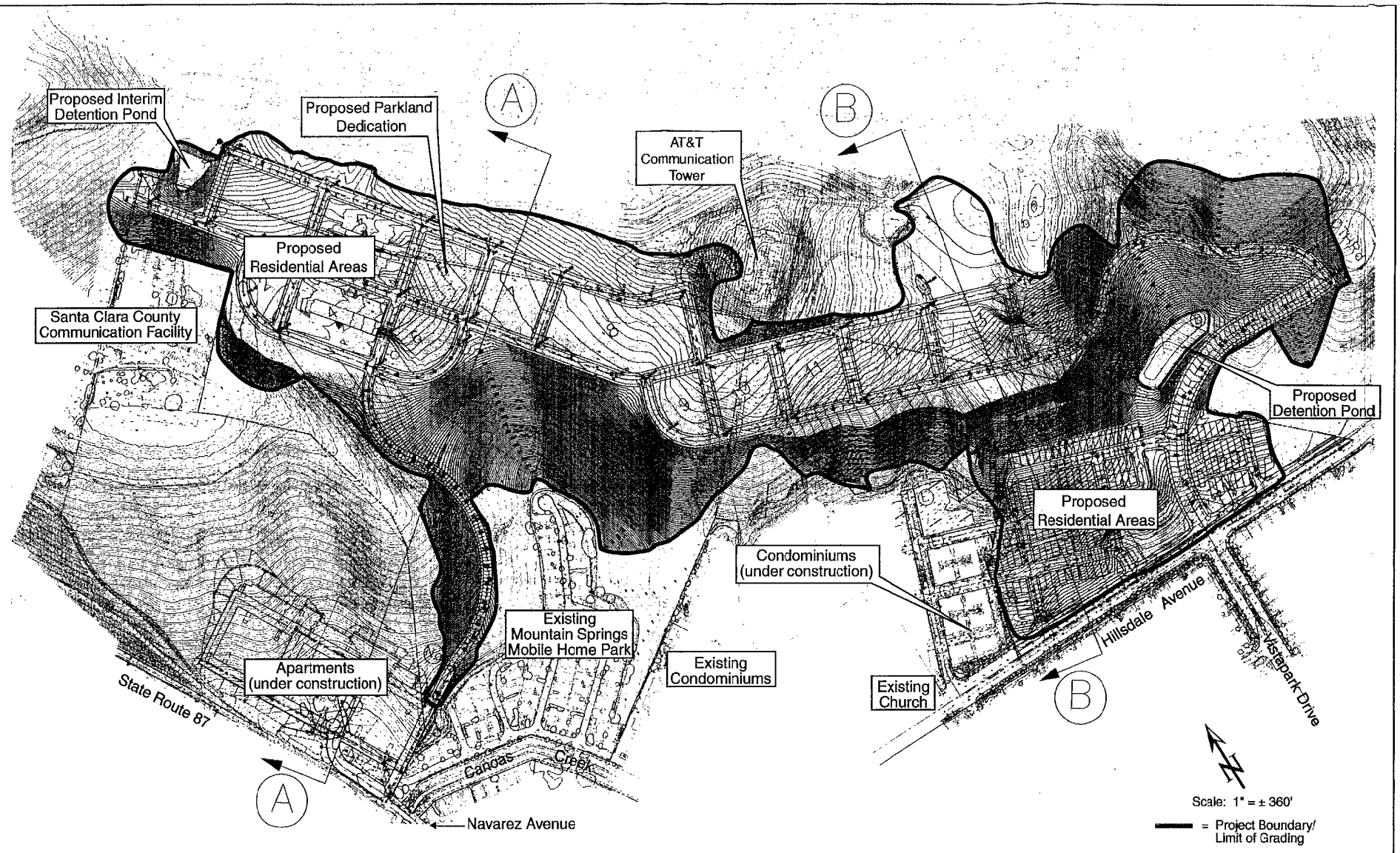
[1] The title of this property is currently held by Western Pacific. Long-Kwei has the first option to purchase this property. For the purposes of this document, this property is hereinafter referred to as the Long-Kwei property.



Source: HMH, Inc.

PROPERTY OWNERSHIP

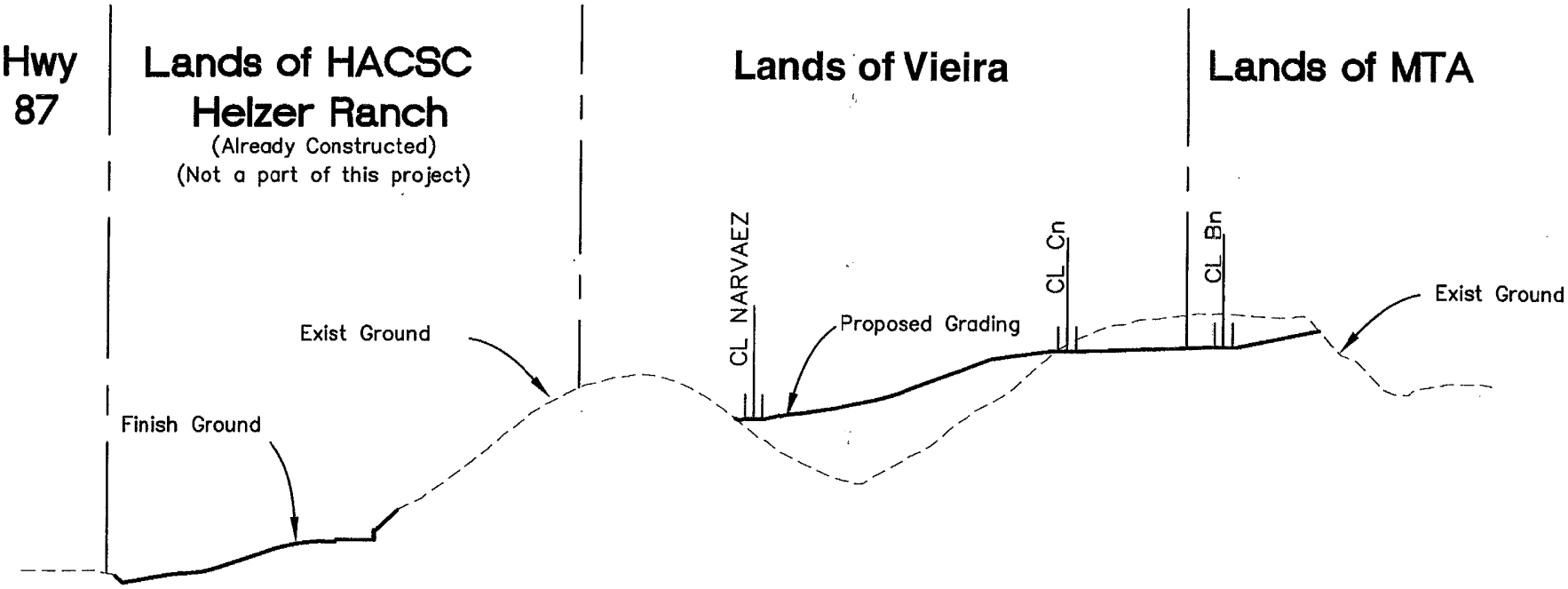
FIGURE 4



Source: HMH, Incorporated (October, 2000)

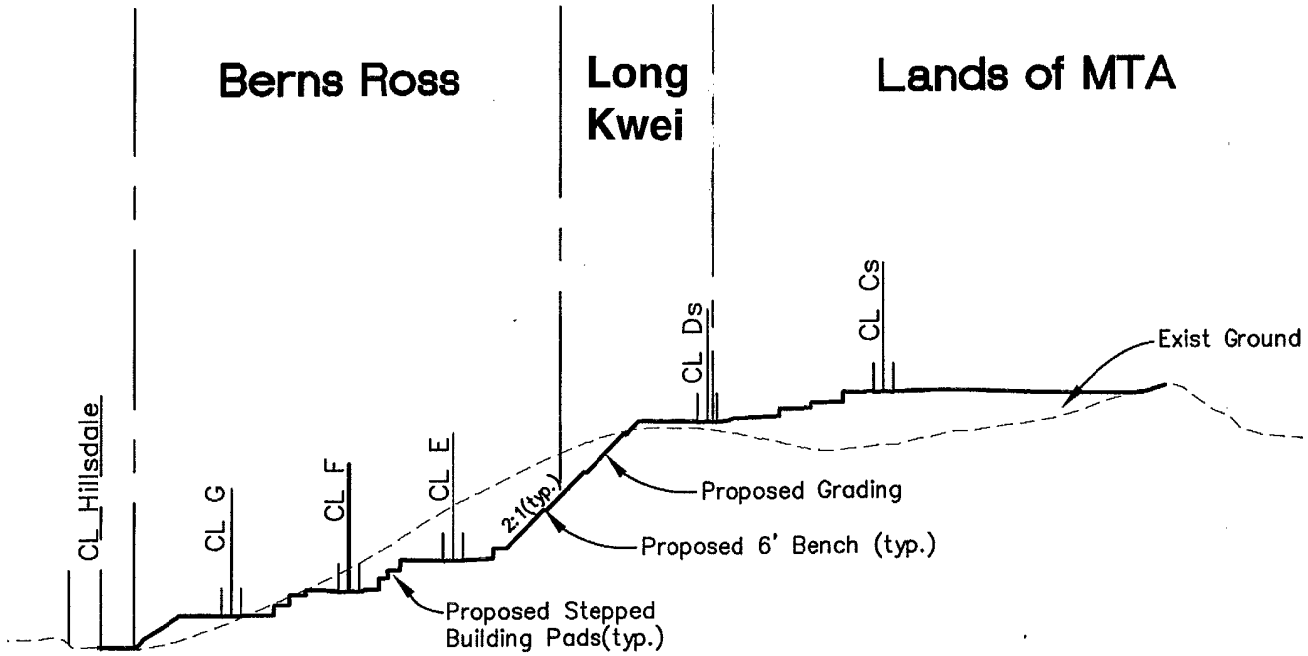
CONCEPTUAL GRADING PLAN

FIGURE 5



CROSS-SECTION VIEW A

FIGURE 6



CROSS-SECTION VIEW B

FIGURE 7

Infrastructure Improvements

Development of the project would require construction of the infrastructure necessary to serve the proposed development. The infrastructure proposed as part of the project will include a water supply system, new streets, and extension of utility lines and facilities within the project boundary (refer to Section II, L, Utilities and Service Systems, of this SEIR). The project will also contribute towards construction of an approximately 6,000 square foot, urban style fire station in the project vicinity (refer to Section III, Availability of Public Services, of this SEIR). The fire station would be operational by the completion of the project.

A new water system will be constructed in order to meet the demand for domestic water use and fire service on the site and the remainder of Communications Hill. Alternative studies for the water system will be evaluated, including: a below grade (or underground) tank verses an elevated tank on top of the hill, and a pump with a back up generator (possibly without a tank) at the foot of the hill. Because the type of water system is not yet determined, this EIR evaluates the potential impacts of the elevated tank on top of the site, since the elevated tank would result in greater environmental (particularly visual) impacts than the other water supply options.

Local and connector streets providing primary and emergency access will be constructed as part of the project. The primary access is expected to be via Hillsdale Avenue to a portion of Vista Park Drive[2], with a secondary access via Narvaez Avenue.

The extension of utilities and services such as sewer, water, electric, gas, telephone and cable lines will be required. These utilities are available at the terminus of Narvaez Avenue and Hillsdale Avenue (refer to Figure 2). The proposed development would also contribute to an existing storm drainage system and would require additions to the existing collection systems to serve the additional area.

Storm Drainage

The City of San Jose has included detention storage ponds within the Communications Hill Specific Plan, for areas that drain directly to Canoas Creek, in order to mitigate for potential increased flows due to development. The Specific Plan included detention ponds in both the Narvaez and Hillsdale drainage areas. The Helzer Ranch project includes two detention ponds that were designed to accommodate increased drainage from that project, as well as the proposed project. The Helzer Ranch project is under construction and these detention ponds were graded to the final design contours and capacities. The detention ponds have a maximum design water depth of approximately four (4) feet, and a required capacity of approximately 1.0 acre foot for the 100-year design storm. The proposed project has been designed to drain towards these detention ponds on the Helzer Ranch property. The outlet structure will be modified when additional drainage area is added to the system.

The project proposes to construct an interim storm water detention basin on the northwestern corner of the project site (refer to Figure 5). This detention basin would be approximately four feet deep and would have a capacity of one acre-foot of water. Storm flows from the northwestern portion of the site would be directed by gravity to this detention basin, stored temporarily, pumped by a force main and released through storm lines in the roadways to the detention ponds on the Helzer property.

[2] The road over Communications Hill has not yet been officially named. This roadway is commonly referred to as "Over the Hill Road", "Communication Hill Boulevard", and "Vista Park Drive". For the purposes of this document, this roadway is hereinafter referred to as Vista Park Drive.

The project also includes a permanent detention pond in the Hillsdale Avenue drainage system, on the eastern portion of the site, upstream of the Berns/Ross property (refer to Figure 5). The detention pond was designed to accommodate increased drainage from the proposed project, as well as future development on Communications Hill in the Hillsdale Avenue drainage area. The proposed detention pond would have a maximum design water depth of approximately three (3) feet, and a required capacity of approximately 1.5 acre feet for the 100-year design storm.

Once the peak flows have subsided in the Canoas Creek channel, the water in these ponds would be released into the creek. This would reduce the project's impact on peak flows in Canoas Creek.

D. PROJECT OBJECTIVES

The objective of the project is to develop high-density attached residences on the project site, which is one of the last remaining large, infill sites in south-central San Jose, in support of the goals of the Communications Hill Specific Plan. The overall objective of the Communications Hill Specific Plan was to provide the planning framework for development of a unified, high-density, pedestrian-oriented, urban community with a mix of uses on and around Communications Hill. The project has been designed in accordance with the parameters outlined in the Specific Plan. The project proposes approximately 765, or 19 percent, of the 4,000 residences identified and approved in the Specific Plan.

E. USES OF THE EIR

The City of San Jose is the Lead Agency under the California Environmental Quality Act (CEQA) and is required to initiate environmental review for actions occurring within the Communications Hill Specific Plan area. It is proposed that this SEIR will be relied upon in issuing appropriate project-specific discretionary approvals necessary to implement this project as proposed. These actions include the following approvals by the agencies indicated and any others as necessary:

City of San Jose	Planned Development (PD) Zoning
	Planned Development (PD) Permit(s)
	Planned Development (PD) Permit Amendments
	General Plan Amendment
	Tentative Maps
	Development Agreement
	Contracts for public infrastructure construction
	Stormwater Pollution Prevention Plan
	Tree Removal Permit(s)
	Grading Permits
	Annexations
	Public Maintenance District
	Demolition Permit
U.S. Army Corps of Engineers	Nationwide Section 404 Permit
Regional Water Quality Control Board	Section 401 Waiver or Water Quality Certification
California Department of Fish & Game	Streambed Alteration Agreement/1601-1603

F. CONSISTENCY WITH ADOPTED PLANS AND POLICIES

In conformance with Section 15125(b) of the CEQA Guidelines, the following section discusses the consistency of the proposed project with relevant adopted plans and policies.

1. Regional Plans and Policies

1982 Bay Area Air Quality Plan and 1997 Clean Air Plan
ABAG/BAAQMD/MTC

The 1982 Bay Area Air Quality Plan and 1997 Clean Air Plan ('97 CAP) establish regional policies and guidelines to meet the requirements of the Clean Air Act, as amended through 1990. The Bay Area is a non-attainment area for ozone. The updated Clean Air Plan adopted on December 17, 1997, outlines measures and improvements to help the Bay Area comply with the state's ozone standard. The Plan proposes the adoption of transportation, mobile source and stationary source controls on a variety of pollutant sources to offset population growth and provide improvement in air quality.

Consistency: The project would contribute to local traffic in the peak hours and the peak direction. This increase in traffic would be a source of increased air pollutant emissions, which would contribute to exceedances of regional air quality standards. Construction activities associated with future development would also generate minor temporary air pollution impacts. The project does not propose to add residences beyond the City of San Jose General Plan assumptions. Because the projections in the Clean Air Plan are based on General Plan buildout, this project is consistent with the Clean Air Plan.

Santa Clara Valley Urban Runoff Pollution Prevention Program

The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) was developed in accordance with the requirements of the 1986 San Francisco Bay Basin Water Quality Control Plan, for the purpose of reducing water pollution associated with urban storm water runoff. This program was also designed to fulfill the requirements of Section 304(1) of the federal Clean Water Act, which mandated that the Environmental Protection Agency develop National Pollutant Discharge Elimination System (NPDES) Permit application requirements for various storm water discharges, including those from municipal storm drain systems and construction sites.

The State Water Resources Control Board implemented an NPDES general construction permit for the Santa Clara Valley. For properties of five acres or greater, a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) must be prepared prior to commencement of construction.

Consistency: The project would conform to the requirements of the NPDES permitting program. The proposed construction would increase storm water runoff. Potential impacts to the water quality of this runoff could occur during construction. Runoff-borne pollution and associated impacts would increase both during and after construction of future development on the site. Section II, C, Drainage, Flooding and Water Quality, of this SEIR identifies mitigation measures proposed to reduce water quality impacts in runoff, both for construction and in the long-term, which are consistent with the standards of the Urban Runoff Pollution Prevention Program.

Santa Clara County Congestion Management Program

The Santa Clara Valley Transportation Authority (SCVTA) oversees the Santa Clara County *Congestion Management Program* (CMP), last updated in May 1998. The relevant state legislation requires that all urbanized counties in California prepare a CMP in order to obtain each county's share of the increased gas tax revenues. The CMP legislation requires that each CMP contain five mandatory elements: 1) a system definition and traffic level of service (LOS) standard element; 2) a transit service and standards element; 3) a transportation demand management and trip reduction element; 4) a land use impact analysis element; and 5) a capital improvement element. Santa Clara County's CMP includes the five mandated elements and three additional elements, including: a county-wide transportation model and database element, an annual monitoring and conformance element, and a deficiency plan element.

The Santa Clara County CMP includes subregional roadways within north San Jose that are identified as CMP road facilities. The existing primary CMP facilities in the immediate vicinity of the project site that would be affected by future traffic generated by the project would include: SR 87, Capitol Expressway, and Almaden Expressway. As discussed in Section II, F, Transportation and Circulation, of this EIR, other more distant CMP facilities will also be affected.

Consistency: The traffic analysis prepared for the proposed project discusses impacts on regional roadways, consistent with CMP policies. As discussed in Section II, F, Transportation and Circulation, the project as proposed is consistent with the provisions of the CMP.

2. Local Plans and Policies

San Jose 2020 General Plan

The San Jose 2020 General Plan is an adopted statement of goals and policies for the future character and quality of development of the community. Following is a summary of major strategies and policies that apply to the proposed project.

Land Use/Transportation Diagram

The San Jose 2020 General Plan Land Use/Transportation Diagram shows the project site as part of the *Communications Hill Planned Residential Community*. The land use designation for the site is *High Density Residential*, which allows residential units at a density of 25-40 dwelling units per acre. The project also proposes open space areas, which are consistent with these designations. Therefore, the proposed project is consistent with the San Jose Land Use/Transportation Diagram.

Major Strategies

Economic Development Strategy

The City of San Jose's Economic Development Strategy strives to make San Jose a more "balanced community" by encouraging more commercial and industrial development to balance the existing residential development. Although the Santa Clara County area has substantially more jobs than housing, the City of San Jose itself currently has a significant surplus of housing over employment, a "jobs/housing imbalance". The City of San Jose

currently has approximately 80,000 more employed residents than jobs within its borders.[3] This makes it difficult to provide adequate urban services, because residential development does not generate sufficient revenue to cover service demands. Economic development is, therefore, a basic priority for San Jose, both for financial reasons and to provide employment opportunities for San Jose residents.

However, given the current shortage of housing in the overall "Silicon Valley" area, San Jose is working to increase housing production in the City, and has undertaken studies to identify new housing opportunities. While the addition of housing units within the City of San Jose, would not improve the City's jobs/housing imbalance, the development of infill housing within the urban area of the City would provide much needed housing in the South Bay Area and would conform to the City's General Plan and Urban Growth Boundary.

Sustainable City Strategy

The Sustainable City Strategy reflects San Jose's desire to become an environmentally and economically "sustainable city". A "sustainable city" is a City designed, constructed, and operated to minimize waste, efficiently use its natural resources and to manage and conserve them for the use of present and future generations. The Sustainable City Strategy seeks to reduce traffic congestion, pollution, wastefulness, urban sprawl, and environmental degradation of our living environment. The City operates many programs that promote the wise use of natural resources and are intended to move San Jose towards sustainability. These programs include recycling, waste disposal, water conservation, transportation demand management, transportation systems management, energy efficiency (green building construction), and preventative maintenance of the built environment. In addition, the City also oversees hazardous materials storage, offers toxic waste minimization and pollution prevention programs, and is responsible for wastewater treatment and reclamation. The Sustainable City Strategy is intended to support all of these efforts by ensuring that the urban form is designed and built in a manner consistent with the objectives of efficient resource use and environmental protection.

The project sponsor is proposing to develop infill housing within the City's urban area. For this reason, the proposed project would not result in urban sprawl, and therefore, supports the City's Sustainable City strategy.

Economic Development Goals #1 and #2

The two basic economic development goals in the General Plan are: 1) create more job opportunities for existing residents, and 2) create a stronger municipal tax base by obtaining a greater share of commercial and industrial growth in the County, and by nurturing and encouraging expansion of existing development. The City should reduce the imbalance between housing and employment by seeking to obtain and maintain an improved balance between jobs and workers residing in San Jose. As stated in the General Plan, a perfect balance between the number of jobs and employed residents may not be achievable, but the City should attempt to achieve a minimum ratio of 0.80 jobs/employed resident to attain greater fiscal stability.

While the addition of housing units within the City of San Jose, would not improve the City's jobs/housing imbalance, the development of infill housing within the urban area of the City would provide much needed housing in the South Bay Area.

[3] Association of Bay Area Governments, Projections 2000, 1999.

Consistency: The proposed project is consistent with the relevant goals and policies of the City of San Jose General Plan.

Post-Construction Urban Runoff Management Policy

The City's Post-Construction Urban Runoff Management Policy states that all new development projects proposing 5,000 square feet or more of new building rooftop or paved area, or 25 or more uncovered parking stalls should include the following: 1) install and maintain post-construction treatment control measures; 2) stencil on-site inlets in conformance with City requirements; and 3) clean on-site inlets a minimum of once per year, prior to the wet season. All post-construction treatment control measures are required by the Policy to be installed, operated and maintained by qualified personnel, and property owners/applicants are required to keep maintenance and inspection records. For projects with suitable landscape areas, the Policy also identifies vegetative swales or biofilters as the preferred treatment control measures.

Consistency: The project would be subject to the provisions of the Post-Construction Urban Runoff Management Policy. The project includes post-construction treatment control measures as well as installation and cleaning of on-site inlets. Therefore, the project would be consistent with the Post-Construction Urban Runoff Management Policy.

Communications Hill Specific Plan

In 1992, the City adopted the Communications Hill Specific Plan, which provided a comprehensive planning framework for development of a unified, high-density, pedestrian-oriented, urban community with a mix of uses on approximately 400 acres, on and around Communications Hill. The Specific Plan also provided a comprehensive design and phasing plan for necessary utilities and services, and identified financing mechanisms for funding them. The Specific Plan also provided consistent development guidelines and standards for the entire hillside community. The Specific Plan included multi-family neighborhoods, a public school, parks, a playfield, open space areas, a 50,000 square foot neighborhood commercial center, plus additional commercial areas throughout the residential areas, and civic uses. The basic land use and policy components of the Specific Plan have been incorporated into the General Plan as a Planned Residential Community (PRC). The PRC establishes the fundamental intent of the City for development of the Specific Plan area.

The overall goals and policies of the Communications Hill Specific Plan include the following:

- Distribute housing types and densities, workplaces and facilities to create a mixed but compatible arrangement of land uses within the Communications Hill Specific Plan area.
- Integrate existing land uses, particularly mobile-home parks and single-family homes, with new land uses, ensuring the viability and compatibility of both.
- Adopt site planning and architectural guidelines and noise attenuation techniques to protect Communications Hill residents and workers from excessive noise from arterials, freeways, the fairground activities, adjacent industrial activities and trains and planes traveling nearby.
- Minimize grading or re-contouring of Communications Hill to preserve the topography of the land wherever possible, and to avoid the creation of visible cut and fill slopes or obviously engineered or flat-surfaced slopes.

- Minimize the potential adverse impacts of the Communications Hill area development on the immediate surrounding neighborhood.

Consistency: The project has specifically been designed to be consistent with the Communications Hill Specific Plan. The project proposes single-family attached residential uses and associated infrastructure and public uses, in accordance with the specifications of the Specific Plan. The project has also been designed to minimize re-contouring of the hillside areas and minimize potential impacts on adjacent land uses. For these reasons, the project is consistent with the Communications Hill Specific Plan.

II. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

A. LAND USE

1. Existing Setting

The project site is located within the Communications Hill area of south-central San Jose. Communications Hill rises approximately 300 feet above the valley floor, and is the dominant topographic feature in this relatively-level area of San Jose. The terrain in the higher elevation areas consists of moderate to steep slopes on the hillsides, with broad, gently sloping ridgetops. The primary ridge runs for approximately one mile from the southeast section of Communications Hill to the northwest, where it declines in elevation to a series of lower knolls. The ridgeline also extends to the west for one mile, terminating at Canoas Creek. This ridge is bisected by the SR 87 freeway. The Union Pacific Railroad line cuts through former hillside areas to the north of the project site.

The ridge area of Communications Hill is mostly undeveloped, with the exception of public communication facilities and some single-family residences. The level areas at the base of Communications Hill, which surround the mainly undeveloped ridge, consist of a variety of existing land uses, including mainly residential uses, a church, the Oak Hill Memorial Park (a cemetery), and other public uses. In addition, residential uses have recently been built on the southwest portion of the hill.

The project site includes land at the top of the hill as well as lands near the base of Communications Hill (refer to Figures 3-5). The upper portion of the site is located approximately 300 feet above the Santa Clara Valley floor and consists of gently-sloping ridgetops, with slopes ranging from 10 percent to over 35 percent. The remainder of the project site consists mainly of undeveloped, rounded hillside areas.

There is a single-family bungalow house located on the Berns/Ross property (475 Hillsdale Avenue) portion of the project site. The house is situated on a bench cut into a steep slope, which is accessed by a sloping, unimproved driveway. Below the house and nearer to Hillsdale Avenue is a detached single car garage that may be contemporary to the house. Two sheds are present on the property and appear to be of more recent construction (within the last 30 years).

Surrounding Land Uses

Overall, the project site consists of mainly undeveloped lands surrounded by residential land uses. There are also industrial, commercial, and public uses in the site vicinity.

Two microwave communications facilities are located on the two highest points on Communications Hill, adjacent to the project site. An existing AT&T communications tower, approximately 115 feet in height, is located adjacent to the northern portion of the site, at the top of Communications Hill. A paved access road, with a gate off Mill Pond Way, provides access to the AT&T communications tower. Portions of this access road are located on the site (refer to Figure 3).

The Santa Clara County communication center is located immediately northwest of the site. The County communication facility consists of a fenced area with numerous antennae, a

single-story building, and a parking lot. The facility operates 24 hours a day and includes approximately 40 daytime employees and 10-12 additional swing/night shift employees.

Approximately 15 single family detached residences, situated on one-acre lots, are located along Carol Drive (a private road) just northwest of the County communications facility. The Mill Pond Mobile Home Park is located north-northwest of the site, in the flat lands at the base of the hill and south of Curtner Avenue. The Dairy Hill (an approved residential project on the property between the Oak Hill Memorial Park and the Union Pacific Railroad) site is located east of the Mill Pond Mobile Home Park, and is bisected by the Union Pacific Railroad (UPRR) line. The Oak Hill Memorial Park is located farther north of the site, beyond the UPRR tracks. Undeveloped hillside areas are located northeast of the site, and the Chateau La Salle Mobile Home Park and the Redwood Mobile Home Park are located farther northeast of the site. The Azevedo Quarry has operated for over 20 years and is located east of the site (refer to Figure 3).

Hillsdale Avenue, a planned four-lane arterial roadway, runs along the southern boundary of the site, and a church and the Mountain Springs Mobile Home Park are located southwest of the site, north of Hillsdale Avenue. The Elk Ridge Estates Condominiums are southwest of the site, and the Helzer Ranch apartments are currently under construction to the southwest of the site, north of the Mountain Springs Mobile Home Park. State Route 87 (SR 87) is located west of the site (refer to Figure 3). There are several churches west of SR 87, and there are two water tanks present on the portion of Communications Hill west of SR 87.

2. Land Use Impacts

For the purposes of this project, a land use impact is considered significant if the project would exceed one or more of the following thresholds:

- be incompatible with surrounding land uses or with the general character of the surrounding area; or
- conflict with any applicable land use policy adopted for the purpose of avoiding or mitigating an environmental effect; or
- induce substantial growth or concentration of population; or
- disrupt or divide the physical arrangement of an established community; or
- conflict with established residential, recreational, educational, religious, or scientific uses of the area; or
- convert prime agricultural land to non-agricultural use, or impair the productivity of prime agricultural land or mineral resources; or
- result in the loss of a known mineral resource or locally-important mineral resource recovery site; or
- result in a substantial loss of open space; or
- expose substantial numbers of people to health or safety hazards.

Land Use Compatibility

Land use conflicts can arise from two basic causes: 1) a new development or land use may cause impacts to persons or the physical environment in the vicinity of the project site or elsewhere; or 2) conditions on or near the project site may have impacts on the persons or development introduced onto the site by the new project. Both of these circumstances are aspects of *land use compatibility*. Potential incompatibility may arise from placing a particular development or land use at an inappropriate location, or from some aspect of the

project's design or scope. Depending on the nature of the impact and its severity, land use compatibility conflicts can range from minor irritations and annoyance to potentially significant effects on human health and safety. The discussion below distinguishes between potential impacts *from* the proposed project *upon* persons and the physical environment, and potential impacts *from* the project's surroundings *upon* the project itself.

In essence, potential impacts from the project upon adjacent land uses would include substantial adverse effects upon the nature or operation of adjacent and nearby land uses, including other residences and the communications facilities. The potential impacts from the project's surroundings upon the project would include disturbance to future residents of the site and impacts to the function of the residential development.

Impacts From the Project

The proposed project would substantially change the character of the project site. It would replace vacant hillside land with high-density multi-family residential units, public streets, and open space areas. Activity on and around the site would increase, as would traffic in the vicinity. The proposed development would introduce a significant new population into a mostly undeveloped hillside and ridgetop area.

As discussed previously in Section I., F., Consistency with Plans & Policies, the proposed residential development is consistent with that approved in the Communications Hill Specific Plan (1992). The proposed residential uses would not be incompatible with existing and planned surrounding land uses. The project has been designed within the density, height, and setback parameters identified in the Specific Plan. The project is also compatible with the surrounding neighborhood because it extends the residential character of the area.

The existing AT&T communication tower facility has been incorporated into the conceptual site design and grading plan. The tower would eventually be surrounded by approximately six acres of park land, in order to buffer the tower from the residences. As identified in the Communications Hill Specific Plan EIR, development of the proposed residential uses would not significantly interfere with transmissions from the AT&T tower or the County's communications facility. The Specific Plan explicitly states that, in the event that future residences do interfere with transmissions from these communications facilities, it shall remain the communications facilities' responsibility to initiate mitigation measures.[4]

Based on the above discussion, and the previous conclusions in the Specific Plan EIR, the project would not result in significant land use compatibility impacts upon surrounding land uses.

- **The project, as proposed, would not result in a significant land use compatibility impact to nearby land uses, including the AT&T communication tower and the County's communications facility. (Less Than Significant Impact)**

Loss of Agricultural Land and Impacts to Mineral Resources

The Communications Hill Specific Plan EIR (1991) identified that Communications Hill has been designated as an aggregate resource of regional significance by the Surface Mining and Reclamation Act (SMARA) of 1975, and that development of this area would result in the

[4] A Specific Plan for Communications Hill, Prepared for the City of San Jose, Prepared by Solomon, Inc., Adopted by City Council April 7, 1992. p. 49.

loss of this resource. This was identified in the Specific Plan EIR as a significant unavoidable impact. This SEIR determines that this impact would remain unchanged. The proposed project would not result in any new impacts upon agricultural lands or mineral resources beyond those identified in the Communications Hill Specific Plan EIR.

- **Development of the project would result in a significant impact to mineral resources, as identified in the Specific Plan EIR. (Significant Impact)**

Loss of Open Space

Development of the project as proposed would cause residences and streets to replace open hillside land. As mentioned previously, portions of the upland areas of the site contain slopes greater than 15 percent. Generally these areas are not conducive to high-density residential development, and would limit the development potential of the site. As discussed in Section II. J., Visual and Aesthetics, of this SEIR, this replacement of visual open space with urban development would constitute a significant change in the visual character of the site, and in the rural hillside nature of the Communications Hill area.

The Communications Hill Specific Plan EIR (1991) identified the loss of open space resulting from the Specific Plan as a significant unavoidable impact. Development of the site with residential uses was approved in concept by the Communications Hill Specific Plan. Despite the fact that the project proposes approximately 78 acres of open space on the site, this SEIR determines that this impact would remain unchanged with the proposed project.

While development of the project site would constitute a change from its current condition, and that change would be particularly noticeable to residents on adjacent properties and travelers on nearby arterial roadways (refer to Section II. J., Visual and Aesthetics, of this SEIR), development on a property designated for urban uses, within a developed urban area, is specifically compatible with the environmental goals and policies of the City of San Jose's General Plan, and does not conflict with General Plan policies related to the preservation of open space.

- **Construction of the proposed project would result in the same significant loss of open space impact as identified in the Specific Plan EIR. (Significant Impact)**

Construction Impacts

Construction of the project, including construction of the associated infrastructure, would involve earthmoving, grading, delivery of construction materials, and the construction itself with the use of power equipment, possibly pile drivers, concrete trucks, and other sources of noise, dust, and traffic. While the volume of cut and fill on the site is expected to balance, there is the potential for the export or import of up to 300,000 cubic yards of soil for the project, which would result in approximately 24,000 truck trips to and from the site. In addition, it may be necessary to use explosives if large, resistant rock material is found in areas that would affect slope stability or project construction (refer to Section II, B, Geology and Soils). The issues of dust and noise are also discussed in Sections II, G, Air Quality, and II, H, Noise, of this EIR, respectively. While construction impacts are temporary in nature, and can be reduced in their severity, the size of this project means that rough grading would last approximately six (6) months.

The construction activities would create at least annoyance level disturbances for the nearby land uses, particularly for the land uses adjacent to the site, including the residences and the

Santa Clara County communications offices. Even though the impacts would be temporary, the combination of noise, dust and vehicular activities would constitute a significant change in conditions, and could be significantly disruptive.

- **Construction activities would result in significant physical disturbance, and could cause temporary disruption to the adjacent land uses. (Significant Temporary Impact)**

Impacts to the Project

The potential impacts to future occupants of the project from noise are discussed in Section II. G., of this SEIR. Other possible sources of land use impacts to the project include effects from land uses located on and adjacent to the site, such as the AT&T communication tower, the Santa Clara County communications facility, the Azevedo quarry, and the Santa Clara County Fairgrounds.

However, the AT&T tower and County communication facility do not generate much physical activity or disturbance, with the exception of workers arriving to and leaving these facilities. Therefore, the operation of these facilities would not impact the proposed development, and these communication facilities are not considered to be incompatible with the project. The potential health and hazard risks associated with locating residential uses near these communications facilities are discussed in Section II. E., Environmental Hazards and Hazardous Materials, of this SEIR.

- **Existing land uses on and adjacent to the project site would not result in significant land use impacts to the project. (Less Than Significant Impact)**

3. Mitigation Measures for Land Use Impacts

CEQA requires that an EIR identify possible mitigation for each significant impact which might result from the project, and that the EIR distinguish between mitigation proposed to be included in the project, and other mitigation measures which are not proposed but which might reasonably be expected to reduce or avoid the significant impacts.

Mitigation Measures Proposed by the Project

The following mitigation measures are proposed as part of the project to reduce potential land use impacts to a less than significant level.

- The project would implement a Construction Management Plan to minimize impacts on the surrounding sensitive land uses, particularly the nearby residences, to the fullest extent possible. As part of the Construction Management Plan, a construction liaison designated by the project applicant would coordinate information regarding construction phasing/operations and keep the neighborhood informed of the stages of development. The construction liaison would also listen and respond to neighborhood concerns regarding construction. The Construction Management Plan would also include the following measures to minimize impacts of construction upon adjacent sensitive land uses:

    - Early and frequent notification and communication with the neighborhood of the construction activities, including the onset, expected consequences, and actual

consequences of various construction activities, as well as a commitment to, whenever possible, reduce problems that result to those land uses.

- Measures to control dust, noise and water pollution resulting from construction activities (refer to Sections II. C., Water Quality, II. G., Air Quality, and II. H., Noise, of this report).
- Measures to keep all streets and public ways clean of debris, dirt, dust and other undesirable outcomes of construction activities.
- Measures to control noise by limiting hours of operation of construction activities, avoiding more sensitive early morning and evening hours, and scheduling equipment selection (refer to Section II. H., Noise, of this report).
- Plans for activities that would generate significant noise and dust to occur as far from sensitive uses as possible.

- Mitigation measures for traffic, noise, air quality, and visual impacts are identified within their respective sections of this EIR. Mitigation measures to minimize construction-related air quality and noise impacts are also provided within their respective sections of this EIR.

Conclusion: **The project, as proposed, would not result in significant long-term land use conflicts with established or planned adjacent land uses. (Less than Significant Impact) Development of the project would result in the same significant impact to mineral resources as identified in the Specific Plan EIR. (Significant Unavoidable Impact) Construction of the proposed project would result in the same significant loss of open space impact as identified in the Specific Plan EIR. (Significant Unavoidable Impact) With implementation of the above measures, the short-term land use impacts resulting from project construction would be reduced to a less than significant level. (Less than Significant Impact with Mitigation)**

B. GEOLOGY AND SOILS

The following discussion is based upon the Communications Hill Specific Plan EIR, a preliminary geotechnical investigation of the project site conducted by Lowney Associates in August, 2000 and updated in October, 2000, as well as other available information. A copy of the geotechnical report is provided in Appendix A of this SEIR.

1. Existing Setting

The project site is located on Communications Hill, a bedrock ridge that rises above the relatively flat Santa Clara Valley, in the Coast Ranges province of central California. The Communications Hill area is surrounded by the broad alluvial plain of the Santa Clara Valley, which is primarily underlain by Holocene and Pleistocene alluvial deposits.

Surface Conditions and Topography

The project site is located on a hill that rises above the relatively flat Santa Clara Valley and ranges in elevation from approximately 150 feet above mean sea level (msl) in the southwest corner of the site to approximately 430 feet msl at the top of the Vieira property. Communications Hill is bisected by the SR 87 freeway (refer to Figure 3).

Vieira Property

The approximately 65-acre Vieira property is located on the southwestern portion of Communications Hill and is comprised of three ridges and two large colluvial swales that converge near the lower portion of the property. Elevations on this property range from approximately 150 feet msl adjacent to the existing Mountain Springs Mobile Home Park to approximately 420 feet msl on the ridge top that forms the northwestern property boundary. Existing slopes across the site are mostly 3:1 (horizontal:vertical), but range to as steep as 2:1.

Long-Kwei Property

The approximately 27-acre Long-Kwei property is located on the southwestern portion of Communications Hill immediately adjacent to the Vieira property. This property is comprised of three ridges and two colluvial swales that converge near the lower portion of the property. Elevations on this property range from approximately 220 feet msl adjacent to the newly constructed townhouses at the base of the hill to approximately 400 feet msl on the ridge top that forms the northwestern property boundary.

Existing slopes across the site generally range to as steep as approximately 3:1. Grading for the adjacent townhomes has modified the hillside along the proposed western property boundary. Extensive retaining walls have been constructed as part of the grading for the townhomes.

Berns/Ross Property

The approximately 18-acre Berns/Ross property is located immediately adjacent to the Long-Kwei property on the southern portion of Communications Hill and is essentially comprised of one ridge and two colluvial swales that converge near the lower portion of the site. Elevations on the site range from approximately 155 feet msl adjacent to Hillsdale Avenue to approximately 320 feet msl on the ridge top at the northern property boundary.

Geology and Soils

Site geologic mapping has indicated that the upper reaches of Communications Hill are underlain by pervasively sheared serpentinite, and the lower reaches of the site are underlain by sandstone and claystone with alluvium and colluvium infilling the valley areas.

Franciscan Complex

Bedrock underlies thin soils and thicker colluvium on the topographically elevated portions of the site. The bedrock on the site is composed of Franciscan complex serpentinite, sandstone and siltstone/claystone. Serpentinite is present on the ridges and ravine sidewalls on the site. The serpentinite is highly foliated and is moderately fractured, normally breaking into fragments up to eight inches in size. The serpentinite was generally hard in the site area. Portions of the area mapped as serpentinite also include units of interlayered hard, strong, slightly weathered basalt.

Silty and coarse-grained sandstone, with extensively fractured units of interbedded siltstone and claystone underlay the lower portions of the site. The rock is generally moderately weathered to fresh, and moderately hard to strong. In some localized areas, the bedrock can be characterized as completely weathered and weak. The sandstone has a blocky fractured structure, breaking along the fractures into blocks between one and six inches in size.

Alluvium

The flat-lying areas at the base of the hills and the low-lying areas surrounding the project site are underlain by Holocene and Pleistocene alluvium. This material typically consists of unconsolidated silty and clayey sand and gravel fluvial deposits. The valley alluvium is capped by silty clay soils.

Colluvium

Colluvium is present within the small swales and drainages on-site. The colluvium showed evidence of soil slumps and active soil creep in many areas. The colluvium varies in thickness and is at least 10 feet thick in the larger ravines. The colluvium encountered consisted of soft to medium stiff, silty clay with varying amounts of sand and gravel.

Artificial Fill

During site visits, several areas of undocumented fill materials were located near the existing residence structures on the Berns/Ross property. The fill material appeared to be composed of a heterogeneous mixture of soil and rock, of varying thickness and densities, and may be non-engineered fill materials.

Subsurface Conditions

Based on subsurface investigations of the site, the hillsides are generally blanketed by a 1-3 foot thick layer of residual soil consisting of medium stiff to stiff, silty clay. The on-site clays have high expansion potential. These near-surface soils are underlain by predominantly hard and strong serpentinite bedrock, as described above. Thin beds of very hard basalt were encountered at depths as shallow as 17 feet within the serpentinite at several locations on the Vieira property.

As described previously, softer and more weathered sandstone and claystone bedrock comprise topographically lower portions of the site. Borings also encountered highly expansive colluvial soils within the drainage ravines up to approximately 10 feet thick.

Landslide Potential

Based on field surveys and review of available information, no significant landslides or debris flows are present on the project site. Much of the south-facing hillslopes of the project site, however, are included in the newly released Seismic Hazard Zone Maps for earthquake-induced landsliding. Swales filled with surficial soil and colluvium derived from weathering of the Franciscan bedrock showed some signs of localized slumping.

Soil Creep

Soil creep was also evident, and is expected, on the steep slopes on Communications Hill. Such movement is generally slow and gradual and is generally the result of seasonal expansion and contraction of the upper few feet of soil under the influence of gravity.

Expansive Soils

Expansive soils have been identified at the project site. Expansive soils can undergo significant volume change with changes in moisture content. In general, expansive soils shrink and harden when dried and swell and soften when saturated. Such changes can cause distress to building foundations and structures, slabs on grade, pavements, and other surface improvements. Expansive soils are also generally a contributing factory to soil creep on slopes.

Asbestos-containing Rock

The mineral chrysotile is commonly found in serpentinite areas and is a predominant serpentine mineral, known commonly as asbestos. Serpentinite is found on the hillslopes throughout the site. Chrysotile-bearing veins were observed in serpentinite rock exposures. No veins were observed in the borings or pits on the low-lying portions of the site underlain by sandstone, claystone or alluvium.

Eleven samples of the colluvial and residual soils encountered in borings on the Vieira property were analyzed for asbestos concentrations. No asbestos was identified in any of the samples. However, previous testing of the serpentinite rock identified asbestos concentrations above one percent, which exceeds the hazardous waste classification threshold.[5]

Groundwater

Groundwater was encountered in one boring on the Berns/Ross property at a depth of approximately 13 feet. Groundwater was not encountered in any of the borings or test pits to a depth of 70 feet on the Vieira hillsides or within the colluvium-filled ravines. It should be

[5] Terrasearch Inc., Geotechnical Engineers and Geologists, Geotechnical Investigation on Proposed Residential Development Communication Hill, APN 455-10-32,33, Hillsdale and Narvaez Avenues, San Jose, California, October 15, 1998 and Lowney Associates, Inc., Draft Geotechnical Investigation for Vieira Property, Residential Development, San Jose, California, November 11, 1999. p. 10.

noted that all borings were backfilled after drilling, and may not have been left open for a sufficient period of time to establish equilibrium ground water conditions.

During grading of the development project located west of the site (the Helzer Ranch residential project), abundant subsurface water and springs were exposed as a result of the hillside cutting. Numerous subdrains were installed into the development to collect the subsurface water and transmit the water to storm drains and drainage inlets. Similar subsurface water conditions are anticipated for the Berns/Ross portion of the project site.

Seismicity and Faults

The project site is located in a seismically active part of northern California. The Uniform Building Code designates the entire South Bay area as Seismic Activity Zone 4, the most seismically active zone in the United States. Earthquakes are generated on strike-slip faults of the San Andreas Fault system as the Pacific and North American Tectonic Plates slide past each other. Earthquakes may also occur on low angle thrust faults in the Coast Ranges.

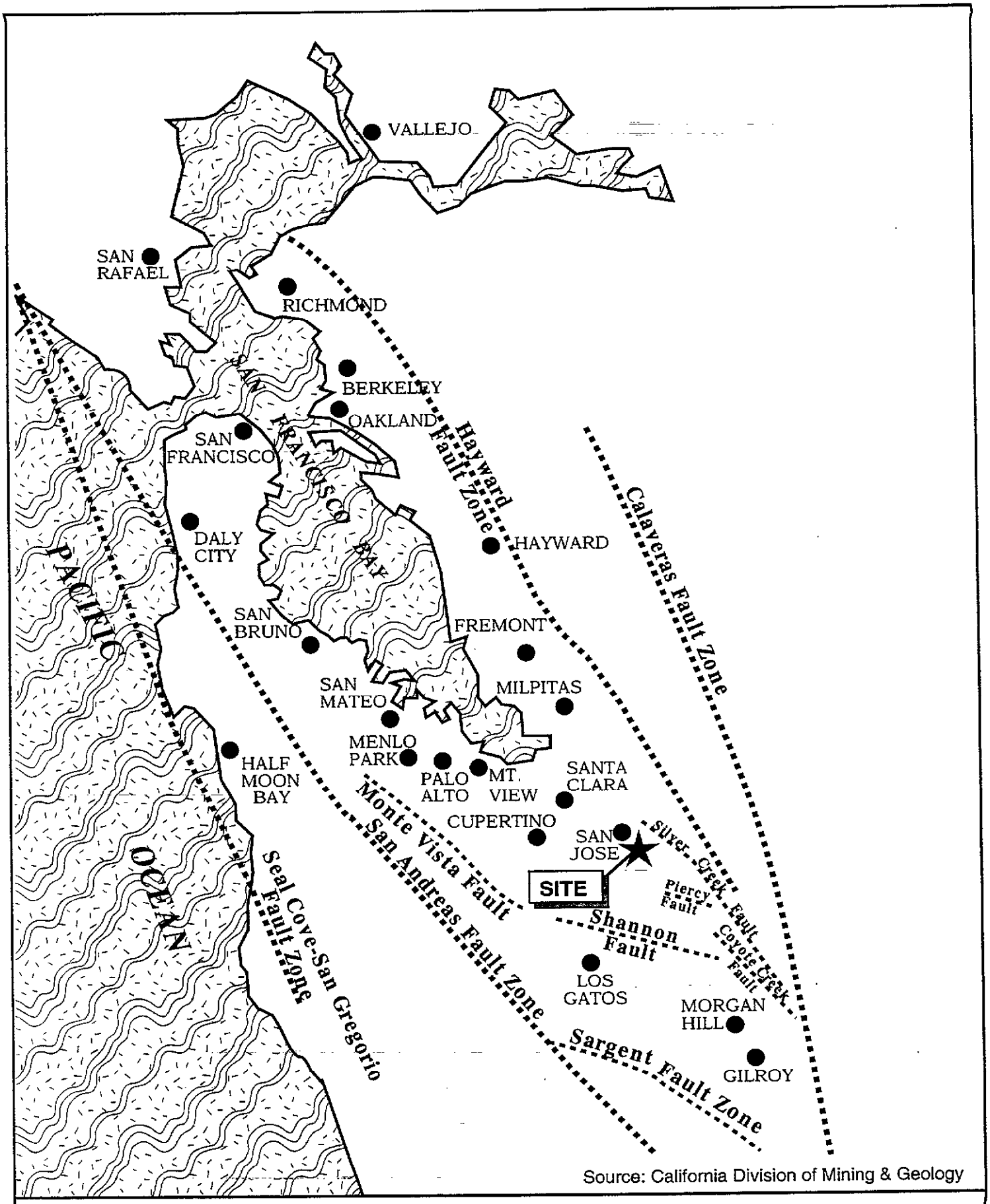
The Alquist-Priolo Special Studies Zones Act became law in 1973. The purpose of the act is to prevent structures occupied by humans from being located astride traces of active faults (*i.e.*, faults that have experienced surface displacement in the last 11,000 years) and to reduce the hazards from surface ground rupture. The California Division of Mines and Geology (CDMG) distributes fault hazard maps showing known active faults. The principal known faults of the project site region are shown on Figure 8.

The project site is not within a currently designated Alquist-Priolo Zone or a City of San Jose Potential Hazard Zone. No known active or potentially active faults pass through the project site. Therefore, fault surface rupture at the site is not anticipated.

Many faults exist in the southern San Francisco Bay Area and some of them are capable of producing ground motions that can affect the project site. These regional faults include the San Andreas, Hayward, and Calaveras Faults, as well as many smaller local ones. The project site is located approximately 10 miles northeast of the San Andres Fault, and is located approximately 6.5 miles and 8.5 miles southwest of the Hayward and Calaveras Faults, respectively. The Monte Vista-Shannon Fault is also considered active and is located approximately 4.5 miles southwest of the site.

Other large regional faults capable of producing major earthquakes are the Sargent-Berrocal fault zone and the Seal Cove-San Gregorio fault zone. Because of their distance, however, the ground accelerations they would produce at the project site would be less than those produced by a maximum earthquake on the San Andreas, Hayward, or Calaveras Fault.

Smaller local faults that have been mapped in the South San Francisco Bay area include the Berryessa, Cascade, Clayton, Coyote Creek, Crosley, Evergreen, Monte Vista, Quimby, San Jose, Santa Teresa, Shannon, and Silver Creek Faults. These faults are either too small to generate ground shaking greater than that which can be produced by the Hayward, Calaveras, and San Andreas Faults, or they do not show evidence of Holocene activity. Of these, only the Evergreen Fault shows enough evidence of Holocene activity to be zoned under the Alquist-Priolo Act.



Source: California Division of Mining & Geology

POTENTIALLY ACTIVE FAULT ZONES IN THE PROJECT AREA FIGURE 8

The Silver Creek Fault is projected to be located approximately three miles northeast of the project site. The Silver Creek Fault has not been shown conclusively to have ruptured during Holocene geologic time and is not shown on the most recent set of fault hazard maps issued by CDMG pursuant to the requirements of Alquist-Priolo Act. However, the City of San Jose has zoned the Silver Creek Fault as potentially hazardous and prohibits construction across the fault trace.

Liquefaction

Soil liquefaction results from a loss of soil strength during seismic events. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, and fine-grained sands. Sands were not encountered in the borings or test pits on the site. The site is located within an area previously designated as having a low potential for liquefaction. In addition, the relatively thin clayey residual alluvial and colluvial soils at the site are underlain by serpentine, claystone, and sandstone bedrock. For these reasons, the potential for liquefaction on the site is considered very low during seismic shaking.

Differential Compaction

When near-surface soils vary in composition, both vertically and laterally, strong seismic shaking can cause non-uniform compaction of the soil strata, resulting in movement of the near-surface soils. Factors that affect this hazard include soil composition and consistency, the magnitude of loading on native soils, such as from fills and structures, and other abrupt changes in thickness or consistency. Because the site is underlain by shallow bedrock, and because all proposed fill areas would be compacted to standard compaction requirements, the potential for differential compaction on the site is considered low. Existing undocumented fill materials will be removed and recompacted.

Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or "free" face, such as an open body of water, channel, or excavation. Generally, this type of failure is due to a failure along a weak plane, and may be associated with liquefaction. A significant factor for lateral spreading is the presence of loose, shallow, saturated sands. As mentioned above, the site is located within an area designated as having a low potential for liquefaction. Because there are no creeks or substantial open bodies of water within the development area, the potential for lateral spreading at the site is low.

Flooding Potential Due to Tsunami and/or Seiche

The March 1982 Santa Clara County General Plan identified 12 dams in Santa Clara County that could inundate downstream areas should dam failure occur. None of these dams would be expected to inundate the project site if a failure occurred. The site is located several miles inland from the San Francisco Bay shoreline and well beyond the projected run-up from the Bay of seismically-generated tsunamis. Therefore, the potential for inundation due to tsunami and/or seiche is considered remote.

2. Geologic and Soils Impacts

For the purposes of this project, a geologic impact is considered significant if the project would:

- be located on a site with geologic features which pose a substantial hazard to property and/or human life (i.e., an active fault, active landslide); or
- expose people or property to major geologic hazards that cannot be mitigated through the use of standard engineering design and seismic safety design techniques.

Geologic and Soils Impacts

Compressible Soils

As described above, colluvial surface soils are located on portions of the project site. These soils are potentially compressible, and proposed residential structures and street improvements could be subject to compression and settlement. Compression of soils on the site could result in significant structural damage to future homes due to settlement.

- **The presence of compressible soils on the site could present a significant impact to the project. (Significant Impact)**

Existing Fill Material

A number of relatively small pockets of undocumented fills exist on the site, mainly surrounding the existing residential buildings on the Berns/Ross property. These existing fill materials appear to be non-engineered and could be heterogeneous, weak, and potentially compressible. Development placed on these fill materials could experience detrimental movements. Therefore, the project proposes to remove these materials from the site prior to project construction. The exact extent of the fill removal would be determined in the field by the Geotechnical Engineer at the time of project construction. With implementation of this standard measure, the project would not be subject to significant impacts due to the presence of non-engineered fill on the site.

- **The presence of non-engineered fill materials on the site would not present a significant impact to the project. (Less Than Significant Impact)**

Slope Stability and Landsliding

Based upon field surveys and review of available information, no significant landslides or debris flows are present on Communications Hill that could impact the project area. Much of the south-facing hillslopes of the project site, however, are included in the newly released Seismic Hazard Zone Maps for earthquake-induced landsliding. Swales with accumulated colluvial soils are common on the flanks of Communications Hill. The colluvium-filled swales commonly show signs of creep and occasional small slumps. At all areas of the site where thick colluvium is present and grading is proposed, the colluvium is likely to be unstable and require removal to protect future structures and improvements on the site. More specific recommendations will be provided in the design-level investigation report prepared for the project, including the potential for seismically-induced landsliding on existing slopes and seismic performance of the proposed cut and fill slopes. These evaluations will be performed in accordance with the CDMG Special Publication 117 (CDMG, 1997).

The bedrock on-site is highly fractured and may contain weak localized zones. Franciscan serpentinite and sedimentary bedrock can be susceptible to instability where foliation planes or other planes of weakness are adversely oriented. No adverse bedding, foliations, or jointing failure conditions were observed in the outcrops on-site. However, grading operations and construction of the proposed residences in areas of weak bedrock stability could present a significant geologic impact if adverse conditions are created.

- **The presence of potentially unstable colluvial soils and Franciscan bedrock on the site could significantly impact future residential structures and improvements on the site. (Significant Impact)**

Project Cut and Fill Soil Stability and Settlement

Cut/Fill Transitions

The project grading plan indicates that some of the proposed lots will include both cut and fill areas. Shallow foundations, such as mats or footings, constructed of cut/fill transitions could experience differential movements under static and seismic loading conditions. Differential movement on these lots could significantly impact future residential structures on the site.

Thick Fill Areas

The project grading plan also indicates that fills ranging to 85 feet in thickness are proposed beneath portions of the proposed development. Foundations constructed over deep fills would be subject to long-term settlement. Even well-compacted fills may experience long-term settlements due to secondary strains or hydrocompression. Differential settlement due to varying fill material thickness could impact residential structures on the site.

Due to the variable, potentially compressible nature of the colluvial soils on portions of the site, the presence of these soils could significantly impact residential structures on the site.

Fill Slope on Southeast Portion of Site

The proposed project will require the construction of an approximately 160-foot high fill slope along the southeastern edge of the site. This fill slope will be inclined at an overall slope of approximately 2.5:1 (horizontal:vertical), and the slope will be constructed primarily of serpentine bedrock excavated from deep cut areas along the eastern edge of the Vieira property. A layer of clayey soil up to two feet thick would be constructed at the face of the slope to cap the serpentinite fill. The potential impacts associated with this fill slope include instability during static and seismic conditions, as well as the potential for surficial sloughing of soils along the slope face.

Based on samples from test pits and borings on the site, serpentinite rock is generally moderately weathered, blocky, hard, and strong. Therefore, this rock is anticipated to behave as a predominantly granular material with a relatively high internal friction angle and low cohesion. Based upon an analysis of this proposed fill slope by Lowney Associates (1999), the slope would have safety factors that are acceptable for the proposed project development. This fill slope could be designed to include geogrid reinforcing strips along the outer edge of each fill bench. Therefore, this slope is not anticipated to impact the proposed project.

- **Differential movement on lots with cut/fill transitions or large fill depths could significantly impact residential structures on the site. The presence of thick fill areas and fill slopes on the site could also impact future residential structures on the site. (Significant Impact)**

Asbestos-containing Rock

Asbestos-containing serpentinite rock is present along the ridgetops and the sidewalls of the ravines on the site. When this rock is disturbed during grading activities, there is a potential for release of asbestos fibers. In addition, after grading is complete exposed serpentinite soil areas could continue to release asbestos fibers. The potential health hazard impacts of asbestos present on the site are discussed in Section II, E, Environmental Hazards and Hazardous Materials, of this SEIR.

Expansive Soils and Bedrock

Much of the project site, particularly the low-lying areas of the site, is covered with several feet of moderately to highly expansive soils, which contributes to the creep observed on site slopes. Soils with high expansion potential could be subject to volume changes with fluctuations in moisture content. These soils shrink and harden when dried and expand and soften when saturated. Additionally, the claystone bedrock anticipated in the project cuts could be expansive. Fluctuations in the volumes of soils and bedrock on the site could result in significant structural damage due to settlement. However, potential impacts from the presence of expansive soils and bedrock would be reduced to a less than significant level by the use of standard engineering techniques proposed as part of the project.

- **Construction of the project, as proposed, on highly expansive soils and/or non-engineered fill would not result in significant structural damage by the use of standard engineering techniques. (Less Than Significant Impact)**

Seismic Hazards

Seismic Ground Shaking

The site is within the seismically active San Francisco Bay Area and strong to severe ground shaking is probable during the anticipated life of future residential development on the project site. Ground shaking on the site could damage buildings, roads, and utilities. The project would be designed and constructed in accordance with the Uniform Building Code guidelines for Seismic Zone 4, and in accordance with the 1997 UBC Seismic Near Source Zone requirements, to avoid or minimize potential damage from seismic shaking on the site. Potential seismic impacts would be reduced to a less than significant level by the use of standard engineering techniques mandated by the Uniform Building Code.

- **Development of the project, as proposed, would not expose structures and occupants to significant seismic ground shaking impacts. (Less Than Significant Impact)**

Sympathetic Rupture

The project site includes contact areas between the two subunits of the Franciscan Complex bedrock, the sandstone and siltstone/claystone areas and the serpentinite areas. These areas are planes of weakness that can rupture as a result of strong groundshaking during an earthquake on an unrelated fault. This is known as sympathetic rupture, which can cause displacement of the ground surface.

The Communications Hill Specific Plan EIR identified an area of potential sympathetic rupture, which is near the northwest portion of proposed project site (refer to Figure 7 of the Specific Plan EIR). The presence of this area of weakness on the site could result in impacts to future buildings and infrastructure in this area. As identified in the Specific Plan EIR, the maximum expected magnitude of surface displacement in the sympathetic rupture hazard zone is 1-2 feet. Because the sympathetic rupture hazard zone is not located within the proposed residential area, this is not considered a significant impact.

- **The project would not be subject to significant impacts from sympathetic rupture on the site resulting from seismic ground shaking. (Less Than Significant Impact)**

3. Mitigation Measures for Geologic and Soils Impacts

Mitigation Measures Proposed by the Project

The following mitigation measures are included as part of the project to reduce potential geologic and soils impacts to a less than significant level:

- A design-level geotechnical investigation for the project site would be completed to address the potential geologic hazards previously identified on the site and discussed above. The geotechnical investigation shall incorporate the information identified to date and provide supplemental field investigation and testing. The geotechnical investigation for individual buildings would be completed prior to the approval of building permits for specific buildings. The measures that are implemented shall be designed to ensure compliance with all applicable codes and regulations relating to foundation design, site preparation and grading, and to all significant geological hazards in accordance with standard engineering practices.

Geologic and Soils

Compressible Soils

- Due to the variable, potentially compressible nature of the colluvial soils located on portions of the site, these soils would be excavated and replaced with engineered fill. The potential impacts from these loose surficial soils would be mitigated by following the recommendations of the design-level geotechnical investigation addressing proper foundation design, site preparation, subgrade preparation, and grading.

Conclusion: **Implementation of the above mitigation measure, which is included in the proposed project, would reduce potential impacts from the presence of compressible soils on-site to a less than significant level. (Less Than Significant Impact with Mitigation)**

Existing Fill Material

- The potential impacts from non-engineered fill would be mitigated by following the recommendations of the design-level geotechnical investigation addressing proper foundation design, site preparation, subgrade preparation, and grading.

- Existing undocumented fill materials will be removed and recompacted.

Conclusion: **Implementation of the above mitigation measure, which is included in the proposed project, would reduce potential impacts from the presence of non-engineered fill on-site to a less than significant level. (Less Than Significant Impact)**

Soil Stability and Settlement

- In order to reduce the potential for differential movement beneath structures on lots with cut/fill transitions, building pads on these lots would be over-excavated to provide more uniform conditions for foundation support. Over-excavation would provide better seismic performance as well.

- Lots with large fill thickness would be over-excavated to provide a resulting differential thickness no greater than 10 feet and not exceeding a slope of 15 percent.

- Colluvial soils on-site would be excavated and replaced with engineered fill. Over-excavation would be required beneath residential lots or in areas where cut slopes do not completely remove surficial colluvial soils. It may be necessary to use explosives if large, resistant rock material is found in areas that must be over-excavated.

Conclusion: **Implementation of the above mitigation measures, which are included in the proposed project, would reduce potential impacts from differential settlement to a less than significant level. (Less Than Significant Impact with Mitigation)**

Expansive Soils

- In order to reduce the potential for damage to future structures and other improvements on-site, the expansive properties of the soils and bedrock will be considered in developing design recommendations for foundations, slabs on-grade, exterior concrete flatwork, pavements, and other site improvements. Supplemental grading recommendations to reduce potential impacts from expansive soil-related creep will be developed for hillside grading in the design-level investigation.

- Moisture changes in the soils on-site would be limited by using positive drainage away from buildings and by limiting landscape watering.

- Since substantial amounts of cuts and fills are proposed on the site, expansive soils could be buried a minimum of two (2) feet below the finished grade in the deeper fill in building and pavement areas. Alternatively, these soils could be used as capping material in landscaped areas.

Conclusion: **Implementation of the mitigation measures described above, which are included in the proposed project, would reduce potential impacts from expansive soils to a less than significant level. (Less Than Significant Impact with Mitigation)**

Slope Stability and Landsliding

- The potential impacts posed by landsliding in areas within the vicinity of the proposed structures would be mitigated by incorporating standard construction measures into project grading, drainage and foundation construction, and setting back structures from slopes. Specific measures would be identified in the project design-level geotechnical report prepared for the project, including the potential for seismically-induced landsliding on existing slopes and seismic performance of the proposed cut and fill slopes. These evaluations will be performed in accordance with the CDMG Special Publication 117 (CDMG, 1997). A registered engineering geologist would be present and inspect all slopes on site at the time of grading operations for indications of potentially unstable conditions. It may be necessary to use explosives if large, resistant rock material is found in areas that would affect slope stability or project construction.

Conclusion: **Implementation of the mitigation measure described above and included in the proposed project would reduce potential impacts from landsliding to a less than significant level. (Less Than Significant Impact with Mitigation)**

Cut and Fill Slope Stability

- The fill slope on the southeastern portion of the site would be constructed at an overall slope of 2.2:1 or 2.3:1 (horizontal:vertical).

- The cut slope on the eastern portion of the site would be graded at an overall slope of no steeper than 3:1 (horizontal:vertical). It may be necessary to use explosives if large, resistant rock material is found in this cut slope area.

- The project would construct keyways, intermediate benches, and proper surface drainage would be provided when constructing new cut and fill slopes.

- All new cut and fill slopes on the site shall be capped with up to two (2) feet of soil and landscaped to minimize erosion.

Conclusion: **Implementation of the mitigation measures described above and included in the proposed project would reduce potential impacts from cut and fill slope instability to a less than significant level. (Less Than Significant Impact with Mitigation)**

Asbestos-containing Rock

As described above, the mineral chrysotile is commonly found in serpentinite areas and is a predominant serpentine mineral, known commonly as asbestos. Serpentinite is found on the hillslopes throughout the site. Previous testing of the serpentinite rock identified asbestos concentrations above one percent, which exceeds the hazardous waste classification threshold. The potential for naturally-occurring asbestos to impact future residents on the site is discussed in Section II, E, Environmental Hazards and Hazardous Materials, of this EIR.

Seismic Hazards

- Seismic ground shaking hazards to the proposed project would be mitigated by utilizing construction practices in accordance with Seismic Zone 4 building criteria, as described in the San Jose Building Code and the Uniform Building Code, and in accordance with the 1997 UBC Seismic Near Source Zone requirements.

Conclusion: **Implementation of the mitigation measures described above and included in the proposed project would reduce potential seismic hazard impacts to a less than significant level. (Less Than Significant Impact with Mitigation)**

C. DRAINAGE, FLOODING AND WATER QUALITY

The following discussion is based upon a Hydrology Study prepared by *Schaaf & Wheeler, Consulting Civil Engineers*, for the project, as well as other available information. A copy of the Hydrology Study is provided in Appendix B of this SEIR.

1. Existing Setting

Hydrology and Flooding

The entire project site is located above the estimated 100-year flood[6] elevation for Canoas Creek and is part of the hillside area that drains to Canoas Creek. The average slope on the site is approximately 12 percent. The site would not be subject to 100-year flooding for FEMA purposes.

Canoas Creek

Canoas Creek is a tributary to the Guadalupe River and is a partially concrete-lined, trapezoidal channel, which is owned and maintained by the Santa Clara Valley Water District (SCVWD). Canoas Creek flows along the southwestern portion of Communications Hill and into the Guadalupe River to the northwest of the project site. The reach of Canoas Creek from the Guadalupe River to Hillsdale Avenue generally contains a levee on the west side. The east side of the creek generally follows the base of Communications Hill, without a levee.

Guadalupe River

The Guadalupe River is an alluvial stream that drains from the mountains of the Coast Range south of the project site and flows approximately north toward San Francisco Bay. The major tributaries of the Guadalupe River are Los Gatos Creek, Guadalupe Creek, Alamitos Creek, and Canoas Creek, and the river flows into Alviso Slough approximately 10 miles northwest of the site. The river channel has been improved[7] in certain reaches through the urbanized areas of the Santa Clara Valley floor.

The SCVWD and the U.S. Army Corps of Engineers (Corps) are in the process of completing the flood control project for the Lower Guadalupe River, which would provide 100-year design capacity from Interstate 880 (I-880) to Interstate 280 (I-280) in downtown San Jose. The project is currently scheduled for completion in 2003. The SCVWD has a supplemental project to provide 100-year capacity from San Francisco Bay to I-880. The SCVWD project is scheduled for completion in 2003. The reach upstream of I-280 does not have 100-year design capacity. The area near Alma Avenue and SR 87 has flooded several times in the past 20 years, including 1995 and 1998. The SCVWD has proposed a flood control project for the Upper Guadalupe River to provide 100-year capacity. The projected time frame for the project is approximately 20 years.[8]

---

[6] The 100-year flood, also referred to as the one-percent flood, has a one percent statistical probability of occurring in any year, or a return period of 100 years. The occurrence of a 100-year flood does not change the probability of a 100-year flood occurring in succeeding years. The 100-year flood is the standard design level of protection set by the FEMA, which is responsible for administration of the National Flood Insurance Program.

[7] "Improved" is a term used to describe engineered modifications made to a waterway, usually for the purpose of providing flood protection.

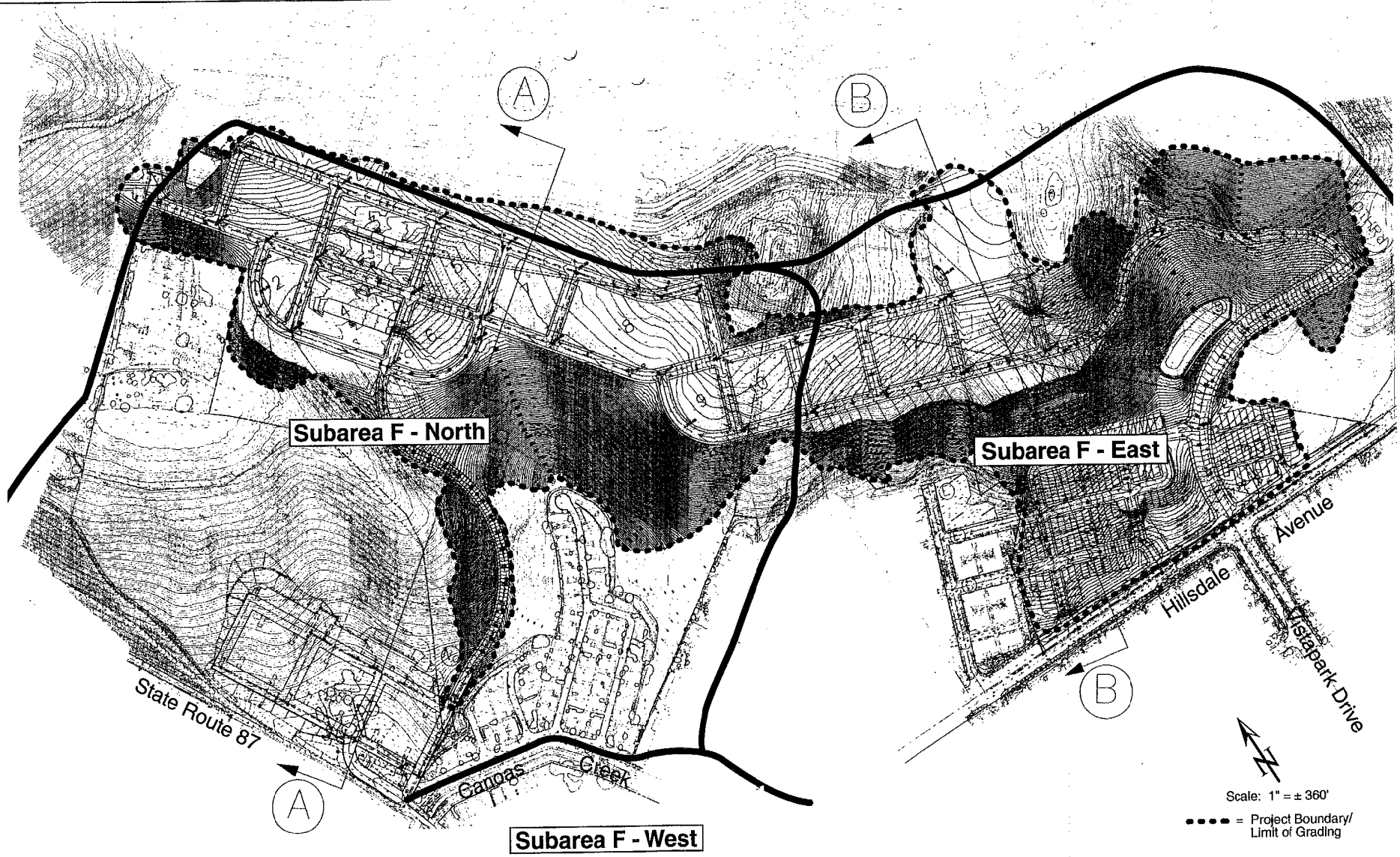
[8] Schaaf & Wheeler, Draft Hydrology Study, Communications Hill Project, September, 2000.

The project site is located within the Canoas Creek watershed area north of Capitol Expressway. This area is referred to as "Subarea F" in the Santa Clara Valley Water District's (SCVWD's) hydrology model of the watershed. In this model, Subarea F was divided into three subareas: Subarea F – North includes the Narvaez Avenue drainage and the southwest corner of Communications Hill that drains directly to Canoas Creek without levees; Subarea F – East includes the southeast portion of Communications Hill which drains to Hillsdale Avenue, and the development area south of Hillsdale Avenue to Capitol Expressway, which drains to Canoas Creek south of Hillsdale Avenue; and Subarea F – West which includes the portion of Subarea F west of Canoas Creek. The proposed project is located within Subarea F - North and Subarea F- East (see Figure 9). Subarea F - North essentially includes the portion of the Vieira property west of the AT&T communication tower. Subarea F - East essentially includes the Berns/Ross property, the Long-Kwei property, and the portion of the Vieira property east of the AT&T communication tower (refer to Figure 9).

The Subarea F - North portion of the project site drains directly to Canoas Creek without levees. The majority of this subarea is steep, and only a limited amount of storage is available. Runoff which does not enter the storm drain system would flow overland to the Canoas Creek channel with little or no ponding. The Subarea F - East portion of the project site drains to a 54-inch storm drain at Hillsdale Avenue that drains this area into Canoas Creek.

The existing runoff from each subarea was determined according to the SCVWD hydrology model. Based on the modified SCVWD procedure, the existing 10-year peak runoff for Subarea F - North is 113 cubic feet per second (cfs). The 100-year runoff for this subarea was estimated to be 173 cfs. The study also estimated that the existing 10-year peak for Subarea F - East is 116 cfs. The flow from Subarea F - East was routed through a generalized storm drain based on the SCVWD 1976 storage discharge relationship. After routing through the generalized storm drain system, the estimated 10-year flow rate was 50 cubic feet per second (cfs). The 100-year peak runoff from Subarea F - East is estimated to be 178 cfs for existing conditions. After routing through the storm drain system, the existing condition contribution to Canoas Creek was estimated to be 75 cfs.

The existing runoff conditions were also estimated using the SCS Curve Number (CN) methodology for the project site drainage areas. This methodology is part of the SCVWD's draft hydrology procedure, but has not been implemented for existing design flow for major streams. Refer to Appendix B for the analysis of existing drainage conditions according to the CN methodology.



Source: HMH, Incorporated (October, 2000)

CANOAS CREEK DRAINAGE SUBAREAS

FIGURE 9

Water Quality

The Guadalupe River watershed covers an area of about 90 square miles (not including Bay marsh areas and areas above upland reservoirs), with flows of 25,927 acre-feet per year. Various land uses occupy the Guadalupe River watershed, with each land use discharging different types of contaminants. Land uses within this watershed include industrial, residential/commercial, and open space.

Under existing conditions, the project site is vacant and most of it is unpaved. Some erosion occurs under existing conditions because the site is a hillside, with serpentine soils. Runoff from the site may currently contain agricultural chemicals, including pesticides, herbicides, and fertilizers. Concentrations of grease, oil and heavy metals in existing runoff would be expected to be lower than those for paved sites.

2. Drainage, Flooding and Water Quality Impacts

For the purposes of this project, a drainage, flooding or water quality impact is considered significant if the project would:

- increase the potential for flooding or flood related property loss or hazard to human life; or
- significantly increase peak stormwater runoff; or
- substantially degrade or deplete groundwater resources; or
- significantly increase stormwater pollution discharges to stormwater systems; or
- substantially degrade water quality.

Flooding and Drainage Impacts

The increase in impervious surfaces on the site associated with project development would result in an increase in runoff from the site. Increased impervious area, from both buildings and pavement, reduces the exposed soil and vegetation which traps rainfall. This affects both the peak flow rate and the total volume of runoff from a particular rainfall event. The peak flow rate affects the need for conveyance systems such as storm drains or ditches which carry runoff away. The total volume of runoff affects the need for disposal systems such as channel outfalls, detention ponds or pump stations which are the end points of the collection systems. The SCVWD has expressed concern that increased runoff from development in the Canoas Creek watershed may affect the existing flood conditions for flood plain areas downstream along Canoas Creek or the Guadalupe River.[9]

The SCVWD HEC-1 hydrology model was modified to evaluate the potential impact of the proposed project on the hydrology of Canoas Creek and the Guadalupe River. The existing condition on the project site was assumed to be 100 percent pervious surfaces. Because of the higher densities proposed on the project site, the development areas within the site were assumed to contain 80 percent impervious surfaces. However, because of the open space areas included on the site, the net percent impervious values for the overall project site are less than 60 percent. Refer to Appendix B for a detailed discussion of the methodology and assumptions used in the SCVWD hydrology model.

[9] Schaaf & Wheeler, Draft Hydrology Study, Communications Hill Project, September, 2000. p. 2.

Subarea F - North

Based on the modified SCVWD model, the 10-year peak runoff for Subarea F - North was estimated to be 125 cfs for development conditions, including the proposed project, an increase of 12 cfs over existing conditions. The majority of this increase in runoff within Subarea F - North would result from the proposed project. The Helzer Ranch project was estimated to contribute two (2) cfs of this increase. Therefore, the proposed project would contribute an increase of up to 10 cfs to the 10-year peak runoff flow.

The 100-year peak runoff was estimated to be 191 cfs for development conditions, including the proposed project, an increase of 18 cfs over existing conditions. The majority of this increase in runoff within Subarea F - North would result from the proposed project. The Helzer Ranch project was estimated to contribute two (2) cfs of this increase. Therefore, the proposed project would contribute an increase of up to 16 cfs to the 100-year peak runoff flow.

Subarea F - East

For Subarea F - East, the Hillsdale Avenue storm drain area, the 10-year peak runoff was estimated to be 132 cfs for development conditions, which consists mainly of the proposed project, an increase of 16 cfs over existing conditions. However, the modeled flow from Subarea F - East was routed through a generalized storm drain based on the SCVWD 1976 storage discharge relationships. After routing through the generalized storm drain system, the development conditions would contribute 53 cfs to the Canoas Creek channel flow, an increase of three (3) cfs above existing conditions.

The 100-year peak runoff for Subarea F – East was estimated to be 200 cfs for development conditions, which consists mainly of the proposed project, an increase of 22 cfs over existing conditions. However, after routing through the storm drain system, the contribution to Canoas Creek was estimated to be 78 cfs for development conditions, an increase of three (3) cfs above existing conditions.

There is a 54-inch diameter storm drain at Hillsdale Avenue that drains the area to Canoas Creek. The actual inflow to Canoas Creek would depend on the capacity of the storm drain, the street elevations outside Canoas Creek, and the available storage in the streets. During both the 10-year and 100-year flood events, the excess runoff in this subarea which cannot enter the storm drain system would pond in the streets, parking lots, and open space areas and flow overland to the stream channel.

Due to the limited capacity of the storm drain systems which drain to Canoas Creek and the large amount of storage in the watershed area, the peak flows in the channel last for a long period of time during the 100-year design storm event. The estimated 100-year peak flow rate at Capitol Expressway is 1,963 cfs, but the channel flow rate is over 1,800 cfs for more than 22 hours. Therefore, the increased runoff from Subarea F - North and Subarea F – East would contribute to the peak channel flows in Canoas Creek. Subarea F would contribute an approximately 18 cfs increase in the 100-year peak flow rate in Canoas Creek at the Guadalupe River, of which approximately 16 cfs would be caused by the proposed project. The 100-year peak flow rate in Canoas Creek at the Guadalupe River would increase by approximately 19 cfs, an increase of 0.89 percent. Most of this increase would be caused by the proposed project.

The runoff from the site under development conditions were also estimated using the SCS Curve Number (CN) methodology for the project site drainage areas. Refer to Appendix B for the analysis of existing drainage conditions according to the CN methodology.

The Canoas Creek channel has a capacity of approximately 1,950 cfs when the Guadalupe River water surface elevations are low. Based on previous hydraulic analyses, the Canoas Creek discharge capacity is limited to less than 800 cfs when the Guadalupe River water levels are high. For existing conditions, The estimated 100-year peak overflow from the Canoas Creek channel is approximately 160 cfs under existing conditions when the Guadalupe River is low. The potential 16 cfs increase in the channel flow resulting from the project would be a 10 percent increase in the estimated 100-year overflow from Canoas Creek. When the Guadalupe River water levels are high, the estimated 100-year overflow from the Canoas Creek channel would be approximately 1,300 cfs. Therefore, the potential 16 cfs resulting from the project would be a 1.2 percent increase in the estimated 100-year overflow from Canoas Creek.

The Canoas Creek channel overflow joins an additional 1,300 cfs west of the channel from upstream storm drain excess and an overflow from the Guadalupe River. The overflows flood the existing neighborhood at Nightingale Avenue and flow north toward Canoas Garden Avenue. Therefore, the potential 16 cfs increase in the 100-year Canoas Creek overflow could increase the flooding in the Nightingale Avenue and Canoas Garden Avenue areas. The City is currently designing a storm line for Redbird Drive that will drain to an outfall in the Guadalupe River. With approval of the outfall from the Santa Clara Valley Water District, this new storm drain line will improve drainage in the Canoas Garden area, but it will not alleviate flooding.

The City of San Jose has also included detention storage ponds within the Communications Hill Specific Plan, for areas that drain directly to Canoas Creek, in order to mitigate for the effects of increased flows due to development. The Specific Plan included detention ponds in both the Narvaez and Hillsdale drainage areas. The Helzer Ranch project includes two detention ponds that were designed to accommodate increased drainage from that project, as well as the proposed project. The Helzer Ranch project is under construction and these detention ponds were graded to the final design contours and capacities. The detention ponds have a maximum design water depth of approximately three (3) feet, and a required capacity of approximately 1.0 acre foot for the 100-year design storm. The proposed project has been designed to drain towards these detention ponds on the Helzer Ranch property. The outlet structure will be modified when additional drainage area is added to the system. The 10-year and 100-year peak flow rates at Narvaez Avenue with the project would not exceed the existing peak flow rates.

The project also proposes to construct an interim storm water detention basin on the northwest corner of the project site (refer to Figure 9). This detention basin would be approximately four feet deep and would have a capacity of one acre-foot of water. Storm flows from the northwestern portion of the site would be directed by gravity to this detention basin, stored temporarily, pumped by a force main and released through storm lines in the roadways to the detention ponds on the Helzer property. Once the peak flows have subsided in the Canoas Creek channel, the water in these ponds would be released into the creek. This would reduce the project's impact on peak flows in Canoas Creek. This interim detention basin would remain as part of the project until the adjacent property is developed according to the Communications Hill Specific Plan.

The project also includes a detention pond in the Hillsdale Avenue drainage system upstream of the Berns/Ross property. The detention pond was designed to accommodate increased drainage from the proposed project, as well as future development on Communications Hill in the Hillsdale Avenue drainage area. The proposed detention pond would have a maximum design water depth of approximately three (3) feet, and a required capacity of approximately 1.5 acre feet for the 100-year design storm. The 10-year and 100-year peak flow rates at Hillsdale Avenue with the project would not exceed the existing peak flow rates.

- **Although development of the proposed project would result in an increase in site runoff, the project proposes to connect to planned detention ponds and proposes to construct an interim detention pond to prevent increased runoff from increasing the potential for flooding along the Canoas Creek storm drainage system. (Less Than Significant Impact)**

Water Quality Impacts

The Specific Plan EIR identified that development of the Specific Plan area, including the project site, would increase the potential for stormwater runoff to carry a variety of pollutants into the Guadalupe River and other drainages. Street and pavement runoff often carries grease, oil, and trace amounts of heavy metals into natural drainages. The Specific Plan EIR also explained that unpaved areas would be landscaped and some portion of the pollutants would be filtered by vegetation en route to the river and creeks. As described above, drainage from the project site will flow to detention basins on the site or on the Helzer Ranch property, which will also allow for filtering and settling of pollutants. The Specific Plan EIR concluded that these water quality impacts would be less than significant. Because the project has been designed to conform to the Specific Plan, and because drainage from the site would be temporarily held in detention basins, the project's impact on water quality is also considered to be less than significant.

- **The project would result in less than significant water quality impacts to Canoas Creek and the Guadalupe River. (Less Than Significant Impact)**

3. Mitigation Measures for Drainage, Flooding and Water Quality Impacts

The project includes the following measures to ensure that water quality impacts are less than significant.

- The project would comply with the NPDES General Construction Activity Storm Water Permit, administered by the Regional Water Quality Control Board. Prior to construction grading, the applicant would file a "Notice of Intent" (NOI) to comply with the General Permit and would prepare a Storm Water Pollution Prevention Plan (SWPPP), which addresses measures that would be included in the project to minimize and control construction and post-construction runoff. The following measures would be included in the SWPPP:

    - Preclude non-storm water discharges to the storm water system.
    - Perform monitoring of discharges to the storm water system.

- The project would submit a copy of the draft SWPPP to the City of San Jose Department of Environmental Services for review and approval, prior to construction of the project.

- The project grading plans would conform to the drainage and erosion control standards adopted by the City of San Jose and would be approved by the City Public Works Department. The following specific measures would be implemented to prevent storm water pollution and minimize potential sedimentation of the Guadalupe River during construction:

    - Restrict grading to the dry season (April – October) or implement Best Management Practices for wet season grading.
    - Use silt fencing, straw wattles, or other agency approved measures to retain sediment on the project site.
    - Provide temporary cover of all disturbed surfaces to help control erosion during construction.
    - Provide permanent cover to stabilize the disturbed surfaces after construction has been completed.

- The project design would include features to minimize nonpoint source pollutants from entering Canoas Creek and the Guadalupe River. Such features would include the placement of vegetated swales where possible, and the installation of oil absorbing materials ("fossil filters") in the inlets of on-site catch basins.

- As part of the mitigation for post-construction runoff and pollutant discharges addressed in the SWPPP, the project would implement regular maintenance activities (i.e., sweeping, cleaning storm water inlets, litter control) at the site to prevent soil, grease, and litter from accumulating on the project site and contaminating surface runoff.

Conclusion: **Implementation of the above measures would further reduce potential water quality impacts of the project. (Less Than Significant Impact)**

D. BIOLOGICAL RESOURCES

The following discussion is based upon a biological inventory, wetland delineation, and tree survey of the project site conducted by *Olberding Environmental, Inc.* This biological assessment included a review of relevant background information, including the California Natural Diversity Data Base (CNDDB) and the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California*, as well as field investigations. Additional information on biological resources was prepared by *Live Oak Associates, Inc.* Copies of these reports are provided in Appendix C.

1. Existing Setting

Biotic Habitats of the Project Site

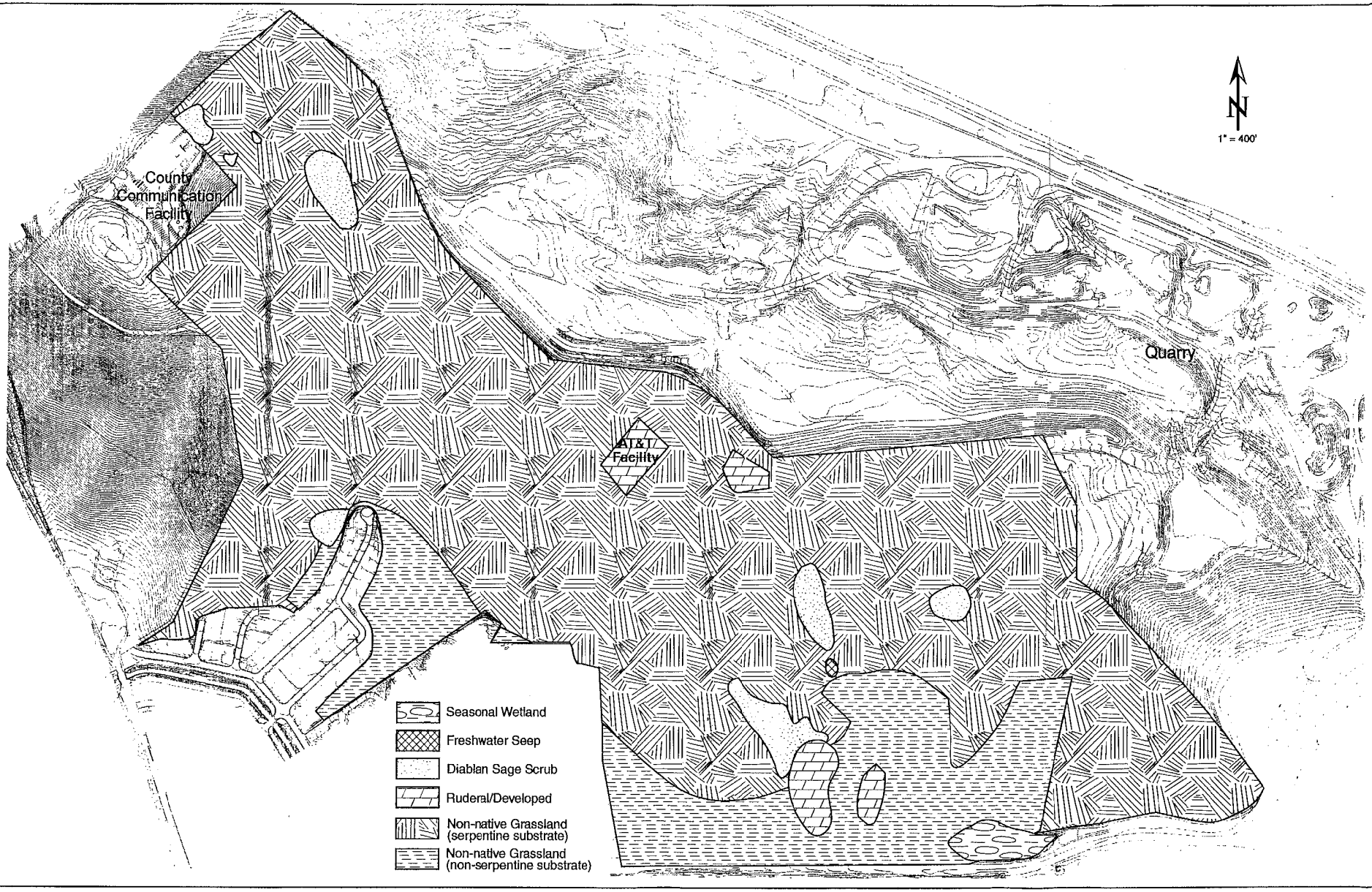
A total of 109 species of vascular plants were observed on the Communication Hill site. Of these, 69 species are native and 40 species are non-native. The classification and mapping of habitat types on the site closely follows that of H.T. Harvey and Associates (1992). Four habitat types were identified within the study area: non-native grassland; Diablan sage scrub; freshwater seep; and developed/ruderal. Two distinct phases of non-native grassland are recognized: one phase on serpentine substrate, and the other phase on non-serpentine substrate. Non-native grassland occupies most of the study area. Patches of Diablan sage scrub occur at several locations within the grassland. One small area of freshwater seep habitat occurs in the southern portion of the study area. The developed/ruderal habitat type, a habitat type associated with human occupation and intensive disturbance, encompasses the area around the AT&T communications facility and the two developed areas near the southeast end of the site. Each of these habitat types is briefly described below. Figure 10 depicts the distribution of habitat types within and in the immediate vicinity of the study area.

Non-Native Grassland

Non-native grassland occupies most of the Communication Hill study area. Two phases of this habitat type are recognized: non-native grassland on non-serpentine substrate, and non-native grassland on serpentine substrate. The non-native grassland on most of the site occurs on serpentine substrate. Non-native grassland on non-serpentine substrate is restricted to a few areas along the southern and western perimeter of the site.

The non-native grassland habitat type is characterized by a generally dense cover of grasses and associated herbs. Locally, especially where the soil is thin, the vegetation cover may be relatively sparse. The non-native grassland in the study area has been subject to varying intensities of grazing in the recent past, and cattle were present east of the north-south fence crossing the site at the time of the survey. A portion of the non-native grassland at the extreme southeast end of the study area was tilled for fire suppression sometime between 28 March and 14 May.

Although this habitat type is variable in species composition from place to place on both serpentine and non-serpentine substrate, species diversity on non-serpentine substrate is generally low at any one location. The dominant grasses are predominately non-native and annual. They include Italian rye grass (*Lolium multiflorum*, sometimes biennial), wild oat (*Avena barbata, A. fatua*), soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), and wall barley (*Hordeum murinum* ssp. *murinum*). The native perennial bunchgrass purple needlegrass (*Nassella pulchra*) is occasional. Herbaceous associates are predominately non-



BIOTIC HABITAT TYPES ON THE PROJECT SITE

FIGURE 10

native, and include prickly lettuce (*Lactuca serriola*), common vetch (*Vicia sativa* ssp. *sativa*), Italian thistle (*Carduus pycnocephalus*), black mustard (*Brassica nigra*), and yellow star thistle (*Centaurea solstitialis*). Italian thistle and black mustard locally form dense patches. Although less abundant than the non-natives, a number of native herbs are also widely distributed in this habitat type. These include California poppy (*Eschscholzia californica*), yarrow (*Achillea millefolium*), succulent annual lupine (*Lupinus succulentus*), common fiddleneck (*Amsinckia menziesii* var. *intermedia*), and common soap plant (*Chlorogalum pomeridianum*).

Because of the unusual chemical composition of serpentine substrate, serpentine soils, such as those occurring in the study area, constitute an inhospitable habitat for many plants. Largely because many common plants are poor competitors on serpentine substrate, or are excluded from that substrate entirely, the vegetation of serpentine areas is often quite different in physiognomy and species composition from the vegetation of adjacent areas underlain by other substrates. Some plant species are relatively well adapted to serpentine, and, throughout California, there are a substantial number of plant species that occur entirely or mostly on serpentine substrate. Some of these species are widespread and occur on serpentine outcrops over a wide area of the state, while other serpentine-restricted species are narrow endemics, occurring only on serpentine outcrops within a limited geographic area.

The species composition of the non-native grassland on serpentine substrate in the study area is often quite similar to that of the non-native grassland on non-serpentine substrate, and may be virtually identical in areas of deeper soil, especially in the northwestern portion of the study area and on ridgetops and lower slopes elsewhere. In areas where the soil is thinner and less well developed, especially on the upper halves of slopes, the vegetation density is often slightly less, but the species diversity is considerably enhanced by the widespread occurrence of a variety of native species. Native herbaceous species that seem especially characteristic of this habitat include butterfly mariposa lily (*Calochortus venustus*), many-stemmed gilia (*Gilia clivorum*), hill morning glory (*Calystegia subacaulis*), and peninsular onion (*Allium peninsulare* var. *franciscanum*). Numerous serpentine outcrops within this habitat support Santa Clara Valley dudleya (*Dudleya setchellii*), a special-status species (see subsequent discussion under Special-Status Species, below). Native perennial grasses occasionally occurring in this habitat, in addition to purple needlegrass, include Malpais bluegrass (*Poa secunda*), Torrey's melica (*Melica torreyana*), and California melica (*Melica californica*). California poppy is especially abundant in this habitat. Other characteristic native species include naked-stemmed buckwheat (*Eriogonum nudum*), blue dicks (*Dichelostemma capitatum*), hog fennel (*Lomatium caruifolium*, *L. dasycarpum*), purple sanicle (*Sanicula bipinnatifida*), vinegar weed (*Trichostema lanceolatum*), and cryptantha (*Cryptantha clevelandii*, *C. flaccida*). California plantain (*Plantago erecta*) is locally abundant where the soil is thin and gravelly and the vegetation cover is sparse. The native shrub California sagebrush (*Artemisia californica*) is locally widely scattered in the grassland, indicating areas transitional to the Diablan sage scrub habitat type (below). The native rhizomatous perennial grass creeping wild rye (*Leymus triticoides*) occasionally forms dense patches in areas of relatively gentle slope where the soil is seasonally moist.

Several large native herb species constitute a specialized element in the vegetation around some rock outcrops, especially toward the northwest end of the study area. These include California bee plant (*Scrophularia californica* ssp. *floribunda*), common phacelia (*Phacelia distans*), and California goosefoot (*Chenopodium californicum*).

Diablan Sage Scrub

Within the project site, this habitat type is overwhelmingly dominated by California sagebrush. California sagebrush is the only shrub species in this habitat type in the southern portion of the study area. In the northern portion of the study area, poison-oak (*Toxicodendron diversilobum*) and coffeeberry (*Rhamnus californica*) are occasional shrub associates. The shrub density is variable. In portions of the large stand of Diablan sage scrub near the south end of the site, shrub cover locally approaches 100 percent, but in most of the Diablan sage scrub on the site, the shrub cover is rather open, with well-spaced individual shrubs or small groups of shrubs. The areas between the shrubs are vegetated with a mostly dense cover of grasses and herbs that does not differ substantially in species composition from that of the adjacent non-native grassland. Most of this habitat type on the site is clearly transitional to the non-native grassland habitat type.

Wetland

Two small wetland areas occur on the site. The first is located at the bottom of a southeast-draining side canyon in the southern portion of the site. This 100 square foot (0.002 acre) freshwater seep is densely vegetated, primarily by the non-native species Italian rye grass and annual beard-grass (*Polypogon monspeliensis*) and the native species common large monkeyflower (*Mimulus guttatus*) and Spanish-clover (*Lotus purshianus*). The second wetland area is located in the southeastern corner of the site adjacent to Hillsdale Avenue. Vegetation observed in the wetland located on the southeastern corner of the site consisted of rabbit's foot grass (*Polypogon monspeliensis - FACW*), curly dock (*Rumex crispus*), Italian rye grass, heliotrope (*Heliotropium curvassicum* - OBL), and prickly lettuce (*Lactuca seriola - FAC*). This wetland includes an area of approximately 1.42 acres. Of this amount, approximately 0.35 acres occurs on the project site (within the Burns/Ross Property, west of the fence line). In addition to the two wetland areas, a non-vegetated intermittent drainage channel was identified in the southwestern canyon extending from the mobile home park. This defined drainage channel is approximately 75 feet in length and 2-3 feet wide. The drainage channel empties into a culvert at the property line.

Developed/Ruderal

This artificial habitat type consists of sites occupied by buildings and other developed facilities, associated landscaped areas, and adjacent areas where the original vegetation has been removed completely or intensively disturbed. On the Communication Hill site, this habitat type consists of the fenced-in area surrounding the AT&T communications facility and the two developed areas near the southeast end of the site. Within the AT&T facility perimeter fence, areas not occupied by the communications tower itself or graded and paved are occupied by ruderal species. The two developed areas near the southeast end of the site contain numerous planted trees and other landscaping plants, and are otherwise vegetated primarily by ruderal species. Also included in this habitat type is an excavated area south of the AT&T facility that is sparsely vegetated by ruderal species.

Animal Species of the Project Site

The Communication Hill project site is predominantly an open, dry grassland habitat interspersed with a smaller amount of Diablan sage scrub dominated by California sagebrush. Dense urban development occurs on all sides of Communication Hill. This oasis of grassland habitat provides an important foraging resource for a wide variety of wildlife species. Grasses in ungrazed ruderal grassland habitats are normally taller than native

grasses, and therefore wildlife species often differ between these two habitats. However, due to both the cattle grazing and soil types, the ruderal grasslands on the project site are relatively low in height. The grasses and forbs produce an abundance of seeds and attract numerous insects, providing food for granivorous and insectivorous wildlife, including lizards and skunks (*Mephitis mephitis*). Grasslands are productive habitats for small mammals, providing abundant food plants and cover. Burrows of Botta's pocket gopher (*Thomomys bottae*) were among the most numerous burrow types observed in these habitats on the site. California vole (*Microtus californicus*) burrows were also observed. The abundance of small mammals, insects and lizards in the grasslands provides valuable foraging sites for raptors such as hawks and owls, and other predators such as foxes, snakes, and long-tailed weasel (*Mustela frenata*). Other common species expected to occur include black-tailed jackrabbit (*Lepus califoricus*) and California ground squirrel (*Spermophilus beecheyi*), although burrows of these species were not observed. Reptiles observed include western fence lizard (*Sceloporus occidentalis*) and gopher snake (*Pituophis catenifer*). Pacific tree frogs (*Pseudacris regilla*) were heard in the quarry pond near Monterey Road and are likely to use mammal burrows in the grasslands. Other amphibians such as western toads (*Bufo boreas*) and California tiger salamanders (*Ambystoma californiense*) may also use mammal burrows in the vicinity of breeding ponds and/or mud crevices in grasslands during the non-reproductive season as aestivation habitat or while traveling between aquatic habitats. A road killed Western toad was found near the driveway to the house on the project site off Hillsdale Avenue.

The grassland habitat for ground nesting birds on the project site is degraded due to presence and high encounter rate of non-native red-foxes (*Vulpes vulpes*). Passerine birds observed in the grasslands habitat included northern mockingbird (*Mimus polyglottos*), western meadowlark (*Sturnella neglecta*), morning dove (*Zenaida macroura*), house finch (*Carpodacus mexicanus*), red-winged black bird (*Agelaius phoeniceus*), Western kingbird (*Tyrannus verticalis*), black-headed phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), California quail (*Lophortyx californicus*), song sparrow (*Melospiza melodia*), and several swallow species. Raptors that feed on small mammals in grassland habitat which were observed on the site include white-tailed kites (*Elanus caeruleus*), northern harrier hawk (*Circus cyaneus*), American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*) and common barn owl (*Tyto alba*).

Scattered through out the grassland are small, low rock outcrops. The rock formations and outcroppings found on the property often contain crevices and small cave-like features that provide habitat for lizards, snakes, and rodents and limited but potential roosting habitat for bats. Rock wren (*Salpinctes obsoletus*) was observed in a rock outcrop area with California sagebrush. Also within the project site is a grassland area with some coyote brush and California sagebrush scrub (nearest Carol Road), a small oak and eucalyptus grove (nearest Hillsdale Avenue and Highway 87). The tree and scrub habitats increase the potential for wildlife species richness as many species utilize grasslands for feeding and trees and shrubs for cover and/or nest sites. Red-tail hawks are currently nesting in the eucalyptus grove. The mature oaks near the eucalyptus grove (in the southwest portion of the property) are being utilized as a foraging roost by a barn owl (no nest). These mature oaks contain cavity branches with several beehives. The mature oaks on the southwest portion of the property also provide potential nesting and roosting habitat for bats, in the form of hollows and exfoliating bark. The oaks also provide potential roosting habitat for foliage roosting Western red bat (*Lasiurus blossevillii*) and Hoary bat (*Lasiurus cinereus*). The buildings on the project site off Hillsdale Avenue provide potential roosting habitat for big brown bat (*Eptesicus fuscus*), Yuma myotis (*Myotis yumanensis*) and pallid bat (*Antrozous pallidus*), especially in the tin roof shed.

Drainages in the southeast portion of the site drain to an ephemeral pond (seasonal wetland) just off the project site adjacent to Hillsdale Avenue. The ephemeral pond held some water in March but was completely dry in April. Although the project site primarily contains dry grasslands and sagebrush habitat, surface water for wildlife is generally available in the quarry pond near Monterey Road, in Canoas Creek off of Hillsdale Avenue (a tributary to the Guadalupe River), in a seasonal wetland near Vista Park Drive and Hillsdale Avenue, and in a ditch along the railroad tracks north of the project site. The non-aquatic, dry habitats of the project site were therefore evaluated as potential aestivation habitat for amphibians during their non-aquatic life-history stages.

Special-Status Plant and Wildlife Species

Special-Status Species Regulations

Several plant and animal species known to occur in the vicinity of the project site have been given special-status under federal or state endangered species legislation or otherwise have been designated as sensitive by state resource agencies or professional organizations whose lists are recognized by responding agencies when reviewing environmental documents. Such species are referred to collectively as "species of special-status".

The federal Endangered Species Act (ESA) of 1973 (16 USC 1531 *et seq.*, as amended) prohibits federal agencies from authorizing, permitting, or funding any action that would result in biological jeopardy to a plant or animal species listed as "threatened" or "endangered" under the Act. If a proposed project may jeopardize any listed species, Section 7 of the ESA requires consideration of those species through formal consultations with the USFWS. If a proposed project may jeopardize any species proposed for listing, Section 7 of the ESA affords consideration of those species through informal conferences with USFWS. The USFWS defines "candidate" species as "those taxa for which sufficient information is on file regarding biological vulnerability and threats to support listing actions." Federal candidate species are not afforded formal protection, although USFWS encourages other federal agencies to give consideration to Candidate species in environmental planning.

In addition to compliance with CEQA, project permitting and approval requires compliance with the 1984 California Endangered Species Act (CESA), and the 1977 Native Plant Protection Act (NPPA). The CESA and NPPA authorize the California Fish and Game Commission to designate endangered, threatened and rare species and to regulate the taking of these species (Sections 2050-2098 of the Fish & Game Code). The California Code of Regulations (Title 14, Section 670.5) lists animal species that are considered endangered or threatened by the State.

The Natural Heritage Division of the California Department of Fish and Game (CDFG) administers the State's rare species program. The CDFG maintains lists of designated endangered, threatened, and rare plant and animal species. Listed species either were designated under the NPPA or designated by the Fish and Game Commission. In addition to recognizing three levels of endangerment, the CDFG can afford interim protection to candidate species while they are being reviewed by the Fish and Game Commission.

The CDFG also maintains a list of animal species of special concern (SCS), most of which are species whose breeding populations in California may face extirpation. Although these species have no legal status, the CDFG recommends considering them during analysis of

proposed project impacts to protect declining populations and avoid the need to list them as endangered in the future.

Under provisions of Section 15380(d) of the CEQA Guidelines, the project lead agency and CDFG, in making a determination of significance, must treat non-listed plant and animal species as equivalent to listed species if such species satisfy the minimum biological criteria for listing. In general, the CDFG considers plant species on List 1A (Plants Presumed Extinct in California), List 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere), or List 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere) of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* as qualifying for legal protection under Section 15380(d). Species on CNPS List 3 or 4 may, but generally do not, qualify for protection under this provision.

Sensitive habitats include riparian corridors, wetlands, habitats for legally protected species and CDFG Species of Special Concern, areas of high biological diversity, areas providing important wildlife habitat, and unusual or regionally restricted habitat types. Habitat types considered sensitive include those listed on the California Natural Diversity Data Base's (CNDDB) working list of "high priority" habitats (i.e., those habitats that are rare or endangered within the borders of California).

While the legal protections for these species varies, CEQA Guidelines Section 15380 states that species not included in any listing identified shall nevertheless be considered to be "endangered", "rare" or "threatened", if the species can be shown to meet the criteria of these classifications.

A search of published accounts on the location of these species was conducted using California Natural Diversity Data Base (CNDDB), Rarefind reports (1994), and the California Native Plant Society *Inventory of Rare and Endangered Vascular Plants of California* (1988, 1994). The Santa Clara County Sensitive Natural Resource Base Maps, prior environmental documents and internal documents were also reviewed. Surveys were conducted for special-status plant and animal species' habitats in the project area. Particular attention was given to the occurrence of various plant communities of special concern and known associate species of these special-status plants and animals.

Special-Status Plant Species and Their Habitats

The special-status plant species with potential to occur in the vicinity of the project site are listed in Table 1.

Table 1
Special-Status Plant Species with Potential to Occur in the Vicinity of the Site

Scientific Name Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat[5]	Distribution by County[6]	Period Identifiable[6]
Acanthomintha lanceolata Santa Clara thorn-mint	None	None	1-2-3 List 4	Coastal scrub, chaparral, often serpentinite soil	ALA, FRE, MER, MNT, SBT, SCL, STA	March-June
Androsace elongata ssp. *acuta* California androsace	None	None	1-2-2 List 4	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland	ALA, CCA, COL, FRE, KRN, LAX*, MER, SBD, SBT, SCL, SDG, SIS, SJQ, SLO, TEH?, Oregon*, Baja California	March-June
Astragalus tener var. *tener* alkali milk-vetch	None	None	3-2-3 List 1B	Alkaline or adobe clay soil, playas, valley and foothill grassland, vernal pools	ALA*, CCA*, MER, MNT*, NAP, SBT*, SCL*, SFO*, SJQ*, SOL, SON*	March-June
Atriplex joaquiniana San Joaquin spearscale	SOC	None	2-2-3 List 1B	Alkaline soil, chenopod scrub, meadows, playas, valley and foothill grassland	ALA, CCA, COL, GLE, MER, MNT, NAP, SAC, SBT, SCL*, SJQ*	April -October
Azolla mexicana Mexican mosquito fern	None	None	1-2-1 List 4	Ponds, slow-moving streams, wet ditches	BUT, KRN, LAK, MOD, NEV, PLU, SCL, SDG, TUL, Baja California, Arizona, Nevada, Oregon, etc.	August
Calandrinia breweri Brewer's calandrinia	None	None	1-2-2 List 4	Sandy, loamy, or gravelly soil in chaparral, coastal scrub, generally on burns or disturbed places	CCA, LAX, MEN, MNT, MPA, MRN, NAP, SBA, SBD, SCL, SCR, SCZ, SDG, SLO, SMT, SON, VEN, Baja California	March-June
Calochortus umbellatus Oakland star-tulip	None	None	1-2-3 List 4	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, often on serpentine	ALA, CCA, MRN, SCL, SCR*, SMT	March-May
Campanula exigua chaparral harebell	None	None	1-1-3 List 4	Rocky areas in chaparral, usually serpentinite soil	ALA, CCA, SBT, SCL, STA	May-June
Castilleja affinis ssp. *neglecta* Tiburon Indian paintbrush	Endangered	Threatened	3-2-3 List 1B	Serpentinite soil, valley and foothill grassland	MRN, NAP, SCL	April -June

Table 1
Special-Status Plant Species with the Potential to Occur in the Vicinity of the Site (continued)

Scientific Name Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat[5]	Distribution by County[6]	Period Identifiable[6]
Ceanothus ferrisae Coyote ceanothus	Endangered	None	3-3-3 List 1B	Serpentinite soil, chaparral, coastal scrub, valley and foothill grassland	SCL	January-March
Chorizanthe robusta var. *robusta* robust spineflower	Endangered	None	3-3-3 List 1B	Sandy or gravelly soil, cismontane woodland, coastal dunes, coastal scrub	ALA*, MNT, SCL*, SCR, SMT*	April-September
Cirsium fontinale var. *campylon* Mt. Hamilton thistle	SOC	None	2-2-3 List 1B	Seeps in serpentinite soil, chaparral, cismontane woodland, valley and foothill grassland	ALA, SCL, STA	February-October
Clarkia breweri Brewer's clarkia	None	None	1-2-3 List 4	Chaparral, cismontane woodland, coastal scrub, often serpentinite soil	ALA, FRE, MER, MNT, SBT, SCL, STA	April-May
Clarkia concinna ssp. *automixa* Santa Clara red ribbons	SOC	None	2-2-3 List 1B	Chaparral, cismontane woodland	ALA, SCL	April-July
Dudleya setchellii Santa Clara Valley dudleya	Endangered	None	3-3-3 List 1B	Rocky areas in serpentinite soil, cismontane woodland, valley and foothill grassland	SCL	April-June
Eriogonum argillosum clay-loving buckwheat	None	None	1-1-3 List 4	Serpentinite or clay soil, cismontane woodland	MNT, SBT, SCL	March-June
Eriogonum luteolum var. *caninum* Tiburon buckwheat	None	None	?-2-3 List 3	Serpentinite soil in chaparral, coastal prairie, valley and foothill grassland	ALA, COL, LAK, MRN, NAP, SCL, SMT, SON*	June-September
Eriophyllum jepsonii Jepson's woolly sunflower	None	None	1-1-3 List 4	Chaparral, cismontane woodland, coastal scrub	ALA, CCA, KRN, SBT, SCL, STA, VEN	April-June
Eryngium aristulatum var. *hooveri* Hoover's button-celery	SOC	None	1-1-3 List 4	Vernal pools	SBT, SCL, SLO	July
Erysimum franciscanum San Francisco wallflower	SOC	None	1-2-3 List 4	Coastal dunes, coastal scrub, valley and foothill grassland, often serpentinite or granitic soils	MRN, SCL, SCR, SFO, SMT, SON	March-June

Table 1
Special-Status Plant Species with the Potential to Occur in the Vicinity of the Site (continued)

Scientific Name Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat[5]	Distribution by County[6]	Period Identifiable[6]
Fritillaria liliacea fragrant fritillary	SOC	None	1-2-3 List 1B	Coastal prairie, coastal scrub, valley and foothill grassland in heavy clay soil	ALA, CCA, MNT, MRN, SBT, SCL, SFO, SMT, SOL, SON	February-April
Galium andrewsii ssp. *gatense* serpentine bedstraw	None	None	1-2-3 List 4	Rocky serpentinite soil, chaparral, cismontane woodland	ALA, CCA, FRE, MNT, SBT, SCL, SLO	April-July
Hemizonia parryi ssp. *congdonii* Congdon's tarplant	SOC	None	3-3-3 List 1B	Alkaline soil, valley and foothill grassland	ALA, CCA, MNT, SCL(*?), SCR*, SLO, SOL*	June-November
Isocoma menziesii var. *diabolica* Satan's goldenbush	None	None	1-2-3 List 4	Cismontane woodland	SBT, SCL	August-October
Lasthenia conjugens Contra Costa goldfields	Endangered	None	3-3-3 List 1B	Moist sites, valley and foothill grassland, vernal pools cismontane woodland, playas (alkaline)	ALA, CCA, MEN*, MNT, NAP, SBA*, SCL*, SOL	March-June
Lessingia hololeuca woolly-headed lessingia	None	None	?-?-3 List 3	Clay or serpentinite soil, broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland	ALA, MNT, MRN, NAP, SCL, SMT, SOL, SON, YOL	June-October
Lessingia micradenia var. *glabrata* smooth lessingia	SOC	None	3-2-3 List 1B	Serpentinite soil in chaparral, often disturbed areas	SCL	July-November
Linanthus ambiguus serpentine linanthus	None	None	1-2-3 List 4	Cismontane woodland, coastal scrub, valley and foothill grassland, usually serpentinite soil	ALA, CCA, MER, SBT, SCL, SCR, SJQ, SMT, STA	March-June
Linanthus grandiflorus large-flower linanthus	None	None	1-2-3 List 4	Coastal scrub, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, valley and foothill grassland, usually in sandy soil	ALA, KRN, MAD, MER, MNT, MRN, SBA*, SCL, SCR, SFO, SLO, SMT, SON	April-August
Malacothamnus hallii Hall's bush mallow	None	None	3-2-3 List 1B	Chaparral, coastal scrub	ALA?, CCA, MER, SCL, STA	May-September

Table 1
Special-Status Plant Species with the Potential to Occur in the Vicinity of the Site (continued)

Scientific Name Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat[5]	Distribution by County[6]	Period Identifiable[6]
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	SOC	None	1-2-3 List 4	Mesic sites in coastal prairie, broadleafed upland forest, chaparral, valley and foothill grassland,	KRN, LAX*, MEN, MNT, MRN, NAP, ORA*, SBT, SCL, SCR, SDG*, SLO, SMT(*?), SOL, SON	June-October
Piperia michaelii Michael's rein orchid	None	None	1-2-3 List 4	Coastal bluff scrub, closed-cone coniferous forest, chaparral, cismontane woodland, broadleafed upland forest, coastal scrub, lower montane coniferous forest	ALA, AMA, BUT, CCA, FRE, HUM, LAX*, MNT, MRN, SBA, SBT, SCL, SCR, SCZ, SFO, SLO, SMT, STA, TUL, TUO, VEN(*?), YUB	April-August
Plagiobothrys glaber hairless popcorn-flower	None	None	— List 1A	Alkaline meadows, coastal salt marshes	ALA*, MER*, MRN*, SBT*, SCL*	March-May
Plagiobothrys myosotoides forget-me-not popcorn-flower	None	None	1-1-1 List 4	Chaparral	FRE, SCL, TUL, South America	April-May
Psilocarphus brevissimus var. *multiflorus* delta woolly-marbles	None	None	1-2-3 List 4	Vernal pools	ALA, NAP, SCL, SJQ, SOL, STA, YOL	May-June
Ranunculus lobbii Lobb's aquatic buttercup	None	None	1-2-3 List 4	Vernal pools; seasonally wet sites in cismontane woodland, North Coast coniferous forest, valley and foothill grassland	ALA, CCA, MEN, MRN, NAP, SCL, SOL, SON, Oregon, etc.	February-May
Senecio aphanactis rayless ragwort	None	None	3-2-1 List 2	Alkaline soil, chaparral, cismontane woodland, coastal scrub	CCA, FRE, LAX, MER, ORA, RIV, SBA, SCL, SCT, SCZ, SDG, SLO, SOL, SRO, VEN, Baja California	January-April
Sidalcea malachroides maple-leaved checkerbloom	None	None	2-2-2 List 1B	Broadleafed upland forest, coastal prairie, coastal scrub, north coast coniferous forest, often in disturbed areas.	DNT, HUM, MEN, MNT, SCL, SCR, SON, Oregon	May-August
Streptanthus albidus ssp. *albidus* Metcalf Canyon jewel-flower	Endangered	None	3-3-3 List 1B	Serpentinite soil, valley and foothill grassland	SCL	April-July

Table 1
Special-Status Plant Species with the Potential to Occur in the Vicinity of the Site (continued)

Scientific Name Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat[5]	Distribution by County[6]	Period Identifiable[6]
Streptanthus albidus ssp. *peramoenus* most beautiful jewel-flower	SOC	None	2-2-3 List 1B	Serpentinite soil, chaparral, cismontane woodland, valley and foothill grassland	ALA, CCA, SCL	April-June

[1]Nomenclature follows Hickman (1993) and Skinner and Pavlik (1994).
[2]U.S. Fish and Wildlife Service (1999a, b).
[3]Section 1904, California Fish and Game Code (California Department of Fish and Game 2000a).
[4]Skinner and Pavlik (1994).
Top line: CNPS R-E-D (Rarity-Endangerment-Distribution) code. Rarity; 1=Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time; 2=Occurrence confined to several populations or to one extended population; 3=Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported. Endangerment: 1=Not endangered; 2=Endangered in a portion of its range; 3=Endangered throughout its range. Distribution: 1=More or less widespread outside California; 2=Rare outside California; 3=Endemic to California.
Bottom Line: CNPS List. List 1B: Rare, Threatened, or Endangered in California and elsewhere. List 4: Plants of limited distribution: a watch list.
[5]Munz and Keck (1973); Hickman (1993); Skinner and Pavlik (1994); and unpublished information.
[6]Skinner and Pavlik (1994) and unpublished information; counties abbreviated by a three-letter code (below); occurrence in other areas as indicated.

ALA: Alameda
AMA: Amador
BUT: Butte
CCA: Contra Costa
COL: Colusa
DNT: Del Norte
FRE: Fresno
GLE: Glenn
HUM: Humboldt
KRN: Kern
LAK: Lake
LAX: Los Angeles
MAD: Madera
MEN: Mendocino
MER: Merced
MNT: Monterey
MOD: Modoc
MPA: Mariposa
MRN: Marin
NAP: Napa
NEV: Nevada
ORA: Orange
PLU: Plumas
RIV: Riverside
SAC: Sacramento
SBA: Santa Barbara
SBD: San Bernardino
SBT: San Benito
SCL: Santa Clara
SCR: Santa Cruz
SCT: Santa Catalina Island (LAX Co.)
SCZ: Santa Cruz Island (SBA Co.)
SDG: San Diego
SFO: San Francisco
SIS: Siskiyou
SJQ: San Joaquin
SLO: San Luis Obispo
SMT: San Mateo
SOL: Solano
SON: Sonoma
SRO: Santa Rosa Island (SBA Co.)
STA: Stanislaus
TEH: Tehama
TUL: Tulare
TUO: Tuolumne
VEN: Ventura
YOL: Yolo
YUB: Yuba

Santa Clara Valley Dudleya

One special-status plant species, Santa Clara Valley dudleya (*Dudleya setchellii*), occurs within the study area. Santa Clara Valley dudleya is federally listed as endangered, and is also on List 1B of the CNPS *Inventory* (Skinner and Pavlik 1994; Section 3.1.1). Santa Clara Valley dudleya is a low-growing perennial succulent in the stonecrop family (Crassulaceae), with thick, fleshy, oblong-triangular basal leaves and flowering stalks producing clusters of pale yellow flowers about 8-13 mm long. This species occurs only in rocky areas on serpentine substrate in grasslands and cismontane woodlands in and bordering the Santa Clara Valley in Santa Clara County. The species is known to occur on about 14 sites, with about 33,000 plants known to exist (USFWS 1995). Eleven of the 14 known populations are on private land. Urban development and concomitant loss of habitat is the primary threat to Santa Clara Valley dudleya. Other potential threats include off-road vehicles, grazing, and horticultural collecting.

On the Communication Hill site, Santa Clara Valley dudleya occurs on numerous serpentine outcrops on the upper half of the south-facing slope of the main ridge and on the adjacent slopes of side canyons. On the site, the species is restricted to the surfaces of the rock outcrops themselves, and sometimes to very thin, rocky soil immediately adjacent to the outcrops, where there is very little competing vegetation. It appears that the plants are specialized to produce extensive root systems penetrating deep into fractures in the rock. Figure 11 shows the distribution of Santa Clara Valley dudleya on the site, based on the results of year 2000 field surveys.

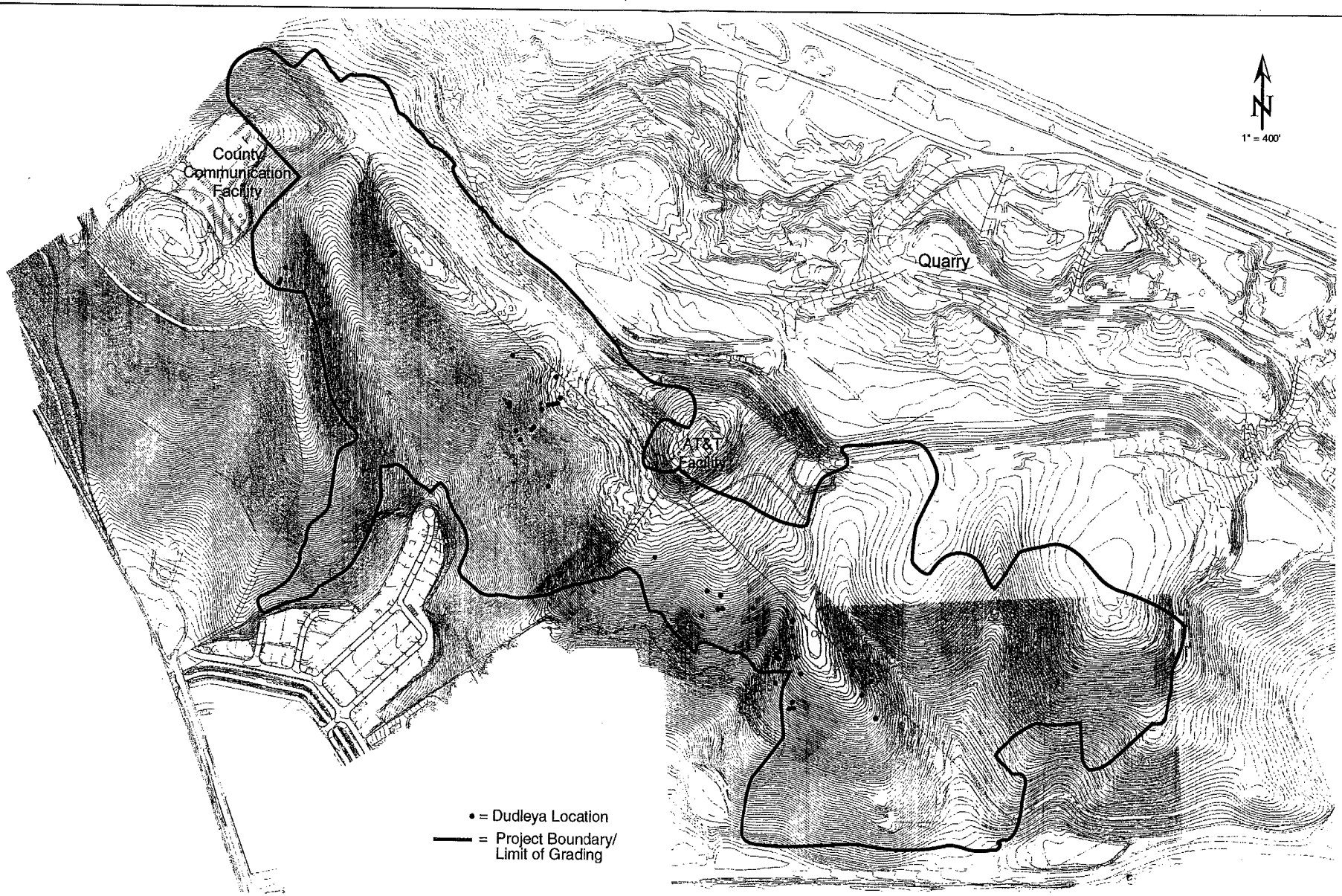
H.T. Harvey and Associates (1992) previously mapped the distribution of Santa Clara Valley dudleya on the site, based on field surveys conducted in 1992. The 1992 and 2000 mappings are similar but do not coincide exactly. It appears that the species is present in 2000 on some outcrops from which it was absent in 1992, and was present in 1992 on some outcrops from which it is absent in 2000. It is likely that the population biology of the species on the site involves a process of occasional local extinction on outcrops on which the species was previously present, along with occasional colonization of outcrops on which the species was previously absent. Outcrops not occupied by the species at present should therefore be considered suitable habitat that will likely be occupied at some time in the future.

Wetlands

Seasonal wetlands are recognized as a sensitive habitat type. This habitat type is recognized as a "high priority" habitat by CNDDB. Please refer to the discussion below of wetlands and jurisdictional waters.

Special-Status Animal Species and Their Habitats

The special-status wildlife species presented in Table 2 are the endangered, threatened and sensitive wildlife species with the potential to occur in the project site based on available habitat. According to Section 15380 of the CEQA Guidelines, a species not listed by the State of California "shall nevertheless be considered rare or endangered if the species can be shown to meet the criteria" for listing. The U.S. Fish and Wildlife Service encourages the consideration of proposed and candidate species in environmental planning, such as environmental impact analysis, under the National Environmental Policy Act of 1969.



LOCATIONS OF SANTA CLARA VALLEY DUDLEYA

FIGURE 11

Table 2
Special-Status Wildlife Species with Potential to Occur in the Vicinity of the Site

Common Name (*Scientific Name*)	**Status Federal/State**
Insects and other Arthropods	
Hom's micro-blind harvestmen (*Microcina homi*)	SC/--
Ricksecker's water scavenger beetle (*Hydrochara rickseckerii*)	SC/--
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	T/--
Opler's longhorn moth (*Adela operella*)	SC/--
Amphibians	
California red-legged frog (*Rana aurora draytonii*)	T/SC
California tiger salamander (*Ambystoma californiense*)	C/SC
Reptiles	
Western pond turtle (*Clemmys marmorata*)	--/SC
Birds	
California horned lark (*Eremphila alpestris actia*)	--/SC
Loggerhead shrike (*Lanius ludovicianus*)	--/SC
Burrowing owl (*Athene cunicularia*)	C/SC
Northern harrier hawk (*Circus cyaneus*)	--/SC
Sharp-shinned hawk (*Accipiter striatus*)	--/SC
Cooper's hawk (*Accipiter cooperi*)	--/SC
White-tailed kite (*Elanus caeruleus*)	--/FP
Short-eared owl (*Aiso flammeus*)	--/SC
Mammals	
Pallid bat (*Antrozous pallidus*)	--/SC
Townsend's big-eared bat (*Corynorhinus* (= *Plecotus*) *townsendii*)	C/SC
Long-eared myotis (*Myotis evotis*)	C/--
Fringed myotis (*Myotis thysanodes*)	C/**
Long-legged myotis (*Myotis volans*)	C/SC**
Yuma myotis (*Myotis yumanensis*)	C/--
Western red bat (*Lasiurus blossevillii*)	--/**
Western mastiff bat (*Eumops perotis*)	C/SC

The wildlife status definition and governing agencies follow:

Federal Status Definitions

E = Endangered: Any species which is in danger of extinction throughout all or a significant portion of its range.

T = Threatened: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

C = Taxa which are under review, and for which sufficient biological information exists to support a proposal to list as an endangered or threatened species.

M = Avian species and their nests which are protected during their breeding season under the Federal Migratory Bird Treaty Act.

State of California Status Definitions

E = Endangered: A native species or subspecies of animal which is in serious danger of becoming extinct throughout all, or a significant portion of its range, due to loss of habitat, change in habitat, over exploitation, predation, competition and/or disease.

T = Threatened: A native species or subspecies that, although no presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts

SC = CDFG Species of Special Concern

FP = Fully Protected under CDFG codes

* = Taxa given special consideration because they are biologically rare, very restricted in distribution, declining throughout their range, or at a critical stage in their life cycle when residing in California, or taxa that are closely associated with a habitat that is declining in California (e.g., wetlands, riparian, old growth forest).

Species that are listed in Table 2, but that have no potential to occur on the project site based on the lack of suitable habitat ,will not be discussed further. The following section contains a summary and discussions of the special-status wildlife species listed in Table 2, which are either known to occur or have any potential to occur at the project site based on our habitat evaluation and the focused species survey results. Natural history accounts for these species are presented in Appendix C. The three special-status avian species that are known to occur (see Table 3), are known as foraging species on the site. Although potential nesting habitat also occurs on the site for these species, nests were not observed. Figure 12 shows the locations of special-status wildlife observations and potential habitat within the study area.

Special-Status Invertebrates

No special-status invertebrates were observed during the invertebrate surveys. A complete discussion of the results of the invertebrate surveys is presented in Appendix C.

Bay Checkerspot Butterfly

The Bay Checkerspot Butterfly (BCB) is a federally threatened species that occurs in native grasslands on serpentine soils with suitable patches of larval host plants. Please refer to Appendix C for a detailed discussion of the BCB's characteristics and life cycle.

Habitat Requirements

The BCB is usually associated with serpentine grassland vegetation, particularly areas that are characterized by native bunch grasses, but historically was also known from a few non-serpentine locations. The primary host and larval food plant is Dwarf Plantain (*Plantago erecta*). In some years, the larvae require a second food plant, one of two species of Owl's clover (*Orthocarpus densiflora* or *O. purpurascens*). The butterfly's host plants occur consistently under suitable conditions only on serpentine soils in the San Francisco Bay Area.

Sun exposure, topographic aspect, and microclimate conditions at ground level affect the development rates of the BCB during immature stages and the seasonal activity period of the adults. Topographic diversity, in conjunction with the abundance of food plants are important determinants of habitat quality for the BCB. Locations with considerable habitat on eastern and northern facing slopes are more likely to allow BCB populations to persist through periods of drought or other short-term adverse climatic conditions. Generally, most of the slopes on the site are south and southwest facing.

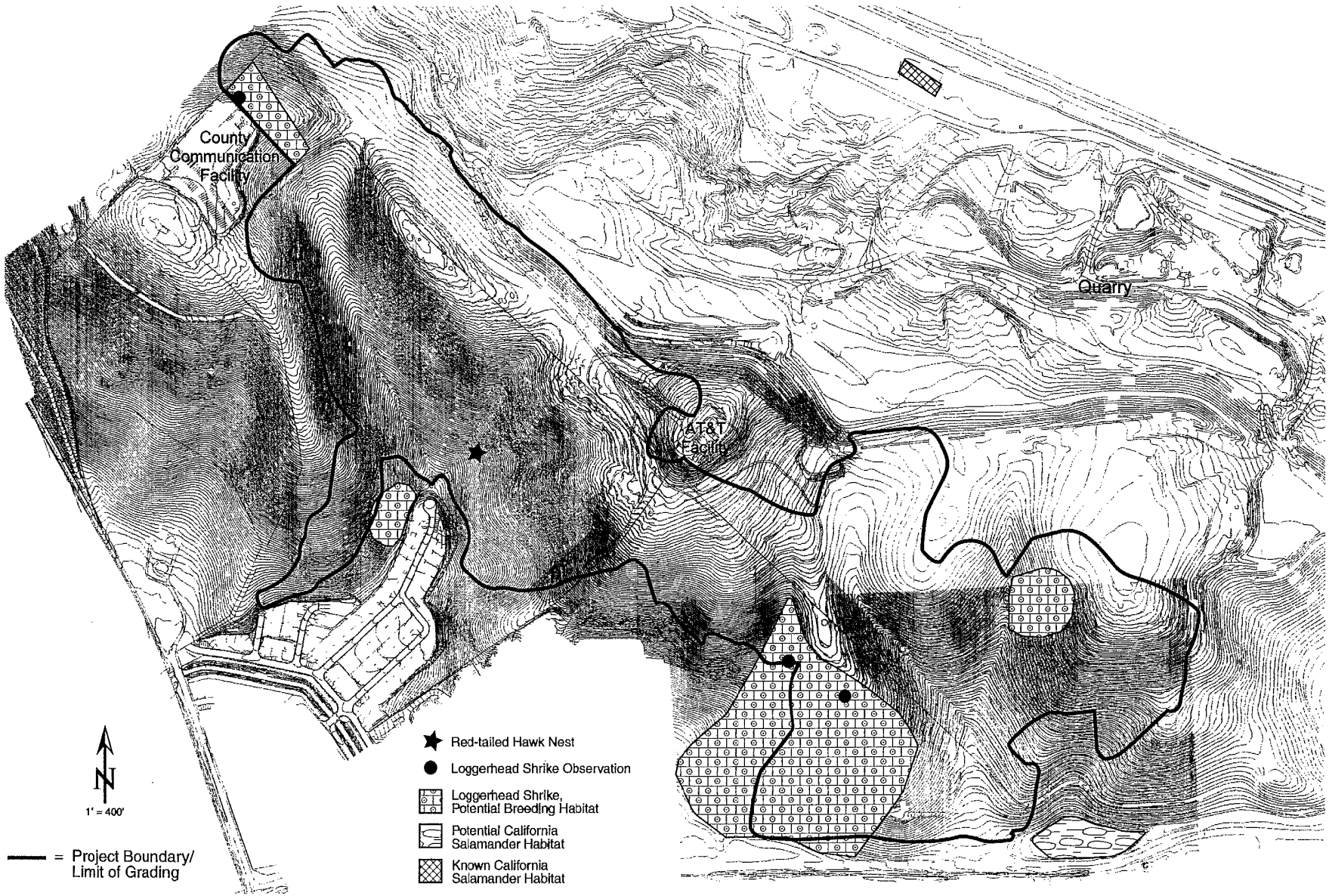
Population Characteristics

Historically, the butterfly was known from 16 locations in the greater San Francisco - San Jose Bay Area. Populations were known from San Francisco (Twin Peaks and Mount Davidson), San Mateo County (San Bruno Mountain south to Edgewood Park), Santa Clara County (numerous locations), Alameda County (Oakland hills), and Contra Costa County (Franklin Canyon and Morgan Territory).

Table 3
Special-Status Wildlife Species Known or for which Potential Habitat Occurs on or Immediately Adjacent to the Project Site

Common Name (*Scientific Name*)	Presence	Habitat Type
Insects		
Hom's micro-blind harvestman (*Microcina homi*)	previously known[1]	Rocky serpentine areas in grassland or oak woodland
Ricksecker's water scavenger beetle (*Hydrochara rickseckerii*)	potential but unlikely	Ponds, streams, marshes, lakes
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	potential but unlikely	Serpentine grassland
Amphibians		
California red-legged frog (*Rana aurora draytonii*)	potential but unlikely	Non-aquatic aestivation habitat
California tiger salamander (*Ambystoma californiense*)	potential	Non-aquatic aestivation habitat
Birds		
California horned lark (*Eremphila alpestris actia*)	potential	Nesting: grassland Foraging: grassland
Loggerhead shrike (*Lanius ludovicianus*)	known	Nesting: trees and shrubs Foraging: grassland and adjacent ponds. Cactus spines, barbed wire for impaling prey and storing food caches.
Burrowing owl (*Athene cunicularia*)	potential but unlikely	Nesting: rock piles (large mammal burrows in grassland are lacking). Foraging: grasslands
Northern harrier hawk (*Circus cyaneus*)	known	Nesting: grasslands and shrubs Foraging: grasslands and adjacent pond
White-tailed kite (*Elanus caeruleus*)	known	Nesting: oaks Foraging: grassland and adjacent pond
Short-eared owl (*Aiso flammeus*)	potential but unlikely	Nesting: grassland Foraging: grassland
Mammals		
Pallid bat (*Antrozous pallidus*)	potential but unlikely	Roosting: buildings, rock crevices and tree cavities. Foraging: grassland
Long-eared myotis (*Myotis evotis*)	potential but unlikely	Roosting: buildings, rock crevices and tree cavities. Foraging: grassland
Long-legged myotis (*Myotis volans*)	potential but unlikely	Roosting: buildings, rock crevices and tree cavities. Foraging: generalist: over trees, grassland and aquatic habitats
Yuma myotis (*Myotis yumanensis*)	potential but unlikely	Roosting: buildings, rock crevices and tree cavities. Foraging: over aquatic habitats
Western red bat (*Lasiurus blossevillii*)	potential	Roosting: Tree foliage Foraging: large moths

[1]H.T. Harvey and Associates 1992, 1994.



SPECIAL-STATUS WILDLIFE OBSERVATIONS AND POTENTIAL HABITAT

FIGURE 12

Populations of the BCB have severely declined. The primary reasons for the decline of the butterfly are habitat loss, caused by urban and suburban development, and habitat degradation, caused by non-native plants displacing or reducing native food plants of the butterfly. In addition, drought and other extremes in weather conditions have been implicated as possible causes of the extirpation of some populations, particularly in areas where livestock may have overgrazed the habitat. Habitat loss has not only reduced the number of BCB populations, but has also increased the distances between remaining populations, which limits the opportunities for dispersal and gene flow.

Studies over the past 40 years have determined that the butterfly has a "metapopulation" type of distribution and population structure. A metapopulation is a network of semi-isolated populations with some level of regular or intermittent migration and gene flow among them, in which individual populations may extirpate, but then are re-colonized by dispersing individuals from other populations.

The U.S. Fish and Wildlife Service (USFWS) has identified two metapopulations of the BCB in the region, one in Santa Clara County and one in San Mateo County. The USFWS defines the core areas of these metapopulations as areas of primary habitat, while secondary habitat areas are classified as satellite areas. Satellite areas are generally smaller and contain less high-quality BCB habitat than core areas, and may occur at some distance from core areas.

The October 16, 2000 edition of the Federal Register has identified various properties in San Mateo and Santa Clara Counties, totaling approximately 26,182 acres, that the USFWS proposes to designate as "critical habitat" for BCB. These proposed critical habitat locations include the currently undeveloped portions of Communications Hill, including the project site, as well as many other properties in these Counties. Critical habitat is defined in Section 3 of the Endangered Species Act as follows:

i. the specific areas within the geographical areas occupied by a species, at the time it is listed in accordance with the Act, on which are found only those physical or biological features essential to the conservation of the species and which may require special management consideration or protection; and
ii. specific areas outside the geographic area occupied by a species at the time it is listed, upon determination that such areas are essential for the conservation of the species.[10]

While the project site is proposed to be included within an area designated as critical habitat by the USFWS, the EIR relies on the evidence gathered through repeated BCB surveys, rather than on the USFWS proposal, to analyze potential impacts of the project on the BCB or its habitat. USFWS's proposed critical habitat designation states that recent comprehensive BCB surveys of the Communications Hill area have not been conducted; the proposal does not refer to the comprehensive survey conducted in the spring of 2000 or to three similar surveys conducted in 1991, 1992, and 1993, all of which concluded that the Project site was not occupied by the BCB. As USFWS states in the proposed designation, numerous areas are included in the proposed designation that would not in fact provide habitat for the BCB. The application of such a designation to a particular area does not represent a factual determination that the area is in fact actual or event potential "habitat" as the term is commonly understood.

[10] Federal Register, Part II Department of the Interior, U.S. Fish and Wildlife Service, October 16, 2000.

Conditions at the Project Site

The project site supports a mixture of serpentine grassland and annual grassland plant communities, which include the species of plants that can serve as food plants for larval and adult BCB. The locations where these plants were observed are provided in Appendix C. All such plants are widely, but patchily distributed on the hilltops and slopes, and locally abundant. No such potential food plants were observed in the valley bottoms or other areas that are dominated by ruderal annual grassland.

Protocol-level surveys failed to observe any adult butterflies, despite site visits during favorable weather conditions over the course of nearly the entire approximate five-week flight season of the butterfly during the Spring of 2000. Other butterfly types were observed actively flying on the site during these surveys. In addition, previous work by H.T. Harvey and Associates did not uncover any evidence that the site supported a population of BCB. As summarized by H.T. Harvey and Associates (1994), the serpentine areas at Communications Hill have been visited on at least 46 dates by various parties surveying for BCB between the mid-1980's and 1993. Throughout that period of time, only one individual butterfly was observed by an H.T. Harvey and Associates biologist in 1992, however, this individual was believed to be a transient individual.[11] In addition, larval surveys conducted at the site during 1992 and 1993 by H.T. Harvey and Associates did not find any immature stages of BCB. The 1994 H.T. Harvey & Associates study could not uncover any evidence that a population of the BCB resided at Communications Hill since 1940, or at any earlier date.

An analysis of the BCB food plants on Communications Hill indicated that, although the butterfly's primary larval food plant is present in abundance at Communications Hill, almost all of the food plant population becomes inedible at a time when developing larvae need would food to survive at the site. Similarly, Communications Hill was found to support species of nectar plants favored by adult BCBs in the early and middle portions of the flight season, but lacked nectar plants that are favored by adult BCBs later in the BCB's flight season. A combination of factors at Communications Hill, such as slope, aspect, low elevation, and minimal topographic diversity compared to locations that support BCBs, are probably responsible for the earlier maturation and senescence (aging and becoming inedible) of the plant species which have been found to support BCB populations at other locations. Thus on dates when BCBs were observed feeding on these plant species at other sites in Santa Clara County, the same plant species were inedible at Communications Hill and BCBs were nowhere to be found.

Decline of Nearby Populations

As described above, the BCB is able to disperse from its core populations and colonize satellite areas of serpentine grassland. It is currently believed that BCB populations in the nearby Cerro Plata area (immediately east of Highway 101) recently dropped, and no individuals have been observed in that location since the early- to mid-1990s. Similarly, there have been no observations of the BCB at Tulare Hill or Santa Teresa County Park in recent years, even though BCB was observed in 1990 at Tulare Hill and 1992 at the Santa Teresa County Park.[12] Thus, BCB populations at the nearest known historical locations do not exist at these sites at this time and have not existed there for a number of years.

[11] Arnold, Richard A., Report of Surveys Conducted for Special-Status Invertebrates at Communication Hill in San Jose, California, June, 2000.
[12] Arnold, Richard A., Report of Surveys Conducted for Special-Status Invertebrates at Communication Hill in San Jose, California, June, 2000.

Therefore, adult butterflies would have to disperse from more distant populations in order to colonize the project site. This substantially reduces the probability that dispersing BCBs could find and attempt to colonize the project site area.

In summary, the conditions prevailing at the project site preclude the establishment of a viable BCB colony. The presence, persistence, or absence of a species at a site is the true determination of habitat quality. Here, multiple site visits during favorable weather conditions over the course of nearly the entire 2000 flight season failed to observe any adults of the BCB, while other butterflies were observed actively flying on Communications Hill during these site visits; previous biological surveys of Communications Hill did not uncover any evidence that the site supported a BCB population; and despite the many surveys conducted at the site over the last 60 years, there is no evidence that the site has ever supported a population of BCB. The reason that the BCB avoids this site while occupying other sites is well understood: although the BCB's food plants are present on the site, this food plant population becomes inedible at the time when developing larvae need the food to survive at the site. Finally, there are no areas proximate to the site inhabited by the BCB, which makes it unlikely that dispersing BCB's could find and colonize Communications Hill, even if the site were more hospitable.

Hom's Microblind Harvestman

Hom's Microblind Harvestman (*Microcina homi*) was described as a new species in 1989 by Briggs and Ubick. The Hom's Microblind Harvestman, a spider-like arachnid, was formerly recognized by the USFWS as a category 2 candidate for endangered or threatened status, but is currently considered a federal species of concern. It is known only from grassland habitats, where it has been found under rocks of either serpentine or Franciscan origin. This species is known from only a few locations in the Coyote Valley and Silver Creek Hills areas of Santa Clara County. One Hom's Microblind Harvestman was found in 1992 in one valley bottom location on Communications Hill.[13]

Despite considerable search effort at rock outcrops throughout the entire project site, no harvestmen were observed during Spring 2000 surveys. The valley bottom where the single harvestman had previously been observed has been graded since that survey in 1992. Although rocks were still present, the original soil contours have been rearranged, and no harvestmen were found at this location.

Ricksecker's Water Scavenger Beetle

The Ricksecker's Water Scavenger Beetle (*Hydrochara ricksecker*i) is a federal species of concern. The specific details of the Ricksecker's Water Scavenger Beetle (RWSB's) natural history are unknown, however, some inferences can be made based on knowledge of the natural history of related species. Related species are aquatic scavengers as adults, and while larvae, they feed on soft-bodied aquatic invertebrates. Because larvae must hold their prey above the water surface to feed, they are usually found in relatively calm, shallow water of ponds, streams, marshes, or lakes.

RWSB is known only from the immediate San Francisco Bay Area. Only 14 specimens have been collected at various times over the past century. These specimens were collected from Alameda County (Oakland and Livermore), Marin County (Bolinas), San Mateo County

[13] Arnold, Richard A., Report of Surveys Conducted for Special-Status Invertebrates at Communication Hill in San Jose, California, June, 2000.

(San Mateo and Woodside), Solano County, and Sonoma County (near Penngrove). It has not been found in Santa Clara County.

A seasonally-ponded wetland area, located near the northeastern boundary of the Berns/Ross property, is the only area on the site that could provide potentially suitable habitat for this beetle. Despite intensive surveys, no beetles were observed during site visits. Since surveys were completed within the beetle's known activity period and no beetles were observed, this species is believed to be absent from the project site.

Special-Status Bird Species

Special-status birds with the potential to occur on the property are listed in Table 3. See Appendix C for the natural history of special-status birds with the potential to occur at the project site. Refer to Figure 12 for the observed locations of special-status bird species and areas of potential habitat on-site.

Loggerhead Shrike and Northern Harrier

Two California species of special concern, loggerhead shrike (*Lanius ludovicianus*) and a pair of Northern harrier hawks (*Circus cyaneus*) were observed foraging over the project site during the reproductive season. Loggerhead shrikes were observed on June 19 and June 20 in two areas (refer to Figure 12). Potential nesting habitat for loggerhead shrikes occurs on the project site in the areas with trees and shrubs (refer to Figure 12). The cactus garden adjacent to the house off Hillsdale Avenue on the project site as well as barbed wire fences throughout the site, provide features that shrikes may use for impaling prey and storing food caches. Barbed wire fences were free of food caches. The cactus garden was not surveyed due to human occupancy of the buildings and area. Loggerhead shrikes were also observed on Communication Hill in 1992 (H.T. Harvey and Associates 1992). Northern harrier hawks were observed foraging over the ridgeline of the project site on 28 March and on 7 June 2000.

White-tailed Kite

White-tailed kite (*Elanus caeruleus*), a species protected under CDFG codes, was also observed foraging over the project site on 28 March 2000. Suitable nesting habitat on the project site is limited to a few oak trees that are not being utilized at present. Nesting kites were not observed in the trees immediately adjacent to the project site.

Ground Nesting Birds

None of the ground nesting birds listed in Table 3, including short-eared owl (*Aiso flammeus*), Burrowing Owl (*Athene cunicularia*) and California horned lark (*Eremphila alpestris actia*), were observed during the focused surveys. California horned larks were observed on Communication Hill in 1992 (H.T. Harvey and Associates 1992). Red foxes (at least four individuals and a den within the project site) were encountered during each site visit. On 28 March, red foxes were encountered on the project site six times. The red fox is a non-native predator that eats small animals, including bird eggs and chicks of ground nesting birds. The limited foraging area for foxes on Communications Hill highly degrades the habitat for ground nesting birds.

Phases One and Two of the burrow surveys (burrow and summer evening surveys to look and listen for calls) resulted in no evidence of either foraging or nesting use of the project

site by Burrowing Owls. Suitable foraging habitat for both wintering and summering Burrowing Owls occurs on the project site. However, potential nest sites are lacking mainly due to the lack of ground squirrel (*Spermophilus beecheyi*) burrows that could then be secondarily used by the Owls. Although there is a small ground squirrel population, the squirrels are primarily using small rock crevices in the rock outcrops.

Potential Burrowing Owl den locations are limited to these rock piles on the project site, as the mammal burrows present on the site are too small for the Owls. Owl pellets or signs of Owl use were not present on the project site. The last recorded evidence of a Burrowing Owl in the vicinity of the project site was in 1993 (CNDDB record). At that time, a burrow with Owl pellets and white wash was observed (not Owls) along the railroad tracks approximately one mile south of Monterey Road and Curtner Road.

Red-tailed hawks are currently nesting in the eucalyptus grove. Although red-tailed hawk is not a special-status species, its nest locations are protected under CDFG codes and the federal Migratory Bird Treaty Act.

Special-Status Bats

Special-status bats with the potential to occur on the property are listed in Table 3. See Appendix C for the natural history of special-status bats with the potential to occur at the project site. The project site was evaluated for potential bat use due to the presence of limited but available roosting features (trees, buildings and rock crevices) and close proximity of the project site to aquatic habitats including quarry ponds, ephemeral ponds, Canoas Creek, and the Guadalupe River. The mature oaks on the southwest portion of the property provide roosting habitat in the form of hollows and exfoliating bark for the following common and special-status species:

- Pallid bat (*Antrozous pallidus*), special-status species
- Long-eared myotis (*Myotis evotis*), special-status species
- Yuma myotis (*Myotis yumanensis*), special-status species
- Big brown bat (*Eptesicus fuscus*)
- California myotis (*Myotis californicus*)
- Silver-haired bat (*Lasionycterus noctivagans*)

The oaks also provide roosting habitat for foliage-roosting western red bat (*Lasiurus blossevillii*), a special-status species, and hoary bat (*Lasiurus cinereus*).

A focused survey for bats was conducted in June in order to detect potential maternity roosts. Surveys focused on the mature oaks located on the southwest corner of the project site that contain cavities, and therefore provide potential maturity, day and nighttime roost structures for pallid bats (*Antrozous pallidus*). Bats were not detected during the focused surveys for roosting bats and/or bat guano during the day, nor were bats detected during the visual and acoustic surveys conducted at the time of evening emergence and at night. An unidentified bat was observed foraging over the grasslands of the project site on 19 June at night during the owl surveys. We therefore conclude that maturity roosts for bats do not occur in the mature oaks but that there is some light use of the grasslands as foraging habitat for bats.

Focused surveys for bats in the buildings on the southeast section of the property were not conducted due to human occupancy of the buildings and related safety issues. However, potential habitat for Yuma myotis and pallid bat occurs in these buildings, especially in the tin roof shed.

The rock formations and outcroppings found on the property have crevices and small cave-like features that provide potential roosting habitat for pallid bats and western pipistrelle (*Pipistrellus hesperus*). Pallid bats are known to use rock formations of this size and nature as maternity roost habitat in other grassland settings. The following special-status and common bats have the potential to use grasslands of the project site as foraging habitat:

- Pallid bat, special-status species
- Long-eared myotis, special-status species
- Yuma myotis, special-status species
- Western red bat (*Lasiurus blossevillii*), special-status species
- California myotis
- Mexican free-tailed (*Tadarida brasiliensis*)
- Hoary bat (Lasiurus cinereus)
- Big brown bat
- Silver-haired bat

Surveys of the project site did not identify the use of rock formations by bats.

California Tiger Salamander

No California tiger salamanders (*Ambystoma californiense*) (CTS) were observed on the project site during surveys conducted in 1992 and 2000. The 1992 surveys were CDFG protocol-level surveys. Upland habitat surveys were conducted on 28 March and 20 June 2000. Surveys of the on-site pond located adjacent to the north side of Hillsdale Avenue for immature California tiger salamander could not be conducted as a part of the 2000 surveys, because of the absence of water in the pond at the time of the surveys. The ephemeral pond off of Hillsdale Avenue did not support hydrology for successful breeding of CTS in the Spring of 2000.

In 1993, California tiger salamander larvae were known to occur in temporary ditches and in a quarry pond near the Union Pacific Railroad tracks to the northeast of the project site. Adult California tiger salamanders have also been observed on the northeast-facing slope of Communications Hill along the access road to the AT&T communication tower. While the project site does contain burrows, crevices and other features that could provide suitable upland habitat for California tiger salamanders, no salamanders were observed during site surveys. The project site is approximately 1,800 linear feet from the quarry pond located near the Union Pacific Railroad tracks. Natural barriers associated with the topography of Communications Hill tend to separate the project site from previously documented habitat below the AT&T communications tower. A near vertical slope, roughly 90 feet high, separates the project site from the adjacent property where tiger salamanders have been observed. It is the consulting biologist's professional opinion that the majority of CTS in the quarry pond estivate in the hillside directly above the pond and to the southwest, which is off the project site. At this time, how far up the hill and onto the project site the CTS estivate is unknown. Based on these factors, it is concluded that the project site could potentially support California tiger salamander.

California Red-Legged Frog

Potential reproductive habitat for California red-legged frogs occurs in the quarry pond near Monterey Road to the north of the project site. This pond was surveyed both visually and by

dip-net for California red-legged frogs in 1992 (H.T. Harvey and Associates 1992) but none were found. Areas potentially suitable as upland habitat for California red-legged frogs occur on the project site. However, the project site is unlikely to contain California red-legged frogs as there are no known California red-legged frog observations in the aquatic habitats near the study site.

Museum records show that, historically, California red-legged frogs occurred in the Guadalupe River west of the project site (H.T. Harvey and Associates 1997). California red-legged frogs have been observed within the last two years in the Guadalupe River watershed upstream and at distances greater than five miles from the study area (H.T. Harvey and Associates 1997; Jones and Stokes Associates 1998). An analysis of California red-legged frog distribution and status in Santa Clara County, conducted by H.T. Harvey and Associates (1997) for the Santa Clara Valley Water District, indicates that the project site is not located within the current known distribution of California red-legged frogs.

Wetlands on the Project Site

Wetlands are areas in which soils are intermittently or permanently saturated or inundated. The resulting anaerobic conditions encourage plant species known as *hydrophytes*, which show a high degree of fidelity to such soils. The physical appearance of wetlands varies considerably from the open water of a river to the seasonal ponding of alkaline flats, and generally includes swamps, bogs, marshes, vernal pools, riparian woodlands, and other similar areas supporting hydrophytic vegetation. Due to the seasonal nature of rainfall in California, some wetlands may experience soil saturation for only a few weeks out of the year. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils, and wetland hydrology according to methodologies outlined in the 1987 U.S. Army Corps of Engineers' *Wetlands Delineation Manual.*

Field investigations of potential wetlands occurring on the project site were conducted using the routine determination methodology given in the U.S. Army Corps of Engineers' *Wetlands Delineation Manual.* The following discussion summarizes the detailed discussion regarding wetlands in Appendix C and the findings of jurisdictional wetlands made by the U.S. Army Corps of Engineers. Please refer to Appendix C for a detailed discussion of the survey methodology.

Jurisdictional Waters

Federal and State Regulations

Areas meeting the regulatory definition of "Waters of the United States" are subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps). The Corps, under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899), has jurisdiction over "Waters of the U.S." These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U.S.", tributaries of waters otherwise defined as "Waters of the U.S.", the territorial seas, and wetlands adjacent to "Waters of the U.S." Wetlands are considered to be Waters of the United States.

Projects that cause the discharge of dredged or fill material into waters of the U.S. require permitting by the Corps. Actions affecting small areas of jurisdictional waters of the United

States may qualify for a Nationwide Permit, provided conditions of the permit are met, such as avoiding impacts to threatened or endangered species or to important cultural sites. Projects that affect larger areas or which do not meet the conditions of a Nationwide Permit require an Individual Permit. The process for obtaining an Individual Permit requires a detailed alternatives analysis and development of a comprehensive mitigation/monitoring plan.

Areas not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially-irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions. In addition, agricultural lands which satisfy the criteria as "prior converted croplands," as defined by the Soil Conservation Service, are not subject to regulation under Section 404. "Prior converted croplands" are defined as wetlands which were both manipulated (drained or otherwise physically altered to remove water from the land) and cropped before 23 December 1985, to the extent that they no longer exhibit important wetland values. To qualify as "prior converted croplands" the lands must not be inundated for more than 14 consecutive days during the growing season.

Construction activities within jurisdictional waters are regulated by the Corps. The placement of fill into such waters must be in compliance with permit requirements of the Corps. Such permits are typically issued on the condition that the applicant agree to provide mitigation which results in no net loss of wetland functions or values. No Corps permit will be approved in the absence of State water quality certification or waiver pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency charged with implementing water quality certification in California.

The Regional Water Quality Control Boards (RWQCBs) regulate activities in wetlands and other waters through Section 401 of the Clean Water Act. Section 401 requires a state water quality certification for projects subject to Section 404 regulation. Requirements of the certification include mitigation for the loss of wetland habitat. In the San Francisco Bay region, the RWQCB may take the lead over the Corps in determining wetland mitigation requirements. California Fish and Game Code Sections 1600-1607 require that the CDFG be notified of any activity that could affect the bank or bed of any stream that has value to fish and wildlife. Upon notification, the CDFG has the discretion to execute a Streambed Alteration Agreement. The CDFG defines streams as follows, *"... a body of water that flows at least periodically...through a bed or channel having banks and supporting fish and other aquatic life. This includes watercourses having a subsurface flow that supports or has supported riparian vegetation." (Fish and Game Code, Section 1603).* In practice, CDFG authority is extended to any "blue line" stream shown on a USGS topographic map, as well as unmapped channels with a definable bank and bed. Wetlands, as defined by the Corps, need not be present for CDFG to exert authority.

There are approximately 0.357 acres of jurisdictional waters present on the project site (refer to Figure 10). A summary of the potential jurisdictional wetlands and waters of the U.S. on the project site is presented in Table 4, below.

Wetlands

Two small areas of wetland habitat occur on the site. The first is a freshwater seep located at the bottom of a southeast-draining side canyon in the southern portion of the site. This 100 square foot (0.002 acre) freshwater seep is densely vegetated, primarily by the non-native

species Italian rye grass and annual beard grass, as well as the native species common large monkeyflower and Spanish clover.

The second wetland area is located in the southeastern corner of the site adjacent to Hillsdale Avenue. Water from the above-described wetland seep ponds in the depression at the southeastern corner of the Berns/Ross property for a sufficient length of time to create a seasonal wetland. The total area of the physical wetland feature is approximately 1.42 acres (61,855 square feet) in size. Of this total, approximately 0.35 acres occur on the project site, within the Berns/Ross property (refer to Figure 10). The remaining wetland acreage is located on the adjacent lands owned by MTA Properties. Hillsdale Avenue forms the southern boundary for this wetland area and contains flows from the Berns/Ross property. The existing fence line on the Berns/Ross property transects the wetland along Hillsdale Avenue, and fence posts were observed with watermarks as high as five feet one inch (5'1") deep.

Other Waters

In addition to the two wetland areas on the Vieira property, a non-vegetated intermittent drainage channel was identified in the southwestern canyon, near the existing Mountain Springs Mobile Home Park. This channel empties into a culvert at the property line. The defined drainage channel is approximately 75 feet in length and 2-3 feet wide. Therefore, the drainage channel results in an area of approximately 0.005 acres of jurisdictional "other waters" on the Vieira portion of the project site.

Table 4
Potential Corps Jurisdictional Wetlands and Waters of the U.S.

Location	Wetlands (acres)	Other Waters (acres)
Vieira Property		
Freshwater Seep	0.002	0.000
Drainage Channel	0.000	0.005
Berns/Ross Property		
Depression on Southeastern Portion of site	0.350	0.000
Total	**0.352**	**0.005**

Ordinance Trees

Tree surveys were conducted for the project site to identify and document the species and general health of all trees located within the proposed project area. The specific locations, sizes and conditions of the trees found on the site are presented in Appendix C.

Twenty-two (22) trees are present on the Vieira property portion of the site. The dominant species on this site were Blue Gum (*Eucalyptus globulus*), Valley Oak (*Quercus lobata*), Pine, (*Pinus sp.*), and Ash (*Fraxinus sp.*). Of the 22 trees on the Vieira property, 11 are "ordinance size trees", which are defined as trees over 18 inches in diameter at a height of twenty-four inches above natural grade.[14] These ordinance size trees include eight Blue

[14]City of San Jose Civil Code (13.32.020).

Gums and 3 Valley Oaks. In addition, one Blue Gum and four Valley Oaks between 12 and 17 inches in diameter were also observed on this portion of the site.

Forty-eight (48) trees were identified on the Berns/Ross property and were located near the existing residential structures. A total of 12 different tree species were represented on this portion of the site. The dominant species observed were California Pepper Tree (*Schinus molle*), Mexican Elderberry (*Sambucus mexicana*), various fruit (*Prunus sp.*), and Tree of Heaven (*Ailanthus altissima*). A total of 17 Tree of Heaven saplings were observed in colony to the east of the existing residential structure. Of the 48 trees on the Berns/Ross property, three (3) are ordinance size trees. These ordinance size trees include one Monterey Pine and two California Pepper Trees. In addition, nine California Pepper Trees between 12 and 17 inches in diameter were also observed on this portion of the site.

No trees were observed within the Long-Kwei property portion of the site.

2. Biological Resources Impacts

Thresholds of Significance

For the purposes of this project, impacts to vegetation and wildlife are considered significant if the project would:

- substantially affect a rare or endangered species of animal or plant or the habitat of the species;
- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations; or
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations; or
- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; or
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
- eliminate mature native oak trees or specimen quality examples of other tree species or substantially reduce the number of smaller trees within a given area, or significantly reduce nesting or roosting habitat for birds within the project area; or
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- substantially reduce the habitat of a fish or wildlife species; or
- cause a fish or wildlife population to drop below self-sustaining levels; or
- threaten to eliminate a plant or animal community; or
- reduce the number or restrict the range of a rare or endangered plant or animal; or
- damage or reduce the size of an existing environmentally sensitive habitat area; or
- result in contamination of an environmentally sensitive habitat area which has the potential to adversely affect health or reproduction of native plants or wildlife in the habitat area.

Methods

Using the baseline information and survey results described in the setting section, sensitive biological resources were identified, located, and mapped. Project descriptions and designs were compared to the occurrence pattern of sensitive resources to determine the project's direct and indirect impacts.

Loss of Ruderal/Non-Native and Serpentine Grassland Habitats

The proposed project development would result in the conversion of approximately 130 acres of ruderal and serpentine grassland habitat to high-density attached residential development. These habitats support a variety of plant and animal species. The loss of these habitats on the site would contribute to the reduction in the overall carrying capacity of the project area for a variety of common animals like Killdeer, Western Meadowlarks, Mourning Doves, California ground squirrels, western fence lizard, Botta's pocket gopher, and others. Predators such as gopher snakes, Red-tailed Hawks and other raptors, some of which are special-status species, would also lose foraging habitat on the site.

Annual grasslands enhance the value of surrounding habitats by providing foraging and hunting opportunities for raptors that may nest in suitable tree habitat in the adjacent areas. The habitat value of the grassland area is not limited to raptors; many small birds, rodents and insects use this habitat type. The project site is dominated by disturbed non-native annual grasses, which are not considered to be sensitive habitats. However, it should be noted that this habitat is declining throughout the State. The loss of approximately 130 acres of ruderal habitats as a result of the project would contribute to the reduction of such habitats in the areas, and thereby contribute to a reduction in the overall variety and diversity of wildlife species present in the project site area, including reducing foraging opportunities available to Loggerhead Shrike, Northern Harrier, and White-tailed Kite, which are special-status bird species. Biological impacts from conversion of annual grassland to residential units and landscaping would be considered a significant impact.

- **The loss of ruderal and serpentine grassland habitats as a result of the project would contribute to a reduction in the availability of such habitats in the area and thereby contribute to a reduction in the diversity of wildlife species present in the project area, and would reduce foraging opportunities available on the site to special-status bird species. (Significant Impact)**

Loss of Nesting Habitat for Birds, Including Sensitive Species Such as Raptors and Migrating Songbirds

Trees scheduled for removal on the project site provide suitable nesting habitat for raptors and sensitive bird species. Raptors such as red-tail hawk, white-tail kite and northern harrier have been observed within the project area and could nest within the on-site trees.

A pair of northern harriers was observed foraging over the project site during the reproductive season and may nest on the site. Development of the project would result in the removal of existing grasses, shrubs, and short trees on the site which provide potential nesting habitat for northern harriers.

White-tailed kites were observed foraging on the site. While suitable nesting habitat is limited to the few oak trees on the site, nesting kites could be present at the time of project

construction. Development of the project would result in the removal of existing trees on the site, which provide potential nesting habitat for white-tailed kites.

Loggerhead shrikes were observed in two areas on the project site. Loggerhead shrikes have been observed on the Communications Hill site over several survey seasons and it is presumed they nest on the site due to the regularity of observations and consistency in reporting by various independent sources. Nesting habitat for loggerhead shrikes occurs on the project site in the areas with trees and shrubs. Development of the project would result in the removal of existing grasses, shrubs, and short trees on the site which provide potential nesting habitat for loggerhead shrikes.

In addition, Red tailed hawks and other raptors could also find the site suitable for nesting. If any raptor species is found nesting on the project site, impacts to these birds could be a significant impact. Tree removals during the nesting season could destroy nests of sensitive bird species. Nesting raptors are protected under the provisions of the Migratory Bird Treaty Act and the CDFG Code Sections 3503, 3503.5 and 3800. Impacts to raptor nests is considered a significant impact.

- **The project would result in significant impacts to suitable bird nesting habitat. (Significant Impact)**

Special-Status Plant Species

Santa Clara Valley Dudleya

As described previously, Santa Clara Valley dudleya occurs on the site, on numerous serpentine outcrops on the upper half of the south-facing slope of the main ridge and on the adjacent slopes of side canyons. On the site, the species is restricted to the surfaces of the rock outcrops themselves, and sometimes to very thin, rocky soil immediately adjacent to the outcrops, where there is very little competing vegetation. Grading for the project would result in the loss of all existing Santa Clara Valley dudleya habitat on the slopes of the site, and the project would result in the removal of virtually all Santa Clara Valley dudleya plants within the grading area of the project site. Because this species is federally listed as endangered, the loss of these plants on the site is considered a significant impact.

- **The project would result in the significant loss of Santa Clara Valley dudleya plants on the site. (Significant Impact)**

Special-Status Animal Species

Bay Checkerspot Butterfly

Individual Bay Checkerspot Butterflies

As described above, the conclusion that the site does not and cannot support a population of the Bay Checkerspot Butterfly (BCB) is based on a number of factors. No BCB individuals were observed throughout its 2000 flight season during spring surveys. In addition, previous surveys in 1992 and 1993 identified only a single, transient individual adult BCB on the site. Although adult plants that ordinarily are used as food by the BCB are present at Communications Hill, almost all of the population of these plants becomes inedible at the time when developing BCB larvae would need food to survive at the site. Furthermore, the absence of BCB populations in proximity to the site makes it unlikely that dispersing

butterflies would locate or successfully colonize the site. Based on these factors and based on the findings of extensive surveys of the project site area, the site does not support a population of BCB, and the project would not significantly impact the Bay Checkerspot Butterfly.

Potential Bay Checkerspot Butterfly Habitat

As described previously, the BCB is usually associated with serpentine grassland vegetation, particularly areas that are characterized by native bunch grasses. The project site includes serpentine grassland and also contains the plants that are used by BCB as food plants, and the site is located near other known BCB populations in Santa Clara County. The BCB surveys conducted for this project concluded that the site is not suitable habitat for BCB because, while there are plants on the site which do serve as food plants for BCB at other sites, the maturation and senescence cycles of the plants at this site are not compatible with the needs of BCB during various stages of their life cycle. As a result, the plants on the site are described as providing poor potential habitat for BCB. In addition, there have been numerous studies of the Communications Hill area, with only one transient BCB ever found on the site. Based on the numerous surveys for BCB at Communications Hill over the past 60 years, there is no evidence of BCB occupation of the site.

- **The project would not result in significant impacts to Bay Checkerspot Butterfly individuals or Bay Checkerspot Butterfly habitat on the site. (Less Than Significant Impact)**

Hom's Microblind Harvestman

Despite considerable search effort at rock outcrops throughout the entire project site, no harvestmen were observed during Spring 2000 surveys. The valley bottom where one harvestman had previously been observed has been graded for fire suppression since that survey in 1992. Although rocks were still present, the original soil contours have been rearranged, and no harvestmen were found at this location. Therefore, the project is not anticipated to result in impacts to this species.

- **The project would not result in significant impacts to Hom's microblind harvestman. (No Impact)**

Ricksecker's Water Scavenger Beetle

Despite intensive surveys, no water scavenger beetles were observed on the site during site visits. Since surveys were completed within the beetle's known activity period and no beetles were observed, the project is not anticipated to result in impacts to this species.

- **The project would not result in significant impacts to Ricksecker's water scavenger beetle. (No Impact)**

Loggerhead Shrike

The ruderal fields on the project site provide suitable foraging habitat for Loggerhead Shrikes. Loggerhead Shrikes were observed in two areas on the project site. Potential nesting habitat for Loggerhead Shrikes occurs on the project site in the areas with trees and shrubs. Development of the project would result in the removal of existing grasses, shrubs, and short trees on the site which provide potential nesting habitat for Loggerhead Shrikes (refer to discussion of nesting

habitat above). If this species is found nesting on the project site, impacts to individual Loggerhead Shrikes would be a significant impact.

- **The project would result in a loss of Loggerhead Shrike foraging habitat and could result in significant impacts to individual nesting Loggerhead Shrikes. (Significant Impact)**

Northern Harrier

The ruderal fields on the project site provide suitable foraging habitat for Northern Harriers. A pair of Northern Harriers was observed foraging over the project site during the reproductive season and may nest on the site. Development of the project would result in the removal of existing grasses, shrubs, and short trees on the site, which provide potential nesting habitat for Northern Harriers. If this species is found nesting on the project site, impacts to individual Northern Harriers would be a significant impact.

- **The project would result in a loss of Northern Harrier foraging habitat and could result in significant impacts to individual nesting Northern Harriers. (Significant Impact)**

White-tailed Kite

The ruderal fields on the project site provide suitable foraging habitat for White-tailed Kites, and a White-tailed Kite was observed foraging on the project site. While suitable nesting habitat is limited to the few oak trees on the site, nesting kites could be present at the time of project construction. Development of the project would result in the removal of existing trees on the site which provide potential nesting habitat for White-tailed Kites. If this species is found nesting on the project site, impacts to individual White-tailed Kites would be a significant impact.

- **The project would result in a loss of White-tailed Kite foraging habitat and could result in significant impacts to individual nesting White-tailed Kites. (Significant Impact)**

Special-Status Bats

Bats were not detected during the focused surveys for roosting bats and/or bat guano during the day, nor were bats detected during the visual and acoustic surveys conducted at the time of evening emergence and at night. An unidentified bat was observed foraging over the grasslands of the project site on 19 June at night (during the Owl surveys). While there is some light use of the grasslands as foraging habitat for bats, maturity roosts for bats do not occur in the mature oaks on the site. Therefore, the project would not result in significant impacts upon special-status bats.

- **The project would not result in significant impacts to special-status bats. (Less Than Significant Impact)**

California Tiger Salamander

As described above, no California tiger salamanders were observed on the project site during surveys conducted in 1992 and 2000. There is a known population, however, in the quarry pond by the Union Pacific Railroad tracks, approximately 1,800 feet northeast of the site.

There is a potential for some individuals from the quarry pond to estivate within the project site, although it is the professional opinion of the consulting biologist that this would represent only a small proportion of the quarry pond population. While the on-site ephemeral pond by Hillsdale Avenue did not support hydrology for successful breeding of CTS in the spring of 2000 (it had dried by April), there are examples in the Bay Area of CTS breeding in ponds every few years. For these reasons, it is concluded that the project site could provide breeding and estivation habitat for California tiger salamander. Protocol-level surveys of the project site are on-going at this time. If CTS are present on the site, then the project could result in significant impacts to CTS and their breeding and estivation habitat.

- **The project could result in potential impacts to California tiger salamander. (Significant Impact)**

California Red-Legged Frog

The project site is unlikely to contain California red-legged frogs, as there are no known California red-legged frog observations in the aquatic habitats near the study site. While California red-legged frogs have been observed within the last two years in the Guadalupe River watershed, an analysis of California red-legged frog distribution and status in Santa Clara County, conducted by H.T. Harvey and Associates (1997) for the Santa Clara Valley Water District, indicates that the project site is not located within the current known distribution of California red-legged frogs. Therefore, the project is not likely to impact California red-legged frogs.

- **The project would not result in significant impacts to California red-legged frogs. (No Impact)**

Loss of Wetland and Drainage Channel Habitat

As described above, two small areas of wetland habitat occur on the site. The first is a freshwater seep located at the bottom of a southeast-draining side canyon in the southern portion of the site and is approximately 100 square feet (0.002 acres) in size. The second wetland area is located in the southeastern corner of the site adjacent to Hillsdale Avenue and is approximately 0.35 acres in size. In addition to the two wetland areas, a non vegetated intermittent drainage channel was identified in the southwestern canyon near the existing Mountain Springs Mobilehome Park. This defined drainage channel is approximately 75 feet in length and 2-3 feet wide (0.005 acres).

Activities associated with grading of the site would result in direct impacts to 0.002 acres of seep habitat and 0.005 acres of drainage channel habitat. In addition, the widening of Hillsdale Avenue associated with the project would result in direct impacts to approximately 0.10 acres of the wetlands within the Berns/Ross property. Direct impacts would involve the placement of fill into the described areas to facilitate development. Indirect impacts may also occur to the 0.35-acre seasonal pond if construction is conducted during the winter rains. Indirect impacts could include disturbance to wildlife species utilizing the ponded area during construction. Additional indirect impacts could include the degradation of water quality within the wetland associated with runoff from unstabilized soils exposed during grading or earth moving activities.

The wetland and drainage habitats present on the project site do not provide significantly special habitat values for wildlife species. The one exception is the potential for California tiger salamander to be present in the ephemeral pond located adjacent to Hillsdale Avenue,

as described previously. These habitats experience some sporadic or opportunistic use by wildlife species during the rainy season, when hydrological conditions allow flooding or temporary pond to be present. It should be recognized that these areas provide suitable cover, nesting habitat and viable foraging areas only for several months out of the year. The primary value of these habitats is the presence of standing water, and the associated perennial vegetation, which provides a food source for birds and small mammals after the surrounding annual grasses, have withered and died.

Wetlands and drainage channel areas are considered sensitive habitats by State and Federal agencies, and impacts to these areas will trigger regulatory requirements. The 0.357 acres present on the project site have been disturbed by past grazing and agricultural practices such as disking, and do not provide good quality habitat. However, despite their low quality and limited functions and values, these areas constitute jurisdictional wetlands/waters under the U.S. Army Corps of Engineers regulations, and will require mitigation for impacts resulting from fill activities associated with this project. Direct impacts to these areas are therefore considered significant.

- **The loss of approximately 0.107 acres of wetland and drainage channel habitats as a result of the project would contribute to a reduction in the diversity of wildlife species present in the project site area, including precluding or limiting the presence of special-status species associated with these habitat types. The project would result in impacts to wetlands/waters regulated by the U.S. Army Corps of Engineers (Significant Impact)**

Impacts to Ordinance Trees

Ordinance size trees are defined by the City of San Jose as all non-orchard trees having a trunk measuring 56 inches or more in circumference (18 inches in diameter) at the height of 24 inches above the natural grade of slope. It is anticipated that most or all of the ordinance size trees on the site would be removed from the site to accommodate construction of the project. Approximately 11 ordinance size trees would be removed from the Vieira property portion of the project site, including eight blue gums and three (3) valley oaks. Approximately three (3) ordinance size trees would be removed from the Berns/Ross property portion of the project site, including one Monterey pine and two California pepper trees.

Trees that would be removed for the project site include non-native species such as blue gum and pepper tree and native species such as valley oak. The eucalyptus trees are located mostly in a cluster on the south slope of the middle of the project area. Valley oak trees are scattered throughout the Vieira property. Various non-native ornamental and fruit trees are also located on the Berns-Ross portion of the project site, surrounding existing structures.

The eucalyptus and valley oak trees represent habitat for nesting raptor species. The eucalyptus trees are very large and have value as nesting habitat, although somewhat less value than a native species in a natural area. The valley oak trees provide high biological value due to the association with annual grassland and scrub habitats. The habitat on this portion of Communication Hill is mostly undisturbed by humans and has been utilized as grazing land. The trees in this habitat provide foraging, perching, nesting, and protection to the wildlife species, especially birds, in the project area. Under the thresholds of significance listed above, removal of these trees would constitute a significant impact.

- **Development of the project would result in the removal of approximately 14 ordinance size trees from the site. (Significant Impact)**

3. Mitigation Measures for Biological Resources Impacts

The following measures are proposed as part of the project to avoid or minimize impacts to biological resources:

Loss of Ruderal/Non-Native and Serpentine Grassland Habitats

The loss of non-native and serpentine grassland habitats as a result of the project would contribute to a reduction in the diversity of wildlife species present in the project site area, including precluding or limiting the presence of special-status species. Mitigation measures to reduce this impact would include one or more of the following alternatives:

- Non-native grassland habitat shall be replaced by seeding with a mix of California native grasses and forbs, and/or planting of plugs of native grasses. Seeding/plugging shall be performed by October 30th or before the first significant winter rainfall in the year of grassland removal. Replaced grassland would allow reestablishment of this habitat type on non-developed portions of Communications Hill following grading. Once established, wildlife species that utilize grassland habitats would re-colonize those areas that were restored.

- All non-disturbed grassland shall be preserved and placed into a conservation easement preventing future development or use of those areas. This action would allow existing conditions to remain in perpetuity.

- Mowing for fire control shall be performed around the perimeter of any grassland areas, leaving as much of the internal area intact as allowable to local fire authorities, and leaving the mowed area no higher than 18 inches.

Conclusion: **Implementation of the above mitigation measures would reduce impacts to grassland habitats to a less than significant level. (Less Than Significant Impact with Mitigation)**

Loss of Nesting Habitat for Birds, Including Sensitive Species such as Raptors and Migrating Songbirds.

Raptors such as red-tail hawk, white-tail kite and northern harrier have been observed within the project area and could nest within the on-site trees or shrubs.

- To avoid the nesting season of raptors and sensitive songbirds, tree removals shall not take place between February 15 and June 30, or as determined by CDFG on a case-by-case basis.

- If tree removal in the same calendar year before February 15 (i.e., between January 1 and February 15) is required, a pre-construction season survey shall be conducted no more than 30 days prior to the removal of any tree or shrub area to identify the presence, or lack thereof, of nests of raptors. Pre-construction surveys are necessary during this period to protect possible early nesting raptors. Surveys are not warranted until immediately prior to construction because nesting may occur in different trees from year to year. If no nests are identified in trees to be removed during the pre-construction

survey, no further mitigation is necessary. If nests are identified, CDFG shall be contacted and appropriate protocols for nest relocation shall be implemented.

- A preconstruction survey for nesting raptors may be necessary on-site due to the presence of suitable nesting trees. The eucalyptus grove and oak trees on-site represent good nesting tree locations. If nests are identified on site, CDFG requires a buffer area around the nest trees until such time as the juvenile hawks are no longer dependant upon the tree for survival. Trees may not be removed until the juvenile raptors have fledged.

Conclusion: **Implementation of the above mitigation measures would reduce impacts to nesting birds to a less than significant level. (Less Than Significant Impact with Mitigation)**

Special-Status Plant Species

Santa Clara Valley Dudleya

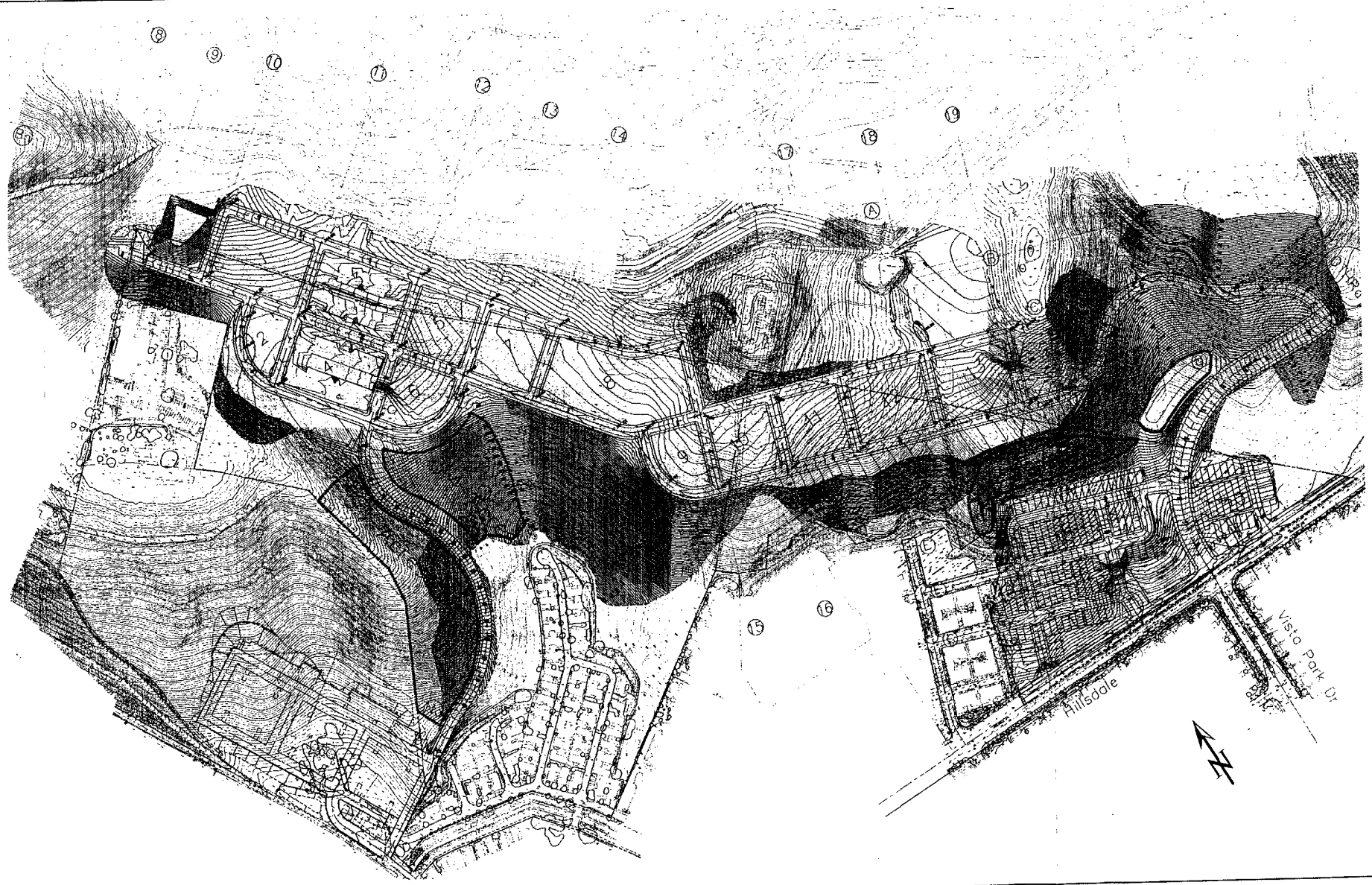
The project would result in the removal of virtually all Santa Clara Valley dudleya plants within the grading area of the project site. A mitigation plan to reduce impacts to Santa Clara Valley dudleya has been prepared for and would be implemented by the project. The purpose of the proposed mitigation plan is to achieve no net loss of Santa Clara Valley dudleya on the project site through relocation of existing plants and the propagation of seed in containers for future transplantation. A complete copy of the mitigation plan is provided in Appendix C of this report.

Specifically, the project proposes the following mitigation measures for reducing impacts to Santa Clara Valley dudleya on the project site:

- Surveys shall be conducted to determine the number of plants impacted by the project. The replanting and success criteria would be tied to the total number of plants. The species varies greatly in density. The total mitigation area is 10.7 acres, which if calculated on an average density of Dudleya basis, should be more than enough for a few thousand plants.

- Three mitigation areas on the western slopes of the regraded project area shall be used to mitigate the removal of extant Santa Clara Valley dudleya habitat. The mitigation areas are 5.1, 3.4 and 2.2 acres in size for a total of 10.7 acres of recreated serpentine habitat (see Figure 14). Two of the mitigation areas (5.1 and 3.4 acres) are located on the western side of the project area, north and west of the existing Mountain Springs Mobilehome Park. These mitigation areas are close together, and area separated by the proposed access roadway off Narvaez Avenue, above the Hezler Ranch development (refer to Figure 14). The third mitigation area (2.2 acres in size) is located on the eastern portion of the site, north of the intersection of Hillsdale Avenue and Vistapark Drive.

  Of the three sites identified for mitigation purposes, the 2.2 acre site is intended to be used as an experimental site. This site includes the removal of topsoils exposing new outcrops of serpentine rock. Translocated plants, seed and propagated plants will be studied to determine levels of success with this method of mitigation. The two remaining sites would be consistent with previous mitigation methods which include translocation of the serpentine rock with plant material.



PROPOSED DUDLEYA MITIGATION AREAS

FIGURE 13

- No construction grading shall be conducted in the immediate vicinity (approximately 30 feet) of the existing locations currently occupied by the Santa Clara Valley dudleya until all existing plants and serpentine rock which support Santa Clara Valley dudleya are translocated to the designated mitigation areas. These areas shall be fenced prior to grading to eliminate potential grading or harm of the sites. Contractors shall be informed of the significance of the existing Santa Clara Valley dudleya sites prior to the commencement of grading. Following the removal of all Santa Clara Valley dudleya plants, but prior to removal of the serpentine rock, the topsoil under the Santa Clara Valley dudleya shall be collected and stockpiled for use in the mitigation areas.

- The first method of mitigation for Santa Clara Valley dudleya is the translocation of the plants from their current habitat. This method shall be implemented in several phases so that the plants are safely moved to new locations in the designated preserve areas. The translocation of these plants will require the careful movement of the serpentine rocks on which the Santa Clara Valley dudleya grows. The Kirby Canyon Landfill site and the Valley Christian Schools sites are two projects that have successfully translocated Santa Clara Valley dudleya. Results have indicated a survival rate up to 75 percent after the first year.

- The second mitigation method to preserve Santa Clara Valley dudleya is to collect seed from the plants, germinate and grow the plants in pots within a greenhouse or controlled environment, then transplant them into serpentine rock within the three mitigation areas.

- Seed from existing Santa Clara Valley dudleya shall be collected from all the populations on the project site area. Dried dudlyea flower spikes shall be collected from plants by breaking the dried flower stem. No more than 10 percent of the flowering stems and fruits shall be colleted from any individual dudleya plant. The seeds shall be processed by removing the fruits of the dudleya by hand and crushing by use of a blender or grinder such that the seeds are released. Seed shall be distributed at the preserve areas and used for controlled propagation.

- The mitigation transplantation and propagation efforts shall meet the final success criteria described in the proposed mitigation plan in Appendix C of this report. Achievement of these final success criteria will indicate that the project shows a steady trend toward reaching the established goals and that mitigation efforts have been successful.

  The mitigation plan will assess the habitat of the preserve areas from the time of construction until the project has met or exceeded all success criteria or until the City and Kaufman & Broad agree that success criteria are likely to be met with little chance of failure. Quantitative data collection and monitoring will be conducted throughout the mitigation site.

- The project applicant shall follow the specifics of the implementation plan outlined in the proposed mitigation plan for the project. Based on the review of several similar restoration projects that have involved translocation of serpentine soils and Santa Clara Valley dudleya, it is apparent that this mitigation method can achieve successful establishment if conducted properly. Kaufman and Broad shall contract with a firm that has successfully conducted Santa Clara Valley dudleya translocation for other City of San Jose projects. Additionally, proposed mitigation will include an experimental site that will allow continued study of this plant and the optimal conditions that are required for it's

successful establishment. Monitoring information obtained from this site will provide insight into the appropriate methods to be followed in the future, allowing for the continued existence of the Santa Clara Valley dudleya. Details regarding the implementation plan and the success criteria for the Santa Clara Valley dudleya mitigation are provided in Appendix C of this report.

Conclusion: **Implementation of the above-described mitigation measures would reduce impacts to Santa Clara Valley dudleya to a less than significant level. (Less Than Significant Impact with Mitigation)**

Special-Status Animal Species

Loggerhead Shrike

- No more than 30 days prior to construction or grading, a qualified biologist would survey the site to determine whether Loggerhead Shrikes nest on the project site. In the event this species is found nesting on the site, removal of nest and adjacent trees would be avoided during the nesting season. Trees would only be removed after the nesting season when the young Loggerhead Shrikes have left the nest.

Conclusion: **With implementation of the above mitigation, potential impacts upon individual Loggerhead Shrikes would be reduced to a less than significant level. (Less Than Significant Impact with Mitigation)**

White-tailed Kites

- No more than 30 days prior to construction or grading, a qualified biologist would survey the site, including the areas around the existing house on the site, to determine whether White-tailed Kites nest on the project site. In the event this species is found nesting on the site, removal of nest and adjacent trees would be avoided during the nesting season. Trees would only be removed after the nesting season when the young White-tailed Kites have left the nest.

Conclusion: **With implementation of the above mitigation, potential impacts upon individual White-tailed Kites would be reduced to a less than significant level. (Less Than Significant Impact with Mitigation)**

Northern Harriers

- No more than 30 days prior to construction or grading, a qualified biologist would survey the site, including the areas around the existing house on the site, to determine whether Northern Harriers nest on the project site. In the event this species is found nesting on the site, a buffer 200-feet in diameter surrounding the nest would be provided. All construction activities within the buffer area would be postponed until after the nesting season when the young Northern Harriers have left the nest.

Conclusion: **With implementation of the above mitigation, potential impacts upon individual Northern Harriers would be reduced to a less than significant level. (Less Than Significant Impact with Mitigation)**

California Tiger Salamander

- Protocol-level surveys for CTS shall be completed in the vicinity of Hillsdale Avenue pond, including five surveys to be completed in the winter of 2000 (December to February), with follow-up surveys for larvae in the Hillsdale Avenue pond in spring 2001 (three surveys between 15 March and 15 June 2001). If no CTS are detected through the protocol-level surveys, then the project would not result in impacts to CTS in the Hillsdale Avenue pond, and no further mitigation would be required.

- In the event CTS are detected in the vicinity of the Hillsdale Avenue pond, then the project would implement the following mitigation measures:

  - The project would mitigate impacts by setting aside and enhancing available on-site estivation habitat around the Hillsdale Avenue pond. Rock piles would be placed near the pond and curb barriers would be placed to keep the CTS out of the developed areas. Any residual effects that cannot be mitigated through enhancement on-site would be replaced off-site at a 1:1 ratio for both breeding and estivation habitat, adjacent to a known CTS population.

  - If on-site mitigation is not feasible, then the project would protect an existing off-site CTS population by fee-title or conservation easement at a 1:1 ratio (including both breeding and estivation habitat). The final acreage figure would depend upon further analysis (part of the on-going protocol-level surveys) and negations with CDFG.

- The potential estivation habitat on the site that could serve the quarry pond population will be surveyed to determine the extent of estivation on the site. Curb barriers shall be installed along the edge of the grading area prior to grading, to prevent CTS from entering the site.

Conclusion: **With implementation of the above mitigation, the proposed project would not result in impacts to California tiger salamander or its habitat. (Less Than Significant Impact with Mitigation)**

Loss of Wetland and Drainage Channel Habitat

Activities associated with grading of the site would result in direct impacts to 0.002 acres of seep habitat, 0.005 acres of drainage channel habitat, and approximately 0.10 acres of wetlands along Hillsdale Avenue. Wetland mitigation measures are typically project specific, and several approaches are usually available for consideration during project development. Significant impacts to wetland areas can be mitigated by use of the following measures individually or in combination, on or off the project site. Indirect impacts may also occur to the 0.35-acre seasonal pond if construction is conducted during the winter rains. Additional indirect impacts could include the degradation of water quality within the wetland associated with runoff from unstabilized soils exposed during grading or earth moving activities.

Potential wetland mitigation measures include the following:

- Avoidance of wetland areas
- Enhancement or restoration of existing wetlands
- Creation of new wetlands

- Contribution of in-lieu fees for the restoration or preservation of existing wetlands
- Purchase of existing wetlands through a wetland mitigation bank

These alternative measures for wetland mitigation are recommended for the proposed project impacts. The actual alternative measure selected would be coordinated and ultimately determined by the Corps through the Section 404 permitting process and the Regional Board through the Section 401 permitting process. To mitigate the loss of wetland habitat on the site, permit applications will be prepared and submitted to the Corps and Regional Water Quality Control Board. A wetland mitigation plan shall, at a minimum, specify the type of mitigation selected (e.g., creation of new wetlands, dedication of existing wetlands, or payment of in lieu fees), and the method of determining the amount of mitigation (e.g., fees, amount of replacement habitat). If wetlands are to be replaced, the mitigation plan shall specify the location, existing conditions, method of improvement, maintenance, and success criteria.

- Proper erosion control measures shall be implement to ensure that existing wetlands and water quality are not impacted. An erosion control plan shall be prepared prior to construction.

- Vegetated buffers shall be constructed between development and existing wetlands and drainages. Buffers should be of sufficient width and should be designed to eliminate potential deposition of sediment in the wetland. When feasible, buffers should be designed in a manner, which complements the habitat values associated with the wetland areas.

Conclusion: **Implementation of the above mitigation measures would reduce impacts to wetland and drainage channel habitats to a less than significant level. (Less Than Significant Impact with Mitigation)**

Loss of Ordinance Trees

- Loss of ordinance size trees would be mitigated by implementation of the proposed landscaping plan, including conformance with the City of San Jose landscaping guidelines. The loss of ordinance size trees on the site would be mitigated by moving or replanting 24-inch box specimen trees within the new landscaped areas throughout the site at a minimum ratio of 1:1 (replaced:impaced) for ordinance size trees removed.

- Native trees removed for the projects shall be replaced at a ratio of 3:1 with the same species from locally collected stock. Replacement trees shall be planted with container stock at standard planting densities for that species (about 15-foot on center for oaks and large native trees, about 8-foot centers for small trees such as willows or buckeyes). Monitoring of all planted trees shall be required for a period of five years. Monitoring shall be conducted in years 1-3 and in year 5. Monitoring reports will be prepared and submitted to the City. The survival rate for these trees after five years shall be 80 percent. If at the end of three years, the survival rate is less than 80 percent, replanting shall be conducted to attain that rate and CDFG shall be consulted to determine other corrective actions. If irrigation systems are used, all replacement native tree species grown in natural areas that are intended to be self-sustaining shall be "weaned" of any supplemental water by the fourth year.

- All trees adjacent to proposed project construction areas which are not removed will be avoided and protected according to the following procedures:

    - Before other phases of the construction project begin, a continuous protective fence must be installed surrounding the bases of trees to be saved. For the ideal configuration, locate the fence to maximize the exclusion of traffic over the root zones, preferably at the drip lines. Realistically, where the building envelopes extend under a tree's canopy, define as much of that root zone as possible; modification of the fence line to the building eaveline is allowable.

    - To preserve the important absorbing roots of trees to remain after construction, no cuts or fills should be allowed beneath their canopies. The method for site preparation of scraping the surface soil with a blade should not be allowed within the drip lines.

    - Roots which must be severed and measure over one and one-half inches (1.5") in diameter should be cut cleanly, smoothly without crushing, shattering, or tearing. If roughly cut by heavy equipment, re-cut to sound wood. Cuts should be made only to lateral roots where possible.

    - Equipment operators should be informed that machinery can cause great injury to standing trees. They must take unique care to operate with as much distance as possible between machines and trees (branches, trunks, and roots). Any accidental damage should be promptly repaired by a qualified arborist.

    - Avoid grade changes such as can occur when soil or other construction materials are stored or stock-piled beneath any tree's canopy and thus over its root zone.

    - Avoid extra stress for tree roots to remain by limiting machine and vehicle traffic and parking over roots. Where frequent traffic must pass beneath a canopy, consider placement of a buffer to absorb and dissipate the load and reduce soil compaction in the root zones; wood chips or crushed rock could be used for this purpose.

    - No storage, pouring, or leaking of any fuel, oil or chemical is to be allowed beneath a tree's canopy.

    - No signs, wires or other construction apparatus should be attached to any tree.

    - Any necessary trimming should be done to published standards under the supervision of a qualified arborist, either a Certified Arborist (Western Chapter, International Society of Arboriculture), a member of the California Arborists' Association, or a member of the American Society of Consulting Arborists.

Conclusion: **Implementation of the above mitigation measures would reduce impacts to ordinance size trees to a less than significant level. (Less Than Significant Impact with Mitigation)**

Mitigation Measures Not Proposed by the Project

As an alternative to the proposed mitigation plan for the project's impacts to Santa Clara Valley dudleya, the following measure could be included as a part of the project:

- The project applicant, Kaufman & Broad, could purchase a conservation easement on a property that contains a dudleya population of equivalent size to that of the project site. This would be an alternative means to reduce the project's impacts to dudleya to a less than significant level.

Conclusion: **Implementation of the above measure (not currently included in the project) would reduce the project's impact to Santa Clara Valley dudleya. (Less Than Significant Impacts with Mitigation)**

Significant Unavoidable Impacts of the Project

Development of the project would result in a net loss of foraging habitat for raptors and special-status bird species, including Loggerhead Shrikes, Northern Harriers, and White-tailed Kites. Although the project includes mitigation measures to avoid impacts to individual raptors, the loss of this foraging habitat on the site is considered significant and unavoidable.

Conclusion: **The project would result in a significant unavoidable loss of raptor foraging habitat. (Significant Unavoidable Impact)**

E. ENVIRONMENTAL HAZARDS AND HAZARDOUS MATERIALS

The following discussion is based upon Phase I Preliminary Environmental Site Assessments conducted for the project site by *Aqua Science Engineers, Inc.* and upon the previous discussion in the Communications Hill Specific Plan EIR (1991). The investigations included a site reconnaissance, and a review of available documents, maps, aerial photographs and a database list report. The objectives of these investigations were to identify existing and potential contamination sources, evaluate potential impacts to the project, and develop recommendations for any further investigations that may be required to determine the extent of any subsurface contamination. Copies of these Phase I reports are provided in Appendix D of this EIR.

1. Existing Setting

The project site is mainly undeveloped vacant hillside land. An existing AT&T communications tower, approximately 115 feet in height, is located adjacent to the Vieira and Long-Kwei property portions of the site, at the top of Communications Hill. A paved access road, with a gate off Mill Pond Way, provides access to the AT&T communications tower.

There is a single-family bungalow house located on the Berns/Ross property (475 Hillsdale Avenue) portion of the project site. The house is situated on a bench cut into a steep slope, which is accessed by a sloping, unimproved driveway. Below the house and nearer to Hillsdale Avenue is a detached single car garage that may be contemporary to the house. Two sheds are present on the property and appear to be of more recent construction (within the last 30 years).

Potential On-Site Sources of Contamination

The project site is potentially subject to environmental hazards from two sources: the presence of naturally-occurring chrysotile asbestos, which is found in serpentinite rock and soils, and potential presence of hazardous materials associated with the existing house on the Berns/Ross property.

Naturally-Occurring Chrysotile Asbestos

The project site is partially underlain by serpentinite rock. Specifically, serpentine is found on the hill slopes throughout the site. The naturally-occurring mineral chrysotile is commonly found in serpentine areas and is a predominant type of asbestos. Chrysotile appears randomly as veins or small clumps of white fibers bound in the rock. Franciscan Complex sandstone and shale can also contain small amounts of chrysotile asbestos. A detailed discussion of the health risks and government regulations relating to asbestos was provided on pages 172-176 of the Communications Hill Specific Plan EIR (1991), and is hereby incorporated by reference.

Few chrysotile-bearing veins were observed in rock exposures and no veins were observed in the borings or pits on the Berns/Ross property. Eleven samples of the colluvial and residual soils encountered in borings on the Vieira property were analyzed for asbestos concentrations. No asbestos was identified in any of the samples. However, previous testing of the serpentinite rock identified asbestos concentrations above one percent, which exceeds the hazardous waste classification threshold.[15]

[15] Terrasearch Inc., Geotechnical Engineers and Geologists, Geotechnical Investigation on Proposed Residential Development Communication Hill, APN 455-10-32,33, Hillsdale and Narvaez Avenues, San Jose, California,

Existing House on Berns/Ross Property

As mentioned previously, there is an existing single-family, bungalow-style house present on the Berns/Ross property. This house dates back to 1915 and contains several ancillary structures, including a garage and two sheds. An above ground water tank, made of wood, which has been destroyed, was observed north of the house. There is a water well located in the eastern portion of the parcel, and a septic tank is located adjacent to the house.

There is a potential for asbestos-containing materials (ACMs) and for lead paint to be present in the building materials of the house. ACMs could be present in the vinyl materials within the house. No other materials suspected to contain asbestos were identified during the site inspection, however, it is possible that other areas which could not be inspected may contain ACMs. The paint used on the house could contain lead.

One pole mounted transformer was observed west of the house. No soil discoloration or other signs of leakage were observed below this transformer.

Potential Off-Site Sources of Contamination

According to the Communications Hill Specific Plan EIR (1991), there are two potential off-site sources of environmental hazards that could affect the project site: the presence of natural mercury concentrations and electromagnetic radiation from the operation of the County's communication center and the AT&T communication tower facility.

Naturally-Occurring Mercury

The Specific Plan EIR identified that an approximately 3.5 acre area north and east of the project site is underlain with silica-carbonate. Small patches of mercury sulfide (cinnabar) are scattered within the silica-carbonate rock. The band of silica-carbonate rock was exposed in cut slopes created by the Azevedo Quarry operation, which began operating in 1971. The Azevedo Quarry area is located farther east of the site (refer to Figure 3).

As described in the Specific Plan EIR, the health risk associated with mercury stems from exposure to mercury in both a solid form (soil/dust ingestion) and in vapor form (inhalation). Mercury is not a known carcinogen. However, overexposure to mercury most commonly affects the nervous system, causing weakness, fatigue, loss of appetite, and damage to the kidneys. Most often, the effects of exposure to mercury develop slowly over many years through repeated exposure.[16]

The Azevedo Quarry is no longer an active quarry; that is, there is no longer any material being excavated from the quarry. The quarry site is currently used for the recycling of concrete and asphalt into roadbed material. The material to be recycled is transported to the site. A reclamation process is currently in place at the quarry, which includes planting of the exposed slopes. The quarry is about 90% reclaimed now, and the reclamation is expected to be complete by the end of 2002.

October 15, 1998 and Lowney Associates, Inc., Draft Geotechnical Investigation for Vieira Property, Residential Development, San Jose, California, November 11, 1999. p. 10.

[16] City of San Jose, Final Environmental Impact Report, General Plan Amendment, Communications Hill Specific Plan, Volume II, October 1991. p. 177.

Electromagnetic Fields and Radiation

The Santa Clara County communication center provides a 360-degree radius for radio wave and microwave transmissions. Eleven microwave transmitters are maintained at the County's communication center by the County, the City of San Jose, the Federal Aviation Administration (FAA), and San Jose Waterworks. AT&T operates five microwave paths from the communication tower on the northeastern portion of the site. Refer to Appendix I of the Communications Hill Specific Plan EIR for a detailed discussion of the radio waves and microwaves produced by these facilities.

Electromagnetic radiation (EMR), including microwaves and radio waves, is a form of energy that travels through space at the speed of light. EMR consists of two components, an electric field and a magnetic field. The frequency of the EMR determines the energy of the radiation. The major sources of EMR in the environment include radio and television broadcasting, radar units for aviation and marine navigation, satellite communication, mobile telephones, and microwave ovens.

The electromagnetic spectrum includes all of the various forms of EMR, ranging from extremely low frequency radiation (i.e., alternating current electricity) to X-rays and gamma rays, which have very high frequencies. Radio wave and microwave radiation are classified in the "radiofrequency" portion of the electromagnetic spectrum. Radio waves occupy the lower part of the radiofrequency portion of the electromagnetic spectrum. Microwaves have a higher frequency than normal radio waves.

Some studies have found an association between exposure to electric and magnetic fields and health problems. In recent years there has been considerable controversy regarding the potential health effects resulting from long-term exposure to electromagnetic fields (EMFs). While EMFs occur naturally and are present in everything from visible light to radio waves to X-rays, attention has focused on whether exposure to EMFs is hazardous.

The strength of an EMF is dependent upon the amount of current; the more power being consumed, the stronger the EMF. The electric field strength component of EMF falls off dramatically with distance and can be shielded by trees or structures. The magnetic field component of EMF is produced as a result of the movement (current) of electricity through a conductor. As with electric fields, magnetic field strength decreases dramatically with distance from the source; however, the magnetic field component passes through most materials so magnetic fields cannot be effectively shielded by normal building materials.

Hundreds of laboratory and epidemiological studies have been conducted on the relationship between EMF exposure and health effects. Scientists to date have found no threshold value, dose response or causative relationship that demonstrates evidence of any adverse physical effect from EMF.

Because magnetic fields cannot be effectively shielded, most health-related research has focused on the potential hazards associated with the magnetic field component of EMFs. Magnetic fields are measured in units of milliGauss (mG).

The City of San Jose does not have any setback requirements in place related to EMF. The only statewide mandate of any kind that has been established is the State of California School Siting Rules. The policy requires that schools be sited a minimum of: (1) 100 feet from the right-of-way edge of a 100/115 kV line; (2) 150 feet from the right-of-way edge of

a 220/230 kV line; and (3) 250 feet from the edge of the easement of any 345 kV and higher voltage transmission line.

Regulatory Agency Database Review

As part of this investigation, a regulatory agency database report was reviewed to determine the presence of any reported contamination incidents within the site vicinity. The database identified 14 leaking underground storage tank (LUST) sites and six CORTESE sites within approximately 0.5 miles of the site. However, all of these sites are located either down-gradient or far from the site, and therefore, are not anticipated to affect the project site.

The database also identified one registered generator of hazardous waste and one underground storage tank/above ground storage tank (UST/AST) site within 0.125 miles of the site. Because these sites are registered, they are regularly inspected by and under the guidance of local regulatory agencies. Therefore, these facilities are not anticipated to affect the project site.

The regulatory search did not find any mapped sites within one mile of the site for any of the other databases.

2. Environmental Hazards and Hazardous Materials Impacts

For the purposes of this project, a hazard or hazardous materials impact is considered significant if the project would:

- expose the public to a significant risk associated with the storage, use, production or disposal of hazardous materials on the site or from existing hazardous materials contamination on or near the site; or
- expose people to naturally-occurring environmental hazards, such as airborne mercury vapor from disturbance of naturally occurring mercury in soils, or airborne asbestos fibers from construction on asbestos-containing sepententite rock; or
- expose people or structures to a significant risk of loss, injury or death; or
- create a public health hazard.

Potential Sources of On-Site Impacts

Naturally-Occurring Chrysotile Asbestos

Asbestos-containing serpentinite rock is present over wide areas of the project site. Chrysotile-bearing serpentine in an undisturbed state is not considered a hazardous material. However, when this rock is disturbed during grading and construction activities, the resulting dust could contain asbestos fibers. Grading of the site could release significant amounts of asbestos fibers in the work area and surrounding area, if proper dust control measures are not employed. Naturally-occurring chrysotile asbestos fibers released into the air could pose a health hazard to construction workers and nearby residents. In addition, after grading is complete, exposed serpentinite soil areas could continue to release asbestos fibers. Breathing airborne asbestos has been correlated with increased frequency of some types of cancer and has been related to some types of lung disease. The State of California has established a threshold of one percent asbestos by volume in a given quantity of soil as constituting a "positive test result" for asbestos, indicating the need for mitigation. The threshold of one percent asbestos is also applied to define hazardous levels in "waste

material". The presence of asbestos in the soils on the project site is considered a potentially significant impact.

Asbestos is a Toxic Air Contaminant regulated by the BAAQMD. BAAQMD regulation 11, rule 14 prohibits the use of serpentine material for road surfacing if the material has an asbestos content greater than five (5) percent.

- **The presence of naturally-occurring chrysotile asbestos on the site could result in significant impacts to construction crews and nearby residents during grading and construction for the project, and upon future residents of the proposed development. (Significant Impact)**

Existing House on Berns/Ross Property

As described above, there is a water well located on the eastern portion of the Berns/Ross property and a septic tank located adjacent to the house. This well has the potential to conduct hazardous materials, and therefore, would be destroyed under permit obtained from the Santa Clara Valley Water District (SCVWD).

- **The presence of a water well and a septic tank on the site would not significantly impact the project. (Less Than Significant Impact)**

Impacts Due to Off-Site Sources

Naturally-Occurring Mercury

Soils known to contain naturally-occurring mercury are located north and east of the project site. The project does not propose construction activities in these areas, and therefore, would not disturb soils or generate dust containing mercury. Because the project would not disturb soil areas containing mercury, the project is not anticipated to generate airborne mercury vapor. The Azevedo Quarry to the east of the project is no longer operational, so soils containing naturally-occurring mercury are no longer being exposed or disturbed at the quarry site. For these reasons, the presence of naturally-occurring mercury in nearby soils is not anticipated to result in significant health hazard impacts upon the project residents.

- **The presence of naturally-occurring mercury in nearby soils is not anticipated to result in significant health hazard impacts upon the project residents. (Less Than Significant Impact)**

Electromagnetic Fields

The California Environmental Quality Act (CEQA) advises that a project's impact is significant if it creates a potential public health hazard. EMF cannot currently be regarded as such a potential hazard, due to the lack of substantial evidence in research findings. Without any conclusive scientific evidence regarding the health effects of EMF and without relevant adopted standards, there is no basis at this time to conclude that residents or workers on the project site would be exposed to potentially significant EMF-related hazards.

In an effort to deal with the uncertainty of EMF, several utility companies and some government jurisdictions have addressed the EMF issue through "prudent avoidance". Prudent avoidance serves to limit public exposure to EMF through planning and design measures involving relatively small investments of money and effort. The California State

Board of Education standard for schools (typically the most rigorous standard) is to set buildings back 100 feet from the transmission line right-of-way. Alternatively, the National Council on Radiation Protection has identified draft guidelines for new office and industrial environments, which recommends a standard of 2 mG, over the spectrum from near zero to 3.0 kHz.

The Communications Hill Specific Plan EIR concluded that by restricting the overall height of structures on the site, and by setting buildings back at least 200 feet from the communications facilities, future residents would not be subject to significant health and hazard risks due to the transmission of radio and microwaves.The project design includes setbacks for proposed residential buildings of at least 200 feet from the County communication center and the AT&T microwave tower. The project is also being designed so that residential structures are not located within direct transmission paths. Therefore, because the project design conforms to the requirements of the Specific Plan, these existing facilities would not significantly impact the project.

- **The Specific Plan EIR concluded that, with appropriate design measures, the presence of the radio waves and microwaves from the existing County communication center and the AT&T communication tower would not significantly impact future residents on the site. Because the project conforms to the requirements of the Specific Plan, this impact is considered less than significant. (Less Than Significant Impact)**

Regulatory Agency Database Review

As described above, the database search identified 14 LUST sites and six CORTESE sites within approximately 0.5 miles of the site. However, because all of these sites are located either down-gradient or far from the project site, they are not anticipated to significantly impact the project site.

- **The project would not be subject to significant impacts due to off-site contamination sources. (Less Than Significant Impact)**

3. Mitigation Measures for Environmental Hazards and Hazardous Materials Impacts

Mitigation Measures Proposed by the Project

The following mitigation measures are included in the project to reduce potential impacts due to the presence of environmental hazards and hazardous materials.

Asbestos-containing Rock

The project includes the following industry-standard measures for controlling asbestos during grading and the short-term and long-term potential health hazard impacts resulting from the presence of asbestos-containing serpentinite rock on-site:

- The key to reducing the potential for significant asbestos emissions during subsurface activities in serpentine rock is dust control. If good dust control is maintained, asbestos emissions can be kept well below potential impact levels. A site safety plan would be prepared for the proposed project by an industrial hygienist that will include the measures necessary to limit the asbestos exposure of on-site workers, limit off-site

migration of airborne asbestos, and fulfill regulatory requirements for grading in rock and soil which contain naturally occurring asbestos. The dust control plan would include the following elements:

- Access to work areas that are suspected to contain asbestos would be limited to authorized, trained personnel only and posted as such.

- Each area proposed for work that may contain asbestos shall be sufficiently moisture conditioned before beginning work to minimize dust emissions during excavation and grading. Water applied for dust control purposes can be treated with a small amount of a wetting or penetrating agent.

- All working surfaces (including haul roads and other roads subject to traffic) on material potentially containing asbestos shall be kept sufficiently moist so that visible dust is not emitted during grading or driving.

- The exposed surface of haul loads potentially containing asbestos shall be kept sufficiently moist to minimize dust/asbestos emissions.

- If measured asbestos or dust emissions exceed the Site Specific Action Level, the Contractor will stop work and increase dust control measures to reduce emissions to within acceptable levels, including measures such as adding water trucks, establishing a mist curtain downwind of work areas, reducing vehicle speeds, and/or treating roads with magnesium chloride.

- Workers must avoid getting dust or dirt that potentially contain asbestos on their hands, face, clothing, or shoes. Shoes must be cleaned before leaving the site. All clothing that potentially contain asbestos must be cleaned with a HEPA vacuum before workers leave the site.

- Personnel must exit the site into the work area through a marked decontamination corridor.

- The cabs of all vehicles used in the area of the site potentially containing asbestos must be cleaned with a wet rag to keep them free from accumulated dust and dirt. Wet cleaning must be followed by cleaning with a HEPA vacuum.

- All vehicles and equipment in contact with asbestos-containing materials must be thoroughly rinsed and scrubbed to remove residual soil, including wheels and wheel wells.

- All vehicles and equipment that have had contact with asbestos must pass through the decontamination corridor.

- All persons entering the work site must be familiar with the provisions of the site safety plan and verify by signature that they have read it. Each worker must have attended a general asbestos hazard orientation and training session. Weekly "tailgate" safety meetings must be conducted during the course of work to address specific issues and review basic provisions.

- An air monitoring program must be instituted at the site to evaluate asbestos emissions during the course of grading. A Site Specific Applied Action Level,

well below the OSHA Action Level [0.1 fibers longer than 5 μm per cubic centimeter, 8-hour time weighted average (TWA), as measured by phase contrast microscopy (PCM)], will be specified. If the Site Specific Applied Action Level is reached or exceeded, dust control measures must be increased.

- During the first day of work in the suspect asbestos-containing areas, the Contractor's Health and Safety Officer must collect personal air samples from a representative number of employees. The results will be used to monitor worker exposure and the effectiveness of dust control techniques. As long as stringent dust control is maintained, respirators and protective suits are not required.

- The contractor's Health and Safety Officer will have the authority to stop work if Site Specific Action Level or Site Specific Downwind Action Level for airborne asbestos or particulates is exceeded, or if significant dust emissions are observed.

- A health and safety plan would be prepared for the project by an industrial hygienist. As required by OSHA, the health and safety plan would identify measures to reduce the potential short-term and long-term impacts to workers, future residents, and the public, during and after project construction. In addition to the measures described above, the health and safety plan would include the following measures:

  - The grading contractor used would be required to obtain or present hazardous materials licensing before commencing project grading activities.
  - The geologist or project engineer would be on site during all earthmoving work to inspect the excavation areas and identify serpentine load in haul vehicles.
  - Excavation surfaces and excavated material would be checked for chrysotile during grading to divert material with high chrysotile content for special handling
  - Adhere to all state and federal OSHA standards for asbestos monitoring and removal.
  - The applicant would post Proposition 65 warnings and disclosures on and around the site, as well as in all sales and construction documents.
  - Excavated materials consisting of asbestos-containing serpentine would not be used to surface non-paved roadways and would be placed within deeper portions of the proposed fill areas on-site.
  - In order to reduce the long-term potential release of asbestos after site grading, asbestos-bearing serpentinite rock within cut areas, as well as exposed fill slopes composed of serpentinite rock, would be capped with asbestos-free soil or mulch (except for in the Dudleya mitigation areas, described in Section II., D. of this SEIR). Steep slopes would be serrated or benched in order to retain the cover material. Capping of exposed rock would also be beneficial to support landscaping and provide erosion control. Capping of serpentinite rock in proposed street areas would not be necessary since these areas would be paved.

Conclusion: **Implementation of the mitigation measures described above and included in the proposed project would ensure that airborne asbestos concentrations remain well below applicable risk levels and reduce potential impacts from the presence of asbestos-containing serpentinite rock to a less than significant level. (Less Than Significant Impact with Mitigation)**

The following mitigation measures are included in the project to reduce impacts from other environmental hazards on the site:

- The existing water well on the Berns/Ross property would be closed and destroyed in conformance with SCVWD requirements and under permit obtained from the SCVWD.

- The existing septic tank on the Berns/Ross property would be closed in conformance with local City of San Jose and County of Santa Clara requirements.

Conclusion: **With the implementation of the above mitigation, development of the project site would not expose future residents and workers on the site to a significant risk from environmental hazards or hazardous materials contamination on the site or from off-site sources. (Less Than Significant Impact)**

F. TRANSPORTATION AND CIRCULATION

The following discussion of transportation is based upon a traffic analysis prepared for the project by *Hexagon Transportation Consultants, Inc.* A copy of the traffic analysis is provided in Appendix E of this EIR. The purpose of the traffic analysis was to identify the potential traffic impacts of the proposed residential development, according to the standards and methodologies set forth by the City of San Jose and the Santa Clara Valley Transportation Authority (VTA).

The traffic analysis evaluated 16 signalized intersections, two unsignalized intersections, one intersection where signalization is planned, and five freeway segments in the vicinity of the project site. The nine CMP intersections were evaluated against the standards of both the City of San Jose and the County CMP. The specific intersections and freeway segments analyzed are identified below:

Study Intersections

Capitol Expressway and Monterey Road (N)*
Capitol Expressway and Monterey Road (S)*
Pearl Avenue and Capitol Expressway*
Narvaez Avenue and Capitol Expressway
Pearl Avenue/Foxworthy Avenue and Hillsdale Avenue
Narvaez Avenue and Hillsdale Avenue (signalization planned)
Almaden Expressway and Foxworthy Avenue
SR 87 southbound ramps and Capitol Expressway*
Snell Avenue and Capitol Expressway*
Almaden Expressway and Cherry Avenue
Almaden Expressway and Branham Lane*
Almaden Expressway and Blossom Hill Road*
SR 85 southbound off-ramp and Almaden Plaza Way
Copperfield Drive and Capitol Expressway
Vistapark Drive and Capitol Expressway
Almaden Expressway and SR 85 northbound ramps*
Almaden Expressway and SR 85 southbound on-ramp/Almaden Plaza Way*
Old Almaden Road and Foxworthy Avenue (unsignalized)
Vistapark Drive/Future Project Entrance and Hillsdale Avenue (unsignalized)

CMP intersections are denoted with an asterisk (*).

Study Freeway Segments

SR 87, from SR 85 to Capitol Expressway
SR 87, from Capitol Expressway to Curtner Avenue
SR 87, from Curtner Avenue to Almaden Expressway
SR 87, from Almaden Expressway to Alma Avenue
SR 87, from Alma Avenue to I-280

Traffic conditions were evaluated for the following scenarios:

Existing Conditions. Existing traffic volumes were obtained from recent traffic counts.

Background Conditions. Background traffic volumes were estimated by adding to existing peak-hour volumes the projected volumes from approved but not yet completed developments. Background conditions include a reassignment of existing traffic due to the completion of the Foxworthy Avenue bridge.

Project Conditions. Future traffic volumes with the project (hereafter called *project traffic volumes*) were estimated by adding to background traffic volumes the additional traffic generated by the project. Project conditions were evaluated relative to background conditions in order to determine potential project impacts.

1. Existing Setting

Existing Roadway Network

Regional access to the project site is provided via SR 87 and Monterey Road (SR 82). These two facilities are described below.

SR 87 is a four-lane freeway that is aligned in a north-south orientation. SR 87 begins at its interchange with SR 85 and extends northward to Taylor Street where it becomes a non-grade separated facility and changes designation to Guadalupe Expressway. Access to the project site is provided by ramps at Capitol Expressway and at Narvaez Avenue.

Monterey Road (SR 82) is a six-lane major arterial that is oriented in a north-south direction. Monterey Road extends southward into Morgan Hill and northward into San Francisco. Access to the site from Monterey Road is provided via Capitol Expressway.

Local access to the site is provided by Almaden Expressway, Capitol Expressway, Foxworthy Avenue, Hillsdale Avenue, Narvaez Avenue, Pearl Avenue, and Snell Avenue. These roadways are described below.

Almaden Expressway is a six-lane north-south major arterial. Almaden Expressway begins just south of downtown San Jose and extends southward into the Almaden Valley where it terminates at Harry Road. Access to the site is provided via Foxworthy Avenue.

Capitol Expressway is a six-lane major arterial that is aligned in an east-west orientation. Capitol Expressway begins at its interchange with I-680 in east San Jose, where it changes designation from San Antonio Street, and extends to the south and west where it changes designation to Hillsdale Avenue at Almaden Expressway. Access to the site is provided via Vistapark Drive, Narvaez Avenue, and Pearl Avenue.

Foxworthy Avenue is a two-lane collector that begins at Bascom Avenue and extends eastward to Old Almaden Road where it currently terminates. Foxworthy Avenue begins again at Guadalupe River and extends to Pearl Avenue. A bridge spanning the Guadalupe River, connecting Foxworthy Avenue to the west, is currently under construction. Access to the site is provided via Hillsdale Avenue.

Hillsdale Avenue is currently a two-lane local street that is aligned in an east-west orientation. Hillsdale Avenue begins at Pearl Avenue and extends eastward beyond Snell

Avenue terminating just west of the railroad tracks. Access to Hillsdale Avenue is provided via Narvaez Avenue and direct access to the site will be provided by project entrances located at the intersection of Vistapark Drive and Hillsdale Avenue, on Hillsdale Avenue on either side of Vista Park Drive, and on Hillsdale Avenue west of Vista Park Drive via the Lancaster Gate neighborhood connection. Hillsdale Avenue is designated in the City of San Jose General Plan to be a four-lane arterial.

Narvaez Avenue is a two-lane collector that begins at the Helzer residential development east of SR 87 and extends southward beyond Branham Lane where it terminates at Calpella Drive. Direct access to the site is provided via a project entrance at the termination point of Narvaez Avenue.

Pearl Avenue is a four-lane north-south collector that begins at Hillsdale Avenue and extends southward to Chynoweth Avenue where it terminates. Access to the site is provided via Hillsdale Avenue.

Snell Avenue is a four-lane collector that begins south of Santa Teresa Boulevard and extends northward to Hillsdale Avenue where it terminates. Access to the site is provided via Capitol Expressway and Hillsdale Avenue.

Existing Bicycle and Pedestrian Facilities

There are a number of County-designated bikeways within the vicinity of the project site. Bike lanes are provided on Cherry Avenue (between Curtner Avenue and Almaden Expressway), on Capitol Expressway (between Pearl Avenue and U.S. 101), and on Narvaez Avenue (north of Branham Lane).

A bike path is provided along the east side of SR 87 between Oakdridge Mall and the Tamien CalTrain/Light Rail Station. The bike lanes on Narvaez Avenue are part of this bike path. This bike path is also available for use by pedestrians. Bike lockers and bike racks are provided at the Curtner, Capitol, and Branham LRT stations.

Pedestrian facilities in the project area consist primarily of sidewalks along the streets in most residential and commercial areas, as well as the aforementioned bike/pedestrian path. Sidewalks are found along virtually all previously-described local roadways in the study area and along the local residential streets and collectors near the site, with the exception of portions of Hillsdale Avenue. The portions of Hillsdale Avenue without existing sidewalks are along the project frontage, under the SR 87 overpass, and just east of SR 87 on the south side. However, sidewalks are currently being constructed from the SR 87 overpass to Canoas Creek as part of the Rubino project's conditioned improvements.

Existing Transit Service

Existing transit service to the study area is provided by the Santa Clara Valley Transportation Authority (VTA). The services serving the site are described below.

Bus Service

The study area is served directly by two local buses. The 37 line provides service between Monterey Road & Senter Road and Bascom Avenue & Camden Avenue via Monterey Road, Capitol Expressway, Narvaez Avenue, Hillsdale Avenue, and Pearl Avenue, with 30-minute headways during commute hours. The 70 line provides service between the Capitol LRT

Station and Milpitas via Capitol Expressway, with 15-minute headways during commute hours. The nearest bus stop to the project site is on the 37 line and is located on Hillsdale Avenue at SR 87.

Light Rail Transit (LRT) Service

There is one LRT station located near the project site. The Capitol LRT station is situated on the Guadalupe Corridor LRT line and is located near the SR 87/Capitol Expressway interchange. The Capitol LRT station Park & Ride lots are accessible from Narvaez Avenue both north and south of Capitol Expressway. The Guadalupe Corridor LRT line provides service on 10-minute headways during commute and midday hours. It provides service between the Santa Teresa LRT station and the Baypointe LRT station, where transfers to Mountain View are available.

Existing Intersection Levels of Service

Traffic conditions at the study intersections were evaluated using level of service (LOS) methodology. *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The various analysis methods are described below.

Methodology

City of San Jose Signalized Intersections

All of the signalized study intersections are located in the City of San Jose and are therefore subject to the City of San Jose LOS standards. The City of San Jose LOS methodology is TRAFFIX, which is based on the *Highway Capacity Manual* (HCM) method for signalized intersections. TRAFFIX evaluates signalized intersection operations on the basis of average delay time for all vehicles at the intersection. Since TRAFFIX is also the CMP-designated intersection level of service methodology, the City of San Jose methodology employs the CMP default values for the analysis parameters. The City of San Jose LOS standard for signalized intersections is LOS D or better. The correlation between average delay and LOS is shown in Table 5.

CMP Intersections

Since TRAFFIX is the designated LOS methodology for both the CMP and the City of San Jose, the CMP study intersections are not analyzed separately, but rather are among the City of San Jose signalized study intersections analyzed using TRAFFIX. The only difference between the San Jose and CMP analyses is that project impacts are determined on the basis of different LOS standards - the CMP level of service standard for signalized intersections is LOS E or better.

Table 5 Signalized Intersection Level Of Service Definitions Based On Average Stopped Vehicular Delay		
Level of Service	Description	Average Stopped Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 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.	> 60.0
Source: *Interim Guidelines for Traffic Impact Analysis of Land Developments*, City of San Jose, June 1994.		

Freeway Segments

As prescribed in the CMP technical guidelines, the LOS 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 6. The CMP requires that mixed-flow lanes and auxiliary lanes be analyzed separately from HOV (carpool) lanes. The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for segments six lanes or wider in both directions and a capacity of 2,200

vphpl be used for segments four lanes wide in both directions. The CMP defines an acceptable level of service for freeway segments as LOS E or better.

Table 6
Level Of Service Definitions for Freeway Segments

Level of Service	Description	Density (vehicles/mile/lane)
A	Primarily free-flow operations. Vehicles are almost completely unimpeded in ability to maneuver within stream.	Less than 10.0
B	Reasonably free-flow conditions. The ability to maneuver within the traffic stream is only slightly restricted.	10.1 - 16.0
C	Provides for stable operation, however flows approach the range in which small increases will cause a substantial deterioration in service. Freedom to maneuver within the traffic stream is noticeably restricted.	16.1 - 24.0
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.	24.1 - 46.0
E	Operations are extremely unstable. Any incident can be expected to produce a serious breakdown with extensive queuing. Maneuverability is extremely limited.	46.5 - 55.0
F	Forced or breakdown conditions. Such conditions generally exist within queues forming behind breakdown points.	Greater than 55.0

Source: Transportation Research Board, Highway Capacity Manual, Special Report 209. Washington, D.C., 1994.

City of San Jose Intersection Analysis

The results of the LOS analysis under existing conditions are summarized in Table 7. The results show that the following four signalized study intersections currently operate at an unacceptable LOS E or F:

- Almaden Expressway and Branham Lane;
- Almaden Expressway and Blossom Hill Road;
- Almaden Expressway and SR 85 (S)/Almaden Plaza Way; and
- SR 87 southbound ramps and Capitol Expressway.

All other signalized study intersections currently operate at an acceptable LOS D or better, according to City of San Jose standards.

Table 7
Existing Intersection Levels of Service

Intersection	Peak Hour	Count Date	Avg. Delay	LOS
Capitol Expwy and Monterey Rd (N)*	AM	3/22/00	9.3	B
	PM	3/22/00	10.3	B
Capitol Expwy and Monterey Rd (S)*	AM	3/22/00	25.8	D
	PM	3/22/00	8.7	B
Pearl Ave and Capitol Expwy*	AM	5/10/00	46.4	E
	PM	5/11/00	25.8	D
SR 85 SB off-ramp and Almaden Plaza	AM	5/25/00	4.6	A
	PM	5/25/00	8.5	B
Narvaez Ave and SR 87 NB ramps	AM	5/31/00	9.5	B
	PM	5/31/00	9.4	B
Pearl Ave and Hillsdale Ave	AM	6/1/00	18.6	C
	PM	6/1/00	14.5	B
Almaden Expwy and Foxworthy Ave/a/	AM	5/23/00	15.2	C
	PM	5/23/00	16.9	C
Almaden Expwy and Branham Ln*	AM	6/14/00	75.3	F
	PM	3/14/00	42.7	E
Almaden Expwy and Blossom Hill Rd*	AM	6/15/00	42.6	E
	PM	3/15/00	122.6	F
Almaden Expwy and Cherry Ave	AM	5/24/00	18.6	C
	PM	5/24/00	24.5	C
Almaden Expwy and SR 85 (N)*	AM	6/15/00	5.4	B
	PM	10/1/98	18.2	C
Almaden Exwpy and SR 85 (S)*	AM	6/14/00	14.2	C
	PM	10/1/98	167.5	F
Copperfield Dr and Capitol Expwy	AM	5/18/00	7.0	B
	PM	5/18/00	9.5	B
Narvaez Ave and Capitol Expwy	AM	6/9/00	25.2	D
	PM	3/8/00	28.0	D
Vista Park Dr and Capitol Expwy	AM	5/23/00	16.7	C
	PM	5/23/00	18.0	C
SR 87 SB ramps and Capitol Expwy*/b/	AM	5/11/00	22.4	C
	PM	3/21/00	35.5	D
Snell Ave and Capitol Expwy*	AM	6/8/00	32.5	D
	PM	3/21/00	27.1	D

/a/ Background and project conditions include planned improvements.
/b/ The PM TRAFFIX coding was adjusted to get TRAFFIX to calculate an accurate level of service and intersection delay value.
* Denotes CMP intersection

CMP Intersection Analysis

The LOS results for the CMP intersections under existing conditions are also summarized in Table 7. The results show that the following three CMP study intersections currently operate at an unacceptable LOS F during at least one of the peak hours:

- Almaden Expressway and Branham Lane;
- Almaden Expressway and Blossom Hill Road; and
- Almaden Expressway and SR 85 (S)/Almaden Plaza Way.

Existing Freeway Levels of Service

The results of the freeway LOS analysis are summarized in Table 8. The results show that the following three directional freeway segments analyzed currently operate at an unacceptable LOS F during at least one of the peak hours:

- SR 87 northbound, Curtner Avenue to Almaden Expressway (AM peak hour);
- SR 87 northbound, Almaden Expressway to Alma Avenue (AM peak hour); and
- SR 87 southbound, I-280 to Alma Avenue (PM peak hour).

All other analyzed freeway segments operate at LOS E or better during the AM and PM peak hours.

Background Conditions

The following discussion describes background conditions in the project area. Background conditions are defined as conditions just prior to completion of the proposed development. Traffic volumes for background conditions include volumes from existing traffic counts plus traffic anticipated from approved developments in the vicinity of the site. This discussion first describes the planned intersection and roadway improvements that were also included under background conditions. Then the procedure used to determine the background traffic volumes is described. Finally, the results of the LOS calculations are presented.

Planned Intersection Improvements

Narvaez Avenue and Hillsdale Avenue. The improvements at this intersection consist of signalizing the intersection and building it out to include lanes for all movements. The planned lane geometry is as follows. Northbound: one right-turn lane and one shared through/left-turn lane. Eastbound: One right-turn lane, one through lane, and one left-turn lane. Southbound: One right-turn lane and one shared through/left-turn lane. Westbound: One right-turn lane, two through lanes, and one left-turn lane. These improvements include adding curb, gutter, and sidewalk on Hillsdale Avenue under SR 87.

Old Almaden Road and Foxworthy Avenue. The improvement at this intersection consists of signalizing the intersection and adding a fourth leg (east approach) with the construction of the Foxworthy Avenue bridge over the Guadalupe River. The planned lane geometry for the east approach is one right-turn lane and one shared through/left-turn lane. The planned lane geometry for the west approach is one shared through/right-turn lane and one shared through/left-turn lane. These improvements were conditioned as part of the Rubino project and are currently under construction by the City of San Jose.

Table 8
Freeway Segment Levels of Service - Existing Conditions

Freeway	Segment	Direction	Peak Hour	Ave. Speed/a/	# of Lanes	Volume/a/	Density	LOS
SR 87	SR 85 to Capitol Expwy	NB	AM	65	2	2,130	16.4	C
			PM	60	2	3,630	30.3	D
SR 87	Capitol Expwy to Curtner Avenue	NB	AM	60	2	3,260	27.2	D
			PM	60	2	2,940	24.5	D
SR 87	Curtner Avenue to Almaden Expwy	NB	AM	25	2	3,390	67.8	F
			PM	60	2	2,710	22.6	C
SR 87	Almaden Expwy to Alma Av	NB	AM	25	2	3,150	63.0	F
			PM	50	2	4,350	43.5	D
SR 87	Alma Av to I-280	NB	AM	60	2	4,130	34.4	D
			PM	60	2	3,470	28.9	D
SR 87	I-280 to Alma Avenue	SB	AM	65	2	2,460	18.9	C
			PM	10	2	2,470	123.5	F
SR 87	Alma Avenue to Almaden Expwy	SB	AM	65	2	2,170	16.7	C
			PM	60	2	4,000	33.3	D
SR 87	Almaden Expwy to Curtner Avenue	SB	AM	65	2	890	6.8	A
			PM	60	2	2,550	21.3	C
SR 87	Curtner Avenue to Capitol Exwpy	SB	AM	65	2	1,700	13.1	B
			PM	60	2	3,180	26.5	D
SR 87	Capitol Expwy to SR 85	SB	AM	65	2	780	6.0	A
			PM	60	2	2,190	18.3	C

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 1998.

Almaden Expressway and Foxworthy Avenue. The improvements at this intersection consist of modifying the east approach to include one left-turn lane and one right-turn lane and removing the westbound through lane. Furthermore, a second eastbound departing lane will be added to the east approach. These improvements will involve modifications to the existing raised right-turn islands on the east leg of the intersection. Foxworthy Avenue, east of Almaden Expressway, will have one westbound and two eastbound travel lanes. The north and south legs of the intersections will also be modified. A second southbound left-turn lane will be added and the existing southbound exclusive right-turn lane will be converted to a shared through/right-turn lane. The rightmost northbound travel lane and the northbound exclusive right-turn lane will be converted into a single shared through/right-turn lane.

Planned Roadway Improvements

Foxworthy Avenue Bridge. A bridge over Guadalupe River will connect the portion of Foxworthy Avenue west of the river to the section on the east side of the river. With this roadway network change, the travel patterns in the area will change slightly. For this reason, background traffic was reassigned as discussed below. This improvement is currently under construction.

Hillsdale Avenue. When the Foxworthy Avenue bridge is constructed, Hillsdale Avenue will be widened to four lanes, as specified in the City of San Jose General Plan, from the SR 87 overcrossing to Canoas Creek. This improvement is currently under construction.

Background Traffic Volumes

Background peak-hour traffic volumes were calculated by adding to existing volumes the estimated traffic from approved but not yet constructed developments. The added traffic from approved but not yet constructed developments were provided by the City in the form of the Approved Trips Inventory (ATI).

Foxworthy Avenue Bridge Reassignment

With the construction of the Foxworthy Avenue bridge over Guadalupe River, traffic patterns in the area will change slightly. The primary change will result from a new link to Almaden Expressway from the developed areas on Hillsdale Avenue east of SR 87. The Foxworthy Avenue extension (from Guadalupe River to Pearl Avenue) was built with the Rubino residential development. Also part of the Rubino development was the removal of Hillsdale Avenue between Old Almaden Road and Pearl Avenue. This section of Hillsdale Avenue was used, in the past, as the primary connecting link between Almaden Expressway and the developed areas on Hillsdale Avenue east of SR 87. With the Foxworthy Avenue bridge in place, the link will be reestablished.

The reassignment is based on traffic patterns that existed when Hillsdale Avenue was still connected to Old Almaden Road. The primary intersection affected by the reassignment is Pearl Avenue/Foxworthy Avenue and Hillsdale Avenue. The volume shown for this intersection under background conditions is based on a December 1996 count (when Hillsdale was still connected to Old Almaden) with the addition of approved trips, including all Rubino traffic. Also affected by the reassignment is the southbound right-turn at Pearl Avenue and Capitol Expressway. This volume was reduced because traffic from Hillsdale

Avenue will no longer have to use Capitol Expressway to access Almaden Expressway when the Foxworthy Bridge is in place.

Background Intersection Levels of Service

City of San Jose Intersection Analysis

The results of the intersection LOS analysis under background conditions are summarized in Table 9. The results show that the same four intersections that operate at LOS E or F under existing conditions would also operate at LOS E or F under background conditions:

- Almaden Expressway and Branham Lane;
- Almaden Expressway and Blossom Hill Road;
- Almaden Expressway and SR 85 (S)/Almaden Plaza Way; and
- SR 87 southbound ramps and Capitol Expressway.

CMP Intersection Analysis

The LOS results for the CMP intersections under background conditions are also summarized in Table 9. The results show that the same three CMP intersections that operate at LOS F under existing conditions would also operate at LOS F under background conditions:

- Almaden Expressway and Branham Lane;
- Almaden Expressway and Blossom Hill Road; and
- Almaden Expressway and SR 85 (S)/Almaden Plaza Way.

Background Freeway Segment Levels of Service

An analysis of freeway segment level of service is not required for background conditions, per the City of San Jose and CMP requirements.

2. Transportation and Circulation Impacts

For the purposes of this project, a traffic impact is considered significant if the project would:

- cause the level of service at a City of San Jose intersection to degrade from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under project conditions, or
- cause both the critical-movement delay at a City of San Jose intersection to increase by four or more seconds and the demand-to-capacity ratio (V/C) to increase by .01 or more at an intersection already operating at an unacceptable LOS E or F under background conditions.
- cause the level of service of a CMP regional intersection to degrade from an acceptable LOS E or better under background conditions to an unacceptable LOS F under project conditions, or
- cause critical movement delay at such a CMP intersection that is already operating at LOS F to increase by four or more seconds; or
- cause a freeway segment to operate at LOS F, or contribute traffic in excess of 1% of segment capacity to a freeway segment already operating at LOS F; or

Table 9

Background Intersection Levels of Service

Intersection	Peak Hour	Count Date	Existing Avg. Delay	Existing LOS	Background Avg. Delay	Background LOS
Capitol Expwy and Monterey Rd (N)*	AM	3/22/00	9.3	B	13.7	B
	PM	3/22/00	10.3	B	11.9	B
Capitol Expwy and Monterey Rd (S)*	AM	3/22/00	25.8	D	29.2	D
	PM	3/22/00	8.7	B	9.2	B
Pearl Ave and Capitol Expwy*	AM	5/10/00	46.4	E	34.2	D
	PM	5/11/00	25.8	D	25.5	D
SR 85 SB off-ramp and Almaden Plaza	AM	5/25/00	4.6	A	4.6	A
	PM	5/25/00	8.5	B	8.7	B
Narvaez Ave and SR 87 NB ramps	AM	5/31/00	9.5	B	11.8	B
	PM	5/31/00	9.4	B	9.7	B
Pearl Ave and Hillsdale Ave	AM	6/1/00	18.6	C	18.4	C
	PM	6/1/00	14.5	B	17.5	C
Almaden Expwy and Foxworthy Ave/a/	AM	5/23/00	15.2	C	25.3	D
	PM	5/23/00	16.9	C	21.1	C
Almaden Expwy and Branham Ln*	AM	6/14/00	75.3	F	76.9	F
	PM	3/14/00	42.7	E	43.9	E
Almaden Expwy and Blossom Hill Rd*	AM	6/15/00	42.6	E	43.7	E
	PM	3/15/00	122.6	F	145.5	F
Almaden Expwy and Cherry Ave	AM	5/24/00	18.6	C	19.0	C
	PM	5/24/00	24.5	C	33.0	D
Almaden Expwy and SR 85 (N)*	AM	6/15/00	5.4	B	5.7	B
	PM	10/1/98	18.2	C	20.4	C
Almaden Exwpy and SR 85 (S)*	AM	6/14/00	14.2	C	14.9	B
	PM	10/1/98	167.5	F	173.1	F
Copperfield Dr and Capitol Expwy	AM	5/18/00	7.0	B	7.7	B
	PM	5/18/00	9.5	B	10.0	B
Narvaez Ave and Capitol Expwy	AM	6/9/00	25.2	D	25.5	D
	PM	3/8/00	28.0	D	28.3	D
Vista Park Dr and Capitol Expwy	AM	5/23/00	16.7	C	17.5	C
	PM	5/23/00	18.0	C	20.2	C
SR 87 SB ramps and Capitol Expwy*/b/	AM	5/11/00	22.4	C	23.4	C
	PM	3/21/00	35.5	D	47.8	E
Snell Ave and Capitol Expwy*	AM	6/8/00	32.5	D	33.9	D
	PM	3/21/00	27.1	D	25.7	D
Hillsdale Avenue and Narvez Avenue/a/	AM	8/26/99	–	–	21.2	C
	PM	8/26/99	–	–	21.5	C
Old Almaden Rd and Foxworthy Avenue/a/	AM	12/18/96	–	–	16.2	C
	PM	12/18/96	–	–	10.8	B

/a/ Background and project conditions include planned improvements.
/b/ The PM TRAFFIX coding was adjusted to get TRAFFIX to calculate an accurate level of service and intersection delay value.
* Denotes CMP intersection

- impede the development or function of planned pedestrian or bicycle facilities; or
- substantially impede the operation of a transit system as a result of congestion; or
- create an operational safety hazard.

Proposed Roadway Network under Project Conditions

With the exception of project-sponsored roadway and intersection improvements, it is assumed that the future near-term roadway network under project conditions would be the same as described previously under background conditions. The project-sponsored improvements are described below.

Vista Park Drive and Hillsdale Avenue. The north leg of this intersection will be constructed to serve as an entrance point to the project site.

Project Entrance on Narvaez Avenue. A second project entrance will be constructed at Narvaez Avenue just south of the Helzer Ranch residential development.

Connection to the Lancaster Gate Neighborhood. Two connections will be made to the Lancaster Gate neighborhood from the project area west of Vista Park Drive fronting Hillsdale Avenue. This will allow for an alternate access point to the group of units at the base of the hill west of Vista Park Drive. These units also will have access to the main entrance off Vista Park Drive and via a right-turn only driveway to Hillsdale Avenue.

Project Traffic Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: 1) trip generation, 2) trip distribution, and 3) trip assignment. First, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. In the second step, the directions the trips use to approach and depart the site is estimated. The trips are then assigned to specific street segments and intersection turning movements.

Trip Generation

The amount of traffic generated by a residential development is estimated by applying the appropriate trip generation rates to the size of the development. The standard rate used by the City of San Jose for residential development is 7.5 daily trips per unit, with 10 percent of the trips occurring during the AM peak hour and 10 percent occurring during the PM peak hour.

By applying these rates to the proposed project, the project is estimated to generate approximately 5,738 daily trips, with 574 trips occurring during the AM peak hour and 574 occurring during the PM peak hour. Using the specified inbound/outbound splits, the project would produce 201 inbound trips and 373 outbound trips during the AM peak hour and 373 inbound and 201 outbound trips during the PM peak hour. The project trip generation estimates are presented in Table 10.

Table 10
Project Trip Generation Estimates

Land Use	Size	Daily Trips	AM Peak-Hour In	AM Peak-Hour Out	AM Peak-Hour Total	PM Peak-Hour In	PM Peak-Hour Out	PM Peak-Hour Total
Single-Family Attached	765 units	5,738	201	373	574	373	201	574

Source: City of San Jose Interim Guidelines for Traffic Impact Analysis for Land Developments, "Common Vehicular Trip Generation Rates for the San Jose Area," March 1994.

Trip Distribution

The trip distribution pattern for the proposed project was estimated based on existing travel patterns and the locations of complementary land uses. The trip distribution pattern is shown graphically on Figure 14.

Trip Assignment

The peak-hour trips generated by the proposed development were assigned to the roadway system in accordance with the trip distribution pattern discussed above.

Project Traffic Volumes

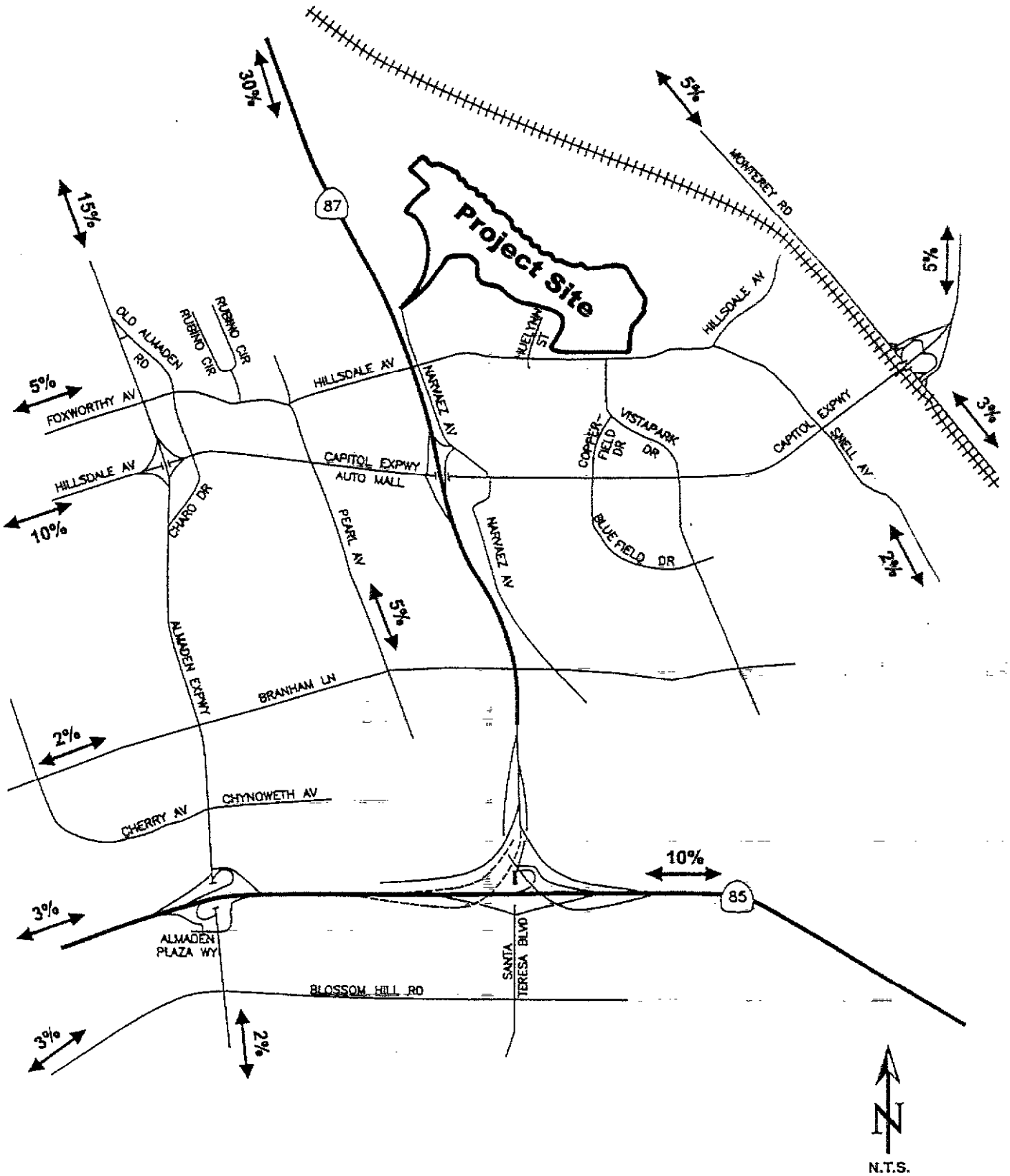
The peak-hour trip assignments for the proposed development were added to the background traffic volumes to determine the volumes for project conditions. Background traffic volumes plus project trips are typically referred to simply as *project traffic volumes*; this is contrasted with the term *project trips*, which is used to signify the traffic that is produced specifically by the project. Detailed volumes are provided in Appendix E. Project conditions, like background conditions, include the intersection and roadway improvements described previously.

Project Intersection Levels of Service

Intersection LOS calculations were conducted to evaluate the impacts of the proposed residential project. The results of the level of service analysis under project conditions are summarized in Table 11. The results show that of the four signalized intersections projected to operate at LOS E or F under background conditions, the following intersection would be significantly impacted by the project according to the City of San Jose definition of impacts:

- SR 87 southbound ramps and Capitol Expressway

The LOS at this intersection under background conditions is LOS E, and the addition of project traffic would cause the LOS to degrade to LOS F. This intersection also would be impacted according to the CMP definition of significant impacts.



Source: Hexagon Transportation Consultants, Inc.

PROJECT TRIP DISTRIBUTION

FIGURE 14

Table 11
Project Intersection Levels of Service

Intersection	Peak Hour	Peak Hour	Background Avg. Delay	Background LOS	Project Avg. Delay	Project LOS	Project Inc. in Crit. Delay	Project Inc. in Crit. V/C	Mitigated Avg. Delay	Mitigated LOS
Capitol Expwy and Monterey Rd (N)*	AM	3/22/00	13.7	B	14.0	B	0.3	0.007		
	PM	3/22/00	11.9	B	12.2	B	0.0	0.000		
Capitol Expwy and Monterey Rd (S)*	AM	3/22/00	29.2	D	31.0	D	2.4	0.013		
	PM	3/22/00	9.2	B	9.4	B	0.2	0.002		
Pearl Ave and Capitol Expwy*	AM	5/10/00	34.2	D	34.3	D	0.1	0.009		
	PM	5/11/00	25.5	D	25.5	D	0.0	0.010		
SR 85 SB off-ramp and Almaden Plaza	AM	5/25/00	4.6	A	4.6	A	0.0	0.000		
	PM	5/25/00	8.7	B	8.7	B	0.0	0.001		
Narvaez Ave and SR 87 NB ramps	AM	5/31/00	11.8	B	12.5	B	5.1	0.219		
	PM	5/31/00	9.7	B	10.7	B	1.5	0.038		
Pearl Ave and Hillsdale Ave	AM	6/1/00	18.4	C	18.7	C	0.5	0.005		
	PM	6/1/00	17.5	C	17.8	C	0.7	0.045		
Almaden Expwy and Foxworthy Ave/a/	AM	5/23/00	25.3	D	29.6	D	5.7	0.041		
	PM	5/23/00	21.1	C	22.6	C	1.0	0.011		
Almaden Expwy and Branham Ln*	AM	6/14/00	76.9	F	77.7	F	1.8	0.003		
	PM	3/14/00	43.9	E	43.9	E	0.0	0.002		
Almaden Expwy and Blossom Hill Rd*	AM	6/15/00	43.7	E	43.8	E	0.4	0.003		
	PM	3/15/00	145.5	F	146.4	F	-0.3	0.002		
Almaden Expwy and Cherry Ave	AM	5/24/00	19.0	C	19.0	C	0.1	0.002		
	PM	5/24/00	33.0	D	33.1	D	0.1	0.002		
Almaden Expwy and SR 85 (N)*	AM	6/15/00	5.7	B	5.7	B	0.0	0.002		
	PM	10/1/98	20.4	C	20.4	C	0.1	0.007		
Almaden Exwpy and SR 85 (S)*	AM	6/14/00	14.9	B	14.8	B	-0.1	0.003		
	PM	10/1/98	173.1	F	172.5	F	-0.5	0.001		
Copperfield Dr and Capitol Expwy	AM	5/18/00	7.7	B	7.7	B	0.0	0.000		
	PM	5/18/00	10.0	B	10.0	B	0.0	0.001		
Narvaez Ave and Capitol Expwy	AM	6/9/00	25.5	D	29.9	D	5.2	0.088		
	PM	3/8/00	28.3	D	30.0	D	5.2	0.051		
Vista Park Dr and Capitol Expwy	AM	5/23/00	17.5	C	17.6	C	0.0	0.000		
	PM	5/23/00	20.2	C	20.5	C	0.7	0.011		
SR 87 SB ramps and Capitol Expwy*/b/	AM	5/11/00	23.4	C	25.1	D	25.4	0.032	25.3	D
	PM	3/21/00	47.8	E	**71.7**	**F**	**33.5**	**0.052**	46.1	E
Snell Ave and Capitol Expwy*	AM	6/8/00	33.9	D	33.9	D	0.0	0.006		
	PM	3/21/00	25.7	D	25.7	D	0.0	0.006		
Hillsdale Avenue and Narvez Avenue/a/	AM	8/26/99	21.2	C	24.2	C	1.5	0.194		
	PM	8/26/99	21.5	C	24.4	C	2.6	0.176		
Old Almaden Rd and Foxworthy Avenue/a/	AM	12/18/96	16.2	C	16.8	C	0.0	0.000		
	PM	12/18/96	10.8	B	9.9	B	-0.8	0.030		

/a/ Background and project conditions include planned improvements.
/b/ The PM TRAFFIX coding was adjusted to get TRAFFIX to calculate an accurate level of service and intersection delay value.
Bold denotes significant impact
* Denotes CMP intersection

- **The project would result in a significant level of service impact according to the City of San Jose and CMP thresholds at the intersection of the SR 87 southbound ramps and Capitol Expressway. (Significant Impact)**

Project Freeway Segment Analysis

Project traffic volumes on freeway segments were calculated by adding the estimated project trips on freeway segments to existing freeway volumes. The results of this analysis are summarized in Table 12. The results show that of the three directional freeway segments projected to operate at LOS F under background conditions, all would be significantly impacted by the project according to the CMP definition of freeway impacts:

- SR 87 northbound, Curtner Avenue to Almaden Expressway (AM peak hour);
- SR 87 northbound, Almaden Expressway to Alma Avenue (AM peak hour); and
- SR 87 southbound, I-280 to Alma Avenue (PM peak hour).

The ramp meter on the northbound SR 87 on-ramp from Narvaez Avenue causes excessive queues to back up onto Narvaez Avenue that extend as far back as Capitol Expressway. This in mainly due to insufficient capacity on the freeway to accommodate existing traffic demand. The project will add traffic to this ramp during the AM peak hour, which will likely increase the length of the queue on Narvaez Avenue. However, all of the project traffic will be coming from the north, whereas, the existing queue extends to the south. Furthermore, motorists will only tolerate a certain level of delay, at which point, they will find alternate routes to the freeway or travel at different times. This means that the queue length on Narvaez will not extend much farther than it already does under existing conditions.

There is a Measure A/B project planned for SR 87 that will add HOV lanes in each direction, upgrading the freeway to a six-lane facility (2 mixed flow lanes and 1 HOV lane in each direction). While the addition of HOV lanes on SR 87 will help alleviate traffic congestion on SR 87, including increased congestion resulting from the project, it is unlikely that this freeway upgrade will be completed before the project is completed. In addition, because the addition of HOV lanes on SR 87 is a regional transportation project, the City of San Jose cannot ensure that these freeway improvements will be implemented. For these reasons, this is considered a significant unavoidable impact.

- **The project would add greater than one percent of the capacity to three freeway segments operating at LOS F, and therefore, would result in significant LOS impacts on these three freeway segments. (Significant Impact)**

Operational Safety Impacts

The site plan shows two access roads leading to the project site, one from Narvaez Avenue and the other from Hillsdale Avenue. The Narvaez Avenue access road has a right-of-way (ROW) of approximately 45 feet and leads through the southern portion of the Helzer residential development fronting a row of houses. This access road is narrow and has a steep grade (approximately 15 percent at the steepest point) and should be designated as a secondary entrance to the project.

Table 12
Freeway Segment Levels of Service - Project Conditions

				Existing + Project Trips					Project Trips	
Freeway	Segment	Direction	Peak Hour	Ave. Speed/a/	# of Lanes	Volume/a/	Density	LOS	Volume	% Capacity
SR 87	SR 85 to Capitol Expwy	NB	AM	65	2	2,155	16.6	C	25	0.5%
			PM	60	2	3,677	30.6	D	47	1.0%
SR 87	Capitol Expwy to Curtner Avenue	NB	AM	60	2	3,373	28.1	D	113	2.5%
			PM	60	2	3,000	25.0	D	60	1.3%
SR 87	Curtner Avenue to Almaden Expwy	NB	AM	25	2	3,503	70.1	**F**	**113**	**2.5%**
			PM	60	2	2,770	23.1	C	60	1.3%
SR 87	Almaden Expwy to Alma Av	NB	AM	25	2	3,263	65.3	**F**	**113**	**2.5%**
			PM	50	2	4,410	44.1	D	60	1.3%
SR 87	Alma Av to I-280	NB	AM	60	2	4,243	35.4	D	113	2.5%
			PM	60	2	3,530	29.4	D	60	1.3%
SR 87	I-280 to Alma Avenue	SB	AM	65	2	2,520	19.4	C	60	1.4%
			PM	10	2	2,583	129.2	**F**	**113**	**2.6%**
SR 87	Alma Avenue to Almaden Expwy	SB	AM	65	2	2,230	17.2	C	60	1.4%
			PM	60	2	4,113	34.3	D	113	2.6%
SR 87	Almaden Expwy to Curtner Avenue	SB	AM	65	2	950	7.3	A	60	1.4%
			PM	60	2	2,663	22.2	C	113	2.6%
SR 87	Curtner Avenue to Capitol Exwpy	SB	AM	65	2	1,760	13.5	B	60	1.4%
			PM	60	2	3,293	27.4	D	113	2.5%
SR 87	Capitol Expwy to SR 85	SB	AM	65	2	827	6.4	A	47	1.0%
			PM	60	2	2,215	18.5	C	25	0.5%

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 1998.

The main access road has a 90-foot ROW and begins at the intersection of Vistapark Drive and Hillsdale Avenue and leads up the hill making a 90-degree turn where it becomes a narrower road (50-foot ROW) leading to the project. The main (90-foot ROW) access road will eventually continue from where it terminates, at the 90-degree bend, and lead over the hill eventually connecting to Curtner Avenue as Communications Hill builds out. With the extension of the main access road over Communications Hill, the temporary connection to the project road grid will be abandoned as an access road, and the 90-degree bend will become a utilities easement. The main access road has a grade of 12% at the steepest point. The access on Hillsdale Avenue should be designated as the primary access point to the project site. Appropriate measures should be taken to ensure that the Hillsdale Avenue access point serves as the main project entrance.

The layout of the on-site roadways appears to provide adequate circulation within the site. However, several on-site intersections are located adjacent to curves in the street. These locations may pose horizontal sight distance issues, depending on building setbacks and the height of any obstructing objects. Furthermore, because of the hilly terrain upon which the project is located, there may be some vertical sight distance issues as well. Because any future traffic control devices would be selected and located such that sight distance problems do not create any safety concerns, and because these improvements would be coordinated with the City of San Jose, the project is not anticipated to result in significant operational safety impacts.

- **The project would not result in significant operational safety impacts. (Less Than Significant Impact)**

Bicycle and Pedestrian Circulation Impacts

The evaluation of bicycle, transit, and pedestrian facilities showed that demand for such facilities would increase with the construction of the project. The project has been designed in conformance with the Communications Hill Specific Plan to encourage bicycle and pedestrian use. New and unimproved streets in the area would be designed to standard City of San Jose widths in order to safely accommodate bicycle traffic. Bicycle lanes, signs and/or striping would be provided in accordance with City of San Jose standards and in accordance with the specifications of the Communications Hill Specific Plan. Sidewalks would also be built on new and unimproved streets. Planting strips for street trees adjacent to on-street parking would also be standard features.

Hillsdale Avenue currently has several sections where the street is not widened to the planned width and no sidewalks are available. The sections are mainly under the SR 87 overpass and east of SR 87. As part of the Rubino residential development, the section of Hillsdale Avenue from SR 87 to Canoas Creek will be widened to four lanes and sidewalks will be constructed. The remaining section along the project frontage would have sidewalks installed by the project.

- **The project, with the proposed street improvements, would not result in significant impacts upon bicycle and pedestrian circulation. (Less Than Significant Impact)**

Transit Service Impacts

There are currently two bus routes that operate in the project area. However, due to the projects unique location, hilly terrain would have to be negotiated by any persons wishing to walk from the project site to the nearest bus stop. Therefore, the project would create demand for local bus service that would not be met by existing service. A transit route throught the Specific Plan area was identified in the Communications Hill Specific Plan. The project would be designed to allow for the development of the transit routes identified in the Communications Hill Specific Plan.

- **The project would contribute demand for local bus service that would not be met by existing service. However, the proposed project would not interfere with existing transit service and has been designed to accommodate the transit routes identified in the Communications Hill Specific Plan. (Less Than Significant Impact)**

3. Mitigation Measures for Transportation Impacts

Mitigation Measures Included in the Project

The following measures have been included as part of the project to reduce traffic impacts:

SR 87 southbound ramps and Capitol Expressway

- The eastbound exclusive right-turn lane would be converted to a shared through/right-turn lane, which will extend past Narvaez Avenue. This improvement can be made by restriping for this lane on the eastbound intersection approach, the area beneath SR 87, and through Narvaez Avenue. This measure will also require modifications to the signals and porkchop-shaped concrete islands at the Capitol Expressway and Narvaez Avenue intersection. With the added capacity of the additional eastbound lane, the minimum green time for that approach can be reduced from 85 second to 78 seconds, and the minimum green time for the westbound approach can be reduced to 92 seconds. These improvements would restore the LOS at this intersection to LOS E.

***Conclusion:* With implementation of the above mitigation, the significant impacts on the SR 87 soutbound ramps and Capitol Expressway would be reduced to a less than significant level. (Less Than Significant Impact with Mitigation)**

Mitigation Measures Not Included in the Project

Freeway Segments

As described in the Impacts discussion above, three freeway segments would be significantly impacted by the project. These significant impacts would be mitigated when measures are implemented, such as the construction of additional lanes on SR 87, that would restore freeway conditions to LOS E or better.

- The project could widen the freeway segments of SR 87 by adding lanes to provide additional capacity in the vicinity of the impacted freeway segments.

However, due to the extensive cost of such widening and the regional nature of freeway planning, this mitigation could not reasonably be implemented by a single development, and therefore, is considered infeasible. There is a Measure A/B project planned for SR 87 that

will add HOV lanes in each direction, upgrading the freeway to a six-lane facility (2 mixed flow lanes and 1 HOV lane in each direction). While the addition of HOV lanes on SR 87 will help alleviate traffic congestion on SR 87, including increased congestion resulting from the project, it is unlikely that this freeway upgrade will be completed before the project is completed. In addition, because the addition of HOV lanes on SR 87 is a regional transportation project, the City of San Jose cannot ensure that these freeway improvements will be implemented. For these reasons, this is considered a significant unavoidable impact.

Conclusion: **The project would result in significant unavoidable impacts on three SR 87 freeway segments. (Significant Unavoidable Impact)**

DRAFT
SUPPLEMENTAL
ENVIRONMENTAL IMPACT REPORT

COMMUNICATIONS HILL

KAUFMAN & BROAD RESIDENTIAL PROJECT

Volume I of II
SEIR Text

Prepared by the
City of San Jose

November 2000

TABLE OF CONTENTS

PAGE

PREFACE i

SUMMARY vii

I. DESCRIPTION OF THE PROJECT 1

A. BACKGROUND AND OVERVIEW OF THE PROJECT 1
B. PROJECT LOCATION 1
C. DESCRIPTION OF THE PROJECT 5
D. PROJECT OBJECTIVES 11
E. USES OF THE EIR 11
F. CONSISTENCY WITH ADOPTED PLANS AND POLICIES 12
1. Regional Plans and Policies 12
2. Local Plans and Policies 13

II. ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES 17

A. LAND USE 17
1. Existing Setting 17
2. Land Use Impacts 18
3. Mitigation Measures 21
B. GEOLOGY AND SOILS 23
1. Existing Setting 23
2. Geology and Soils Impacts 29
3. Mitigation Measures 32
C. DRAINAGE, FLOODING AND WATER QUALITY 36
1. Existing Setting 36
2. Drainage, Flooding and Water Quality Impacts 39
3. Mitigation Measures 42
D. BIOLOGICAL RESOURCES 44
1. Existing Setting 44
2. Biological Resources Impacts 71
3. Mitigation Measures 78
E. ENVIRONMENTAL HAZARDS AND HAZARDOUS MATERIALS 87
1. Existing Setting 87
2. Environmental Hazards and Hazardous Materials Impacts 90
3. Mitigation Measures 92
F. TRANSPORTATION AND CIRCULATION 96
1. Existing Setting 96
2. Transportation and Circulation Impacts 106
3. Mitigation Measures 115
G. AIR QUALITY 117
1. Existing Setting 117
2. Air Quality Impacts 121
3. Mitigation Measures 124

TABLE OF CONTENTS, Continued

H. NOISE 126
1. Existing Setting 126
2. Noise Impacts 129
3. Mitigation Measures 132
I. CULTURAL RESOURCES 135
1. Existing Setting 135
2. Cultural Resources Impacts 137
3. Mitigation Measures 138
J. VISUAL AND AESTHETIC QUALITY 140
1. Existing Setting 140
2. Visual and Aesthetic Impacts 144
3. Mitigation Measures 149
K. ENERGY 151
2. Energy Impacts 151
3. Mitigation Measures 151
L. UTILITIES AND SERVICE SYSTEMS 152
1. Existing Setting 152
2. Utilities and Service Impacts 154
3. Mitigation Measures 158

III. AVAILABILITY OF PUBLIC SERVICES 159

IV. CUMULATIVE IMPACTS 162

V. ALTERNATIVES TO THE PROPOSED PROJECT 171
A. NO PROJECT ALTERNATIVE 171
B. REDUCED DEVELOPMENT ALTERNATIVE 172
C. AVOIDANCE OF SENSITIVE BIOLOGICAL HABITATS ALTERNATIVE 174
D. AVOIDANCE OF DUDLEYA HABITAT ALTERNATIVE 176
E. AVOIDANCE OF DUDLEYA HABITAT WITH MODIFIEDSTREET GRID ALTERNATIVE 179
F. DEVELOPMENT OF BERNS/ROSS PROPERTY ONLY ALTERNATIVE 181
G. ALTERNATIVE SITE LOCATIONS 183
H. ENVIRONMENTALLY SUPERIOR ALTERNATIVE 185

VI. SIGNIFICANT, UNAVOIDABLE IMPACTS 186

VII. GROWTH INDUCING IMPACTS OF THE PROJECT 187

VIII. REFERENCES AND PERSONS CONTACTED 188

IX. AUTHOR AND CONSULTANTS 191

TABLE OF CONTENTS, Continued

FIGURES

Figure 1 Regional Map 2
Figure 2 Vicinity Map 3
Figure 3 Aerial Photograph 4
Figure 4 Property Ownership 6
Figure 5 Conceptual Grading Plan 7
Figure 6 Cross-Section View A 8
Figure 7 Cross-Section View B 9
Figure 8 Active Fault Zones in the San Francisco Bay Area 27
Figure 9 Canoas Creek Drainage Subareas 38
Figure 10 Biotic Habitat Types on the Project Site 45
Figure 11 Locations of Santa Clara Valley Dudleya on the Site 57
Figure 12 Locations of Special-Status Wildlife Observations and Potential Habitat 61
Figure 13 Proposed Dudleya Mitigation Areas 80
Figure 14 Trip Distribution Pattern 110
Figure 15 Noise Measurement Locations 128
Figure 16 Reduced Development Alternative 173
Figure 17 Avoidance of Environmentally Sensitive Habitats Alternative 175
Figure 18 Avoidance of Santa Clara Valley Dudleya Alternative 177
Figure 19 Modified Santa Clara Valley Dudleya Avoidance Alternative 180
Figure 20 Development of Berns/Ross Property Only Alternative 182

TABLES

Table 1 Special-Status Plant Species 51
Table 2 Special-Status Wildlife Species with Potential to Occur in Vicinity of Site 58
Table 3 Special-Status Wildlife Species Known to Occur in Vicinity of Site 60
Table 4 Potential Corps Jurisdictional Wetlands and Waters of the U.S. 70
Table 5 Intersection LOS Definitions Based on Average-Stopped Vehicular Delay 100
Table 6 LOS Definitions for Freeway Segments 101
Table 7 Existing Intersection LOS 102
Table 8 Existing Freeway Segments LOS 104
Table 9 Background Intersection LOS 107
Table 10 Project Trip Generation Estimates 109
Table 11 Project Intersection LOS 111
Table 12 Project Freeway LOS 113
Table 13 Major Criteria Pollutants 118
Table 14 Federal and State Ambient Air Quality Standards 119
Table 15 Summary of Air Quality Data for Downtown San Jose 120
Table 16 Worst Case Carbon Monoxide Concentrations Near Selected Intersections 122
Table 17 Project Regional Emissions in Pounds Per Day 123
166

PHOTOS

Photos 1-4 Views of the Project Site 141
Photos 5-8 Views from the Project Site 145

TABLE OF CONTENTS, Continued

VOLUME II – TECHNICAL APPENDICES

APPENDIX A:	GEOTECHNICAL & GEOLOGIC ASSESSMENT (LOWNEY ASSOCIATES)
APPENDIX B:	HYDROLOGY STUDY (SCHAAF & WHEELER)
APPENDIX C:	BIOLOGICAL INVENTORY REPORT, WETLAND DELINEATION AND DUDLEYA MITIGATION PLAN (OLBERDING ENVIRONMENTAL, INC.)
	BAY CHECKERSPOT BUTTERFLY HISTORICAL REVIEW (LIVE OAK ASSOCIATES, INC.)
APPENDIX D:	PHASE I ENVIRONMENTAL SITE ASSESSMENTS (AQUA SCIENCE ENGINEERS, INC.)
APPENDIX E:	SITE TRAFFIC ANALYSIS (HEXAGON, INC.)
APPENDIX F:	AIR QUALITY ANALYSIS (DON BALLANTI)
APPENDIX G:	NOISE ANALYSIS (ILLINGWORTH & RODKIN)
APPENDIX H:	ARCHAEOLOGICAL EVALUATION REPORT (BASIN RESEARCH ASSOCIATES, INC.)
APPENDIX I:	NOTICE OF PREPARATION OF DRAFT EIR AND RESPONSES TO NOTICE OF PREPARATION

G. AIR QUALITY

The following discussion is based upon an air quality analysis conducted for the project by *Donald Ballanti, Certified Consulting Meteorologist*. This analysis calculated the project's air quality impacts using the assumptions included in the project traffic analysis prepared by *Hexagon Transportation Consultants*. A copy of the air quality analysis is provided in Appendix F of this SEIR.

1. Existing Setting

Air Pollution Climatology

The amount of a given pollutant in the atmosphere is determined by the amount of pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and for photochemical pollutants, sunshine.

Northwest winds and northerly winds are most common in the project area, reflecting the orientation of the Bay and the San Francisco Peninsula. Winds from these directions carry pollutants released by autos and factories from upwind areas of the Peninsula toward San Jose, particularly during the summer months. Winds are lightest on the average in fall and winter. Every year in fall and winter there are periods of several days when winds are very light and local pollutants can build up.

Pollutants can be diluted by mixing in the atmosphere both vertically and horizontally. Vertical mixing and dilution of pollutants is often suppressed by inversion conditions, when a warm layer of air traps cooler air close to the surface. The Bay Area has regular temperature inversions, especially in summer. During the summer, inversions are generally elevated above ground level, but are present over 90 percent of both the morning and afternoon hours. In winter, surface-based inversions dominate in the morning hours, but frequently dissipate by afternoon.

Topography can restrict horizontal dilution and mixing of pollutants by creating a barrier to air movement. The South Bay has significant terrain features that affect air quality. The Santa Cruz Mountains and Hayward Hills on either side of the South Bay restrict horizontal dilution, and this alignment of the terrain also channels winds from the north to south, carrying air pollution from the northern Peninsula toward Santa Clara County.

The combined effects of moderate ventilation, frequent inversions that restrict vertical dilution, and terrain that restricts horizontal dilution give San Jose a relatively high atmospheric potential for air pollution compared to other parts of the San Francisco Bay air basin and provide a high potential for transport of pollutants to the east and south.

Ambient Air Quality Standards

Both the U. S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. Table 13 identifies the major criteria pollutants, characteristics, health effects and typical sources.

Table 13
Major Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive photochemical pollutant created by the action of sunshine on ozone precursors (primarily reactive hydrocarbons and oxides of nitrogen. Often called photochemical smog.	Eye Irritation Respiratory function impairment.	The major sources of ozone precursors are combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels.	Impairment of oxygen transport in the bloodstream. Aggravation of cardiovascular disease. Fatigue, headache, confusion, dizziness. Can be fatal in the case of very high concentrations.	Automobile exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide	Reddish-brown gas that discolors the air, formed during combustion.	Increased risk of acute and chronic respiratory disease.	Automobile and diesel truck exhaust, industrial processes, fossil-fueled power plants.
Sulfur Dioxide	Sulfur dioxide is a colorless gas with a pungent, irritating odor.	Aggravation of chronic obstruction lung disease. Increased risk of acute and chronic respiratory disease.	Diesel vehicle exhaust, oil-powered power plants, industrial processes.
Particulate Matter	Solid and liquid particles of dust, soot, aerosols and other matter which are small enough to remain suspended in the air for a long period of time.	Aggravation of chronic disease and heart/lung disease symptoms.	Combustion, automobiles, field burning, factories and unpaved roads. Also a result of photochemical processes.

The federal and California state ambient air quality standards are summarized in Table 14 for important pollutants. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and PM_{10}.

Table 14
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour 8-Hour	0.12 ppm 0.08 ppm	0.09 ppm --
Carbon Monoxide	8-Hour 1-Hour	9 ppm 35 ppm	9.0 ppm 20.0 ppm
Nitrogen Dioxide	Annual Average 1-Hour	0.05 ppm --	-- 0.25 ppm
Sulfur Dioxide	Annual Average 24-Hour 1-Hour	0.03 ppm 0.14 ppm --	-- 0.05 ppm 0.25 ppm
PM_{10}	Annual Average 24-Hour	50 $\mu g/m^3$ 150 $\mu g/m^3$	30 $\mu g/m^3$ 50 $\mu g/m^3$
$PM_{2.5}$	Annual 24-Hour	15 $\mu g/m^3$ 65 $\mu g/m^3$	-- --

ppm = parts per million
$\mu g/m^3$ = Micrograms per cubic meter

The U.S. Environmental Protection Agency in 1997 adopted new national air quality standards for ground-level ozone and for fine particulate matter, $PM_{2.5}$ (diameter of 2.5 microns or less). The existing 1-hour ozone standard of 0.12 ppm will be phased out and replaced by an 8-hour standard of 0.08 ppm. New national standards for fine particulate matter have also been established for 24-hour and annual averaging periods. The current PM10 standards were retained, but the method and form for determining compliance with the standards were revised.

Implementation of the new ozone and Particulate Matter standards was further complicated by a recent lawsuit. On May 14, 1999 the Court of Appeals for the District of Columbia Circuit issued a decision which ruled that applying the Clean Air Act in setting the new public health standards for ozone and particulate matter was unconstitutional, because it was an improper delegation of legislative authority to the Environmental Protection Agency (EPA). The decision has been appealed, but the legal status of the new standards will probably remain uncertain for some time.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants are another group of pollutants of concern. Toxic Air Contaminants (TACs) are injurious in small

quantities and are regulated despite the absence of criteria documents. The identification, regulation, and monitoring of TACs is relatively recent compared to that for criteria pollutants.

Ambient Air Quality

The Bay Area Air Quality Management District (BAAQMD) is the local agency authorized to regulate stationary air quality sources in the Bay Area. The BAAQMD develops and enforces air quality regulations for non-vehicular sources, issues permits, participates in air quality planning, and operates a regional air quality monitoring network. The nearest monitoring facility to the site is located in downtown San Jose. Table 15 summarizes exceedances of state and federal standards at the downtown San Jose monitoring site during the period 1996-1998. Table 15 shows that ozone and PM_{10} exceed the federal and state standards in the project area. Violations of the carbon monoxide standards were recorded at the downtown San Jose site prior to 1992.

Of the three pollutants known to at times exceed the state and federal standards in the project area, two are regional pollutants. Both ozone and PM_{10} are considered regional pollutants in that concentrations are not determined by proximity to individual sources, but show a relative uniformity over a region. Thus, the data shown in Table 15 for ozone and PM_{10} provide a good characterization of levels of these pollutants on the project site.

Table 15
Summary of Air Quality Data For Downtown San Jose[14]

Pollutant	Standard	Number of Days Exceeding Standard		
		1996	1997	1998
Ozone	Federal 1-Hour	0	0	1
Ozone	State 1-Hour	5	0	4
Carbon Monoxide	Federal/State 1-Hour	0	0	0
PM_{10}	Federal 24-Hour	0	0	0
PM_{10}	State 24-Hour	2	3	3

Carbon monoxide is a local pollutant, i.e., high concentrations are normally only found very near sources. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes.

[14] California Air Resources Board, California Air Quality Data, Annual Summaries, 1997-1998; Bay Area Air Quality Management District, Air Currents, July/August, 1999.

Attainment Status and Regional Air Quality Plans

The federal Clean Air Act and the California Clean Air Act of 1988 require that the state Air Resources Board (ARB), based on air quality monitoring data, designate portions of the state where the federal or state ambient air quality standards are not met as "nonattainment areas". Because of the differences between the national and state standards, the designation of nonattainment areas is different under the federal and state legislation.

The Bay Area had, until recently, attained all federal standards. In June of 1998 the U.S. Environmental Protection Agency (EPA) reclassified the Bay Area from "maintenance area" to nonattainment for ozone based on violations of the federal standards at several locations in the air basin. This reversed the air basin's reclassification to maintenance area for ozone in 1995. Reclassification requires an update to the region's federal air quality plan.

Recent revisions to the national ambient standards for ozone and particulate matter have no immediate effect on federal nonattainment planning. Existing ozone and particulate matter designations will remain in effect until the EPA establishes new designations based on data from 1997, 1998 and 1999. No new controls will be required with respect to the new standards until after the year 2002.

Under the California Clean Air Act, Santa Clara County is a nonattainment area for ozone and PM_{10}. The County's status is designated as either "attainment" or "unclassified" for other pollutants. The California Clean Air Act requires local air pollution control districts to prepare air quality attainment plans. These plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods or provide for adoption of "all feasible measures on an expeditious schedule".

Sensitive Receptors

The Bay Area Air Quality Management District (BAAQMD) defines sensitive receptors as facilities where sensitive population groups (children, the elderly, and the acutely or chronically ill) are likely to be located. These land uses include residences, schools, playgrounds, child care centers, retirement homes, convalescent homes, hospitals and medical clinics. The existing residential areas adjacent to the project site to the south, west and northwest, are the nearest sensitive receptors.

2. Air Quality Impacts

For the purposes of this project, an air quality impact is considered significant if the project would:

- violate an ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations; or
- result in substantial emissions or deterioration of ambient air quality; [The significance thresholds recommended by the BAAQMD are considered to represent "substantial" emissions. These thresholds are 80 pounds per day for all regional air quality pollutants except carbon monoxide. The significance threshold for carbon monoxide is 550 pounds per day, although exceedance of this threshold only triggers the need for estimates of carbon monoxide "hot spot" concentrations. A substantial

contribution to an existing carbon monoxide exceedance would be defined as greater than 0.1 parts per million, based on the accuracy of the monitoring instruments]; or

- frequently expose members of the public to objectionable odors; or
- expose sensitive receptors or the general public to substantial levels of toxic air contaminants; or
- alter air movement, moisture, or temperature, or result in any change in climate either locally or regionally.

Local Air Quality Impacts

On the local scale, the project would increase traffic on the local street network, increasing carbon monoxide levels along roadways used by project traffic. Carbon monoxide is an odorless, colorless poisonous gas whose primary source in the Bay Area is automobiles. Concentrations of this gas are highest near intersections of major roads.

The CALINE-4 computer simulation model was applied to six (6) intersections near the project site. The model results were used to predict the maximum 1-hour and 8-hour concentrations, corresponding to the 1-hour and 8-hour averaging times specified in the state and federal ambient air quality standards for carbon monoxide. The CALINE-4 model and the assumptions made in its use for this project are described in Appendix F of this SEIR.

Table 16 shows the results of the CALINE-4 analysis for the peak 1-hour and 8-hour traffic periods in parts per million (ppm). The 1-hour values are to be compared to the federal 1-hour standard of 35 ppm and the state standard of 20 ppm. The 8-hour values in Table 16 are to be compared to the state and federal standard of 9 ppm.

Table 16

Worst Case Carbon Monoxide Concentrations Near Selected Intersections (ppm)

Intersection	Existing (2000)		Existing + Approved (2000)		Existing + Approved + Project (2000)	
	1-Hr	8-Hr	1-Hr	8-Hr	1-Hr	8-Hr
Capitol Expressway/ Snell Avenue	8.3	5.8	8.9	6.2	8.9	6.3
Capitol Expressway/ SR 87 Ramps	11.0	7.7	11.6	8.1	11.8	8.3
Foxworthy Avenue/ Almaden Expressway	10.2	7.1	10.3	7.2	10.3	7.2
Capitol Expressway/ Narvaez Avenue	9.3	6.5	10.5	7.3	11.4	8.0
SR 87 NB Ramps/ Narvaez Avenue	7.9	5.5	7.9	5.6	9.2	6.5
Capitol Expressway/ Pearl Avenue	9.5	6.7	9.5	6.7	10.1	7.1
Most Stringent Standard	20.0	9.0	20.0	9.0	20.0	9.0

Table 16 shows that existing concentrations near the intersections meet the 1-hour and 8-hour standards. Traffic from approved projects and the proposed project would increase concentrations by up to 1.3 ppm. Since project traffic would not cause any new violations of the 8-hour standards for carbon monoxide, nor contribute substantially to an existing or projected violation, project impacts on local carbon monoxide concentrations are considered to be less than significant.

- **The project would result in less than significant local air quality impacts. (Less Than Significant Impact)**

Regional Air Quality Impacts

Vehicle trips generated by the project would result in air pollutant emissions affecting the entire San Francisco Bay air basin. Regional emissions associated with project vehicle use have been calculated using the URBEMIS7G emission computer model, as described in Appendix F of this SEIR.

The increased daily emissions associated with the project are identified in Table 17 for reactive organic gases and oxides of nitrogen (two precursors of ozone) as well as PM_{10}.

BAAQMD Guidelines for the evaluation of project impacts consider emission increases to be significant if they exceed 80 pounds per day for any regional pollutant.[15] Project emissions, as shown in Table 17, would exceed this criterion for two regional pollutants, and therefore, the proposed project would have a significant impact on regional air quality.

While the project would generate emissions of regional air pollutants, the project does not propose any residences beyond the City of San Jose General Plan assumptions and, therefore, is consistent with the Clean Air Plan.

- **Project emissions of regional pollutants would exceed BAAQMD thresholds for two regional pollutants, and therefore, would have a significant impact on regional air quality. (Significant Impact)**

Table 17
Project Regional Emissions in Pounds Per Day

	Reactive Organic Gases	Nitrogen Oxides	PM_{10}
Project Emissions	106.3	163.3	53.0
BAAQMD Significance Threshold	80.0	80.0	80.0

Construction Impacts

Construction activities such as earthmoving, excavation and grading operations, construction vehicle traffic and wind blowing over exposed earth would generate exhaust emissions and

[15] Bay Area Air Quality Management District, BAAQMD CEQA Guidelines, 1996.

fugitive particulate matter emissions that would affect local and regional air quality. Construction activities are also a source of organic gas emissions. Solvents in adhesives, non-waterbase paints, thinners, some insulating materials and caulking materials would evaporate into the atmosphere and would participate in the photochemical reaction that creates urban ozone. Asphalt used in paving is also a source of organic gases for a short time after its application.

Construction dust could affect local air quality during construction of the project. The dry, windy climate of the area during the summer months creates a high potential for dust generation when and if underlying soils are exposed to the atmosphere.

The effects of construction activities would be increased dustfall and locally elevated levels of PM_{10} and $PM_{2.5}$ downwind of construction activity. Construction dust has the potential for creating a nuisance at nearby properties, and may constitute a health impact for children or persons with chronic health problems. The potential also exists for airborne asbestos fibers during construction (Impacts related to airborne asbestos and mitigation measures to reduce the impact to a less than significant level are described in Section II, E, Environmental Hazards and Hazardous Materials, of this SEIR). For these reasons, the short-term construction-related air quality impacts of the project are considered significant.

- **Temporary air quality impacts resulting from construction activities, particularly generation of construction dust, could cause significant short-term adverse impacts to the adjacent sensitive land uses. (Significant Temporary Impact)**

3. Mitigation Measures for Air Quality Impacts

Operational Impacts

Mitigation Measures Included in the Project

The following mitigation measures would be included as part of the project to reduce local carbon monoxide and regional air quality impacts:

- Provide physical improvements, such as sidewalk improvements, landscaping and bicycle parking that would act as incentives for pedestrian and bicycle modes of travel.
- Connect the project site with regional bikeway/pedestrian trail system.
- Provide shuttle bus service to the nearest regional transit station.

Conclusion: **The project's location in hilly terrain limits the potential for non-auto modes of travel. The adoption of the above measures would only have the potential to reduce the regional air quality impacts of the project by 1-5 percent. This reduction would not reduce the project's regional air quality impacts to less than significant levels. (Significant Unavoidable Impact)**

Construction Impacts

A detailed description of mitigation measures included in the project for potential impacts from airborne asbestos is presented in Section II., E., of this SEIR. Implementation of these measures will ensure that airborne asbestos emissions are minimized and potential impacts are reduced to a less than significant level.

The following measures would be implemented as part of the project grading and excavation operations to reduce construction-related air quality impacts.

- Grading permits would include conditions requiring implementation of dust control programs controlling construction equipment vehicle speeds, cleaning, controlled loading procedures, controlled haul routes, watering, dust palliatives and air monitoring.

- The BAAQMD has prepared a list of feasible construction dust control measures that can reduce construction impacts to a level that is less than significant. Except when it is raining, the following construction practices would be implemented during all phases of construction on the project site:

  - Water all active construction areas at least twice daily.
  - Cover stockpiles of debris, soil, sand or other materials that could be blown by the wind.
  - Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
  - Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
  - Damp sweep daily all paved access road, parking areas and staging areas at construction sites.
  - Damp sweep streets daily if visible soil material is carried onto adjacent public streets.
  - Hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
  - Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (debris, dirt, sand, etc.).
  - Limit traffic speeds on unpaved roads to 15 mph.
  - Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
  - Replant vegetation in disturbed areas as quickly as possible.

Conclusion: **Implementation of these mitigation measures would reduce potential short-term air quality impacts from construction activities to a less than significant level. (Less Than Significant Impact with Mitigation)**

H. NOISE

The following discussion is based upon a noise analysis conducted by *Illingworth and Rodkin, Inc.* for the project. This analysis calculated the project's noise impacts using the trip generation and distribution assumptions included in the project traffic analysis completed by *Hexagon Transportation Consultants, Inc.* A copy of the noise report is presented in Appendix G of this EIR.

1. Existing Setting

Overview

Noise is measured in "decibels" (dB) which is a numerical expression of sound levels on a logarithmic scale. A noise level that is 10 dB higher than another noise level has 10 times as much sound energy and is perceived as being twice as loud. Sounds less than five dB are just barely audible, and then only in the absence of other sounds. Intense sounds of 140 dB are so loud that they are painful and can cause damage with only a brief exposure. These extremes are not commonplace in our normal working and living environments. An "A-weighted decibel" (dBA) filters out some of the low and high pitches which are not as audible to the human ear. Thus, noise impact analyses commonly use the dBA.

Since excessive noise levels can adversely affect human activities (such as conversation and sleeping) and human health, federal, state and local governmental agencies have set forth criteria or planning goals to minimize or avoid these effects. The noise guidelines are almost always expressed using one of several noise averaging methods such as Leq, Ldn, or CNEL.[16] Using one of these descriptors is a way for a location's overall noise exposure to be measured, realizing of course that there are specific moments when noise levels are higher (e.g., when a jet is taking off from San Jose International Airport or a leafblower is operating) and specific moments when noise levels are lower (e.g., during lulls in traffic flows or in the middle of the night). For this report, the Ldn will be used as it is consistent with the General Plan guidelines of the City of San Jose.

Applicable Noise Guidelines

Noise impact assessments for projects within the City of San Jose are evaluated under the San Jose General Plan Noise Guidelines (City of San Jose, 1994). The goal of the General Plan Guidelines is to "minimize the impact of noise on people through noise reduction and suppression techniques, and through appropriate land use policies." Using Ldn levels as the standard, the Noise Guidelines identify ranges of noise levels deemed compatible with land uses within the City. The noise guidelines for residential areas and public parks, for example, are more restrictive than for industrial areas.

The General Plan Noise Guidelines are derived from federal and state legislation and recommendations. The City's General Plan identifies the EPA's standard of 55 Ldn for a desirable maximum outdoor noise level as a long-range goal. However, noise studies have shown that a short-range goal of 60 Ldn is more realistic for most of the City, given existing noise levels. The General Plan also acknowledges that for areas along major roadways, the

[16] **Leq** stands for the Noise Equivalent Level and is a measurement of the average energy level intensity of noise over a given period of time such as the noisiest hour. **Ldn** stands for Day-Night Level and is a 24-hour average of noise levels, with 10 dB penalties applied to noise occurring between 10:00 PM and 7:00 AM. **CNEL** stands for Community Noise Equivalent Level; it is similar to the Ldn except that there is an additional 5 dB penalty applied to noise which occurs between 7:00 PM and 10:00 PM. As a general rule of thumb, where traffic noise predominates, the CNEL and Ldn are typically within 2 dBA of the peak-hour Leq.

long-range goal of 55 Ldn and even the short-range goal of 60 Ldn may be unobtainable in the foreseeable future. The General Plan noise guideline of 45 Ldn for indoor noise is patterned after the state standard and applies to interior noise levels when windows are closed. Closed windows typically reduce Ldn by 20 to 25 decibels (dB), assuming standard construction.

General Plan Noise Guidelines address means of reducing noise generation in the future and mitigating noise impacts on residential and other sensitive land uses. The General Plan Noise Guidelines also outline procedures to be followed when new development is proposed in areas of the City where noise levels exceed the "satisfactory" guideline.

An exterior level of 60 dBA Ldn is considered acceptable for commercial land uses (including office), parks and playgrounds, and an exterior limit of 70 dBA Ldn is considered acceptable for industrial uses. Certain public/quasi-public uses, including hospitals, schools, and libraries, are identified as being particularly noise sensitive, warranting interior levels no greater than 45 dBA Ldn. In addition, General Plan guidelines identify residential development as being particularly sensitive to noise and establish 55 dBA Ldn as the standard to be maintained at the property line by adjacent uses.

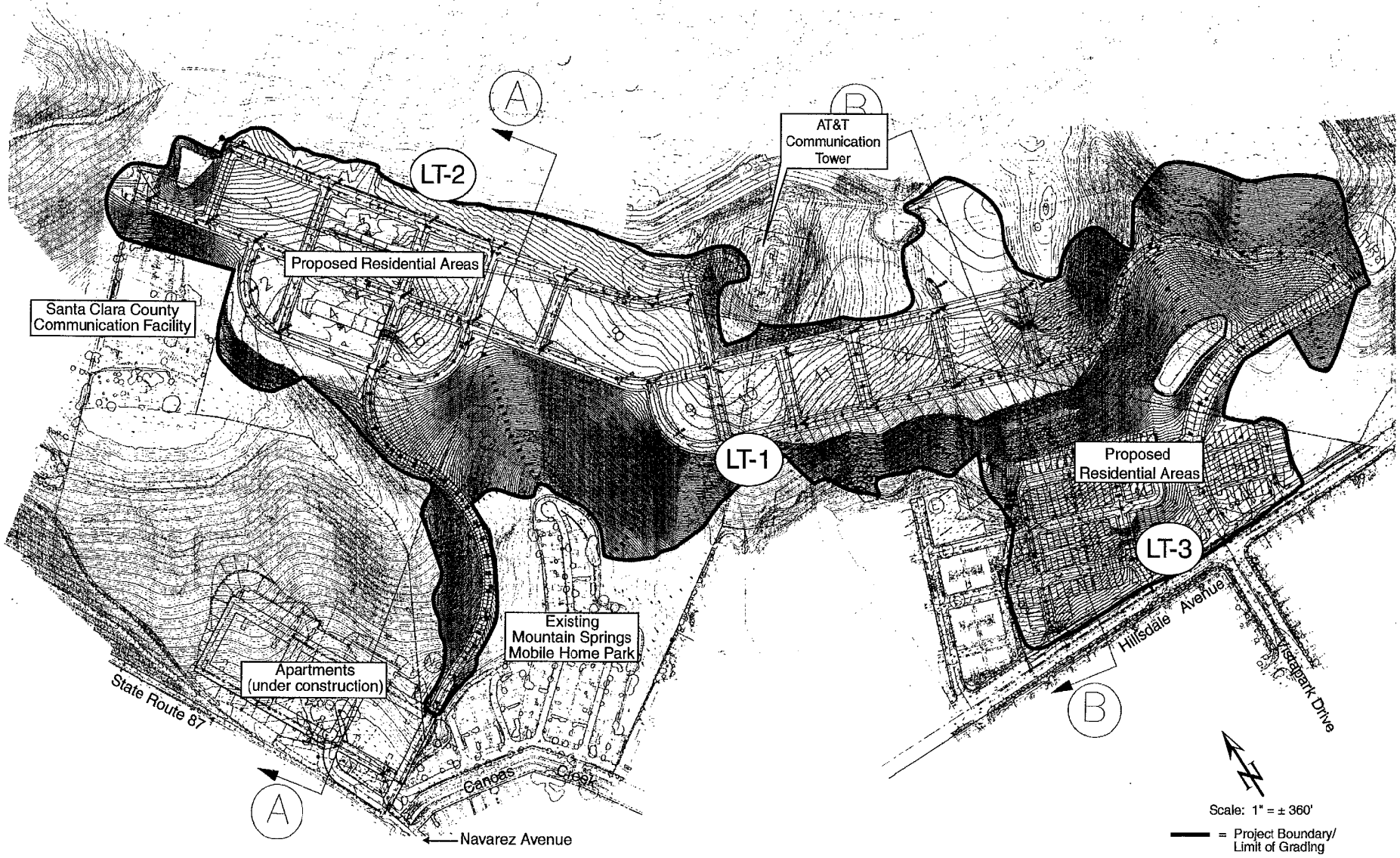
Existing Noise Conditions

The major sources of environmental noise on the project site are aircraft overflights and vehicular traffic. Occasionally, noise generated by Union Pacific Railroad activity, quarry operations, and the Santa Clara County Fairgrounds Speedway affect the noise environment at the project site.

To quantify the existing noise environment, a noise monitoring survey was conducted at representative locations throughout the project site. The monitoring survey consisted of three long-term noise measurements conducted over a 48-hour period from Monday, June 12, 2000 to Wednesday, June 14, 2000. These noise measurement locations are depicted in Figure 15.

The first long-term measurement (LT-1) was taken approximately 500 feet southwest of the AT&T communications tower near the southern extent of the project site to quantify noise levels generated by distant vehicular traffic along SR 87. At this location, the measured Ldn was 58 dBA with noise levels resulting primarily from vehicular traffic and aircraft overflights. Hourly average noise levels (Leq) ranged from 44 dBA to 58 dBA during the measurement period.

Noise levels at measurement location LT-2, located on the ridge of Communications Hill near the AT&T access road, were somewhat higher than noise levels measured at location LT-1 as a result of increased noise levels generated by direct aircraft overflights. Hourly average noise levels typically ranged in the low to mid 50's (dBA) during daytime hours and in the mid 40's (dBA) during nighttime hours. The calculated Ldn at location LT-2, excluding atypical local noise events, is about 60 dBA.



Source: HMH, Incorporated (October, 2000)

NOISE MEASUREMENT LOCATIONS

FIGURE 15

A third noise measurement was conducted at a distance of approximately 85 feet from the centerline of Hillsdale Avenue. This noise measurement was representative of the nearest proposed residential land use along Hillsdale Avenue. Noise levels at this site were predominantly the result of vehicular traffic along Hillsdale Avenue, and the calculated Ldn was 68 dBA. Hourly average noise levels typically ranged from about 54 dBA to 66 dBA. Maximum noise levels (Lmax) typically ranged from the low 70's to the low to mid 80's (dBA).

Noise levels generated by occasional noise sources (i.e., Santa Clara County Fairgrounds Speedway) were not quantified in this noise monitoring survey. Noise measurements of the speedway were conducted in 1991 by *Illingworth & Rodkin, Inc.* for the *Communications Hill Specific Plan Environmental Noise Assessment.* For the purposes of this EIR, noise levels generated by the speedway are about 10 to 20 dBA above ambient noise levels while events occur. At times, noise levels generated by the speedway could reach 55 to 65 dBA.

Noise generated by the Azavedo Quarry concrete/asphalt recycling activities was not audible during two site visits. The quarry is located approximately 800 to 1,000 feet to the east of the project site, and although the quarry was observed to be in operation, noise generated by the facility was not audible above the ambient noise environment on the ridge top of Communications Hill.

2. Noise Impacts

For the purposes of this project, a noise impact is considered significant if the project would:

- result in a substantial change in ambient noise levels; or
- generate noise that would result in a conflict with established plans and policies; or
- expose people to noise levels in excess of established standards.

Impacts to the Project

The noise environment of the project site is primarily the result of transportation-related noise sources. The noise environment of the site is dominated by vehicular traffic on local roadways, including Hillsdale Avenue and State Route 87, and aircraft on the flight-paths of San Jose International Airport. North of the project site, transportation-related noise sources including Union Pacific Railroad activity and the Santa Clara County Fairgrounds Speedway contribute to the overall noise environment. Exterior noise levels generated by these sources currently exceed the City of San Jose's short-range and long-range goals for compatible residential land uses proposed along Hillsdale Avenue and the City's short-range goal on the ridge top of Communications Hill. Future noise conditions on the project site will continue to exceed these goals. Described below are the individual noise sources and their contributions to the overall noise environment of the project site.

Vehicular Traffic Noise Exposure

Local vehicular traffic along Hillsdale Avenue would expose the nearest proposed residential land uses to future Ldn noise levels of about 69 to 70 dBA. This noise level exceeds the City of San Jose's "satisfactory" guideline for noise and residential land use compatibility. Noise levels exceeding 60 Ldn would require that the project be designed to create acoustically

protected common outdoor use areas. Additionally, when the project requires a full EIR, residential land uses exposed to noise levels ranging between 60 Ldn and 70 Ldn must be evaluated by an acoustical specialist to determine the amount of attenuation necessary to maintain an indoor level of a Ldn less than or equal to 45 dBA. Exterior noise levels generated by vehicular traffic at multi-family residential land uses proposed adjacent to Hillsdale Avenue would result in a significant impact.

Noise levels generated by distant vehicular traffic on SR 87 were measured at location LT-1 (refer to Figure 15); the approximate location of residential receptors located in the southwest portion of the project site on the ridge top of Communications Hill. The day-night average noise level calculated from the data measured at this location was 58 dBA. Future traffic projections were not available, so an estimate of future traffic volumes was made in order to predict future Ldn noise levels. Assuming a conservative 20 percent increase in traffic along SR 87 in the future, noise levels at the nearest proposed receptors would increase by about one (1) decibel. Future noise levels at this location are anticipated to remain below 60 Ldn, and therefore, continue to meet the short-range exterior noise level goal of the City of San Jose. The City recognizes that meeting the long-range goal of 55 Ldn in the vicinity of San Jose International Airport, the Downtown Core Area, and along major roadways may not be achieved in the time frame of the General Plan. Exterior noise levels of residences located on the southwest ridge of Communications Hill would be considered satisfactory for the proposed land use, and this would be considered a less than significant impact.

- **The proposed residences adjacent to Hillsdale Avenue would be subject to significant noise levels generated by vehicular traffic on Hillsdale Avenue. The proposed multi-family residences would be subject to exterior noise levels that will require attenuation measures to meet interior noise requirements. (Significant Impact) Exterior noise levels at other residences on the site would meet the short-range exterior noise level goal of the City of San Jose. (Less Than Significant Impact)**

Aircraft Generated Noise Exposure

Noise generated by aircraft associated with San Jose International Airport was quantified at measurement location LT-2 (refer to Figure 15) during the noise monitoring survey. Hourly noise levels at this site, resulting primarily from aircraft, yielded a Ldn of about 59 to 60 dBA. Individual aircraft overflights generate maximum noise levels on-site of about 65 to 80 dBA depending on the type of plane, speed, and flight-path. Future projections of aircraft noise exposure indicate that the site is located just outside of the 60 CNEL (CNEL is similar to, and typically slightly higher than, the Ldn) noise contour.[17] Maximum noise level events generated by aircraft overflights could annoy residents of the planned development in exterior and interior living spaces, particularly in the more sensitive morning, evening, and nighttime hours. However, because exterior noise levels would be within the City's short-term 60 Ldn guideline, this impact is considered less than significant.

- **The project site would not be subject to significant noise impacts resulting from aircraft overflights. (Less Than Significant Impact)**

[17]Illingworth & Rodkin, Inc., Communications Hill Project EIR Noise Section, July 13, 2000.

Railroad Noise Exposure

An active Union Pacific Railroad (UPRR) line is located approximately 1,300 feet northwest of the project site at the bottom of Communications Hill (refer to Figure 3). At-grade crossings, locations where trains would blow their warning whistles, were not observed in the immediate vicinity of the project site.[18] Noise levels generated by typical train passbys at a distance of about 1,300 feet would be about 60 to 70 dBA. Noise generated by train activity did not appear to significantly contribute to the Ldn noise level measured at location LT-2. Railroad noise exposure along this rail line was predicted to be about 60 dBA Ldn at a distance of 600 feet in the *Communications Hill Specific Plan Environmental Noise Assessment*.[19] The Ldn noise level for railroad noise reflects the amount of noise the train passby events contribute to the time-averaged noise level. Accounting for distance, noise levels generated by train passbys at the nearest proposed residential land uses would generate an Ldn of about 53 dBA. Therefore, noise levels generated by train passbys would be a less than significant impact.

- **The project would be subject to less than significant noise impacts from train passbys on the nearby railroad line. (Less Than Significant Impact)**

Fairgrounds Speedway Noise Exposure

The Santa Clara County Fairgrounds Speedway is located north of Monterey Road, approximately one mile from the nearest proposed noise sensitive receptors. Based upon noise measurements gathered for the *Communications Hill Specific Plan Environmental Noise Assessment*, noise levels generated by the speedway are about 55 to 65 dBA while events occur. This noise level would be at or below the noise levels generated by aircraft passing over the project site. The Fairgrounds Speedway only holds a limited amount of races per year, and noise generated by such events would not be above the predominant noise source affecting the site. Therefore, noise from the County Fairgrounds Speedway would be a less than significant impact.

- **The project would not be exposed to significant noise levels from nearby transportation-related noise sources. (Less Than Significant Impact)**

Impacts from the Project

Project-Generated Traffic Noise

The traffic study prepared for this EIR by *Hexagon Transportation Consultants* indicates that local roadways serving the project site will experience increases in traffic on certain roadway segments as a result of the project. The traffic increases at affected roadways will increase noise levels at noise sensitive receptors by approximately zero (0) to two (2) dBA Ldn. An increase in noise levels by 0 to 2 dBA is not typically noticed by most people, and therefore, would not cause a substantial noise increase at nearby noise sensitive receptors.

[18] Train overcrossings do not require trains to blow their whistles, and therefore, the addition of two new train overcrossings in the vicinity, as specified in the Communications Hill Specific Plan, would not affect the noise environment in the project site area (James Reyff, Illingworth & Rodkin, personal communications, October, 2000.
[19] Illingworth & Rodkin, 1991.

- **The project would result in a less than significant increase in noise levels on nearby roadways. (Less Than Significant Impact)**

General Construction Phase Impacts

Construction activities generate noise. The construction of residential units on the project site would temporarily increase noise levels at adjacent receptors. Noise levels during construction would occur in phases, including grading and excavation, construction and paving of roadways, construction of residential foundations, erection of the new buildings, and finishing. Typical hourly average construction noise levels are 75 dBA to 80 dBA measured at a distance of 100 feet from the construction site during busy construction periods. These noise levels drop off at a rate of about 6 dBA per doubling of distance. Noise levels at adjacent residences would intermittently exceed 60 dBA Leq and existing ambient levels during construction. Noise levels produced by heavy-equipment during site grading and excavation may interfere with normal residential activities during busy periods when activity occurs in areas close to existing residential land uses.

- **Construction of the project would result in significant short-term noise impacts upon nearby sensitive land uses. (Significant Temporary Impact)**

3. <u>Mitigation Measures for Noise Impacts</u>

Mitigation Measures Included in the Project

The project proposes the following mitigation measures to reduce or avoid noise impacts associated with its development.

Exterior Noise Levels

- Exterior noise levels for the portion of the project proposed along Hillsdale Avenue would exceed the City's short-range and long-range goals for acceptable noise and land use compatibility. Future noise levels at a distance of about 85 feet would be about 69 to 70 Ldn. These noise levels would require appropriate site planning of common outdoor use areas and/or noise barriers to create acoustically protected areas shielded from traffic noise. Therefore, the outdoor use areas on this portion of the site would be designed and situated to minimize noise from nearby roadways. Barriers would not include enclosing private open areas for individual units.

- Prior to occupying the other residential units on the site, residents should be notified that exterior noise levels generated by aircraft and the speedway exceed recommended levels for the proposed land use.

Conclusion: **Implementation of the above mitigation measures would reduce potentially significant exterior noise impacts to a less than significant level. (Less Than Significant Impact with Mitigation)**

Interior Noise Levels

- Interior noise levels within all residential units must be maintained at or below 45 Ldn, per the requirements of the City of San Jose and the State Building Code. Therefore,

prior to the approval of PD Permits or Permit Amendments to construct the project, a detailed acoustical analysis of interior noise exposure would be prepared. Noise insulation treatments added to buildings to ensure that interior noise levels do not exceed the City's acceptable noise level objective of 45 dBA Ldn for interior spaces would be identified and incorporated into the project at that time. The project applicant would be required to submit this analysis describing the amount of attenuation necessary to maintain interior noise levels at or below 45 Ldn to satisfy the State of California Code requirements.

- The detailed acoustical analysis would also identify and require measures necessary to ensure that single-event noise levels generated by aircraft flyovers do not exceed 50 dBA in bedrooms and 55 dBA in other habitable rooms.

  Interior noise levels are typically 15 decibels lower than exterior noise levels with the windows partially open in standard residential construction. With the windows maintained in the closed position, interior noise levels are about 25 decibels lower than exterior noise levels. Interior spaces of residences exposed to exterior noise levels of 80 dBA, for example, would be about 65 dBA with the windows partially open and 55 dBA with the windows shut. It is likely that sound-rated windows and forced-air mechanical ventilation systems would be required to meet the maximum single-event interior noise level standard for residences located on the ridge top of Communications Hill. Interior noise levels at residential land use along Hillsdale Avenue could be controlled with forced-air mechanical ventilation systems, allowing the occupant the option of controlling noise.

- Appropriate measures identified in the design-level noise analysis would be included in the final development plans for the project.

Conclusion: **Implementation of the above mitigation measures would reduce interior noise levels on the site to a less than significant level. (Less Than Significant Impact with Mitigation)**

Construction Noise Mitigation

- Provide advance written notification of planned construction activities to residents and sensitive land uses within 300 feet of the site.

- Limit construction operations to daytime hours of 7:00 AM to 7:00 PM with no construction activities on Sundays or holidays, to avoid the more sensitive evening and early morning hours.

- Use available noise suppression devices and properly maintain and muffle loud construction equipment. Construction noise would be reduced by using quiet or "new technology" equipment, particularly the quieting of exhaust noises by use of improved mufflers. All internal combustion engines used at the project site would be equipped with the type of muffler recommended by the vehicle manufacturer. In addition, all equipment would be maintained in good mechanical condition so as to minimize noise created by faulty or poorly maintained engine, drive-train and other components.

- Avoid staging of construction equipment and unnecessary idling of equipment within 200 feet of noise-sensitive land uses to the extent possible.

- Locate all stationary noise-generating construction equipment such as air compressors as far as practical from existing nearby residences.

- Designate a "noise disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and institute reasonable measures warranted to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site.

Conclusion: **Implementation of the above mitigation measures would reduce potentially significant short-term noise impacts of project construction to a less than significant level. (Less Than Significant Impact with Mitigation)**

I. CULTURAL RESOURCES

The following discussion is based upon a cultural resource assessment of the project site conducted by *Basin Research Associates, Inc.* This investigation included a literature review of archival records at the Historical Resources Information System, Sonoma State University, a review of previous archaeological surveys and reports, and a field survey of the project site. The results of this cultural resources assessment are contained in a report on file with the City of San Jose Departments of Planning, Building, and Code Enforcement.

1. Existing Setting

Archaeological Resources

The general project site area is located in an archaeologically sensitive area, and several prehistoric sites have been recorded in the project site vicinity. No prehistoric resources were identified within or adjacent to the project site. Three prehistoric sites, CA-SCl-294, SCl-606, and SCl-640, as well as one isolated resource (CA-SCl-ISO-5), have been recorded near the project site. Seven additional sites have been recorded within one mile of the project site. In addition, a "burial [or burials] in trench" in the vicinity of the dairy on Curtner Avenue and two possible aboriginal quarries have been reported.

CA-SCL-606

The nearest recorded site, CA-SCL-606, is a prehistoric chipping station located near the northwest portion of the project site, near the Santa Clara County communication facility. This site is characterized by a scatter of lithic debitage in a relatively flat area, approximately 78 x 55 meters wide near Carol Drive. The debitage at this location consists mostly of angular waste, primary and secondary cortex flakes with a few interior and small finishing flakes of Franciscan chert in reds, pinks, greens, amber and variegated colors.

CA-SCL-294

This site, described as a prehistoric Native American village site, was previously recorded in the vicinity of the Narvaez Avenue/Hillsdale Avenue intersection. While the recorded site boundaries of CA-SCl-294 are expansive, it seems likely that the most significant deposits are located west of Narvaez Avenue and north of Hillsdale Avenue. This site was subject to subsurface testing in conjunction with the State Route 87 project, and no traces of prehistoric cultural materials were observed. The State Route 87/Light Rail Corridor area has covered the previously open portions of this prehistoric site. The area to the northeast of this intersection, now occupied by residents of the Canoas Creek area, may include part of this site. No cultural resource indicators were observed in the vicinity during surveys for the Mountain Springs Mobile Home Park project in 1977. For these reasons, the existence of a portion of CA-SCl-294 within the Specific Plan area has not been confirmed.[20]

CA-SCl-640

This site was previously recorded on the north side of Curtner Avenue, near Stone Avenue, and has been described as containing "habitation," "known burials," and "inland midden with light fire-cracked rocks." This site could not be relocated or confirmed during previous

[20] City of San Jose, Final Environmental Impact Report, General Plan Amendment, Communications Hill Specific Plan, Volume II, October 1991. p. 89-90.

field surveys, and it is possible that this site is buried under existing development north of the Specific Plan area.[21]

CA-SCl-ISO-5

This site contained an isolated chert fragment located near a spring. It is not believed to contain additional cultural resources.[22]

Aboriginal Quarries

Two possible aboriginal quarries are located near the northern boundary of the project site. One quarry is located approximately 900 feet down slope (northwest) and the other is located approximately 1,000 feet east-northeast at the 250-foot contour line, and may be associated with the chipping station (CA-SCl-606). It appears that chert material was removed from these former quarries. Angular waste was observed, but no flakes were observed.

Historic Resources

No local, State of California, or National Register of Historic Places historic properties are located within or adjacent to the proposed project site. The following resources have been identified within the project site area.

Mining Activity and Fenced Area Near County Communication Facility

Small-scale historic mining activity has previously been noted on the north side of the County communication facility. Historic fence lines were also noted across the hillside portion of the property. These fences were believed to be approximately 100 years in age, based on the presence of square nail construction.

Hillsdale Mines

The presence of the Hillsdale mines in the Specific Plan area was previously recorded. Mining to extract cinnabar (mercury) intermittently occurred northeast of the site, on the central portion of the Specific Plan area, between approximately 1850 to 1950. The mine tunnels have largely been destroyed through subsequent gravel extraction work. At this time, the only traces of the Hillsdale mines consists of hummocks and sag ponds caused by cave-ins and other earth movement. No adits (horizontal passageways into a mine) or tunnels were observed.

Barbed Wire Fence

A barbed wire fence running along the northeastern portion of the site, between the County communication facility and Hillsdale Avenue was observed in 1987. Several types of barbed wire form the fence and include a distinctive type known as Schmidt's Fence Strip, which was patented in 1887. The fence appeared to exhibit integrity and functioned as a boundary marker dating to the late 19th century.

[21] City of San Jose, Final Environmental Impact Report, General Plan Amendment, Communications Hill Specific Plan, Volume II, October 1991. p. 90.
[22] City of San Jose, Final Environmental Impact Report, General Plan Amendment, Communications Hill Specific Plan, Volume II, October 1991. p. 89.

475 Hillsdale Avenue

A single-story bungalow house is located at 475 Hillsdale Avenue, on the Berns/Ross property portion of the project site. The house is situated on a bench cut into the steeply sloping south side of the hill, which is accessed by a sloping, unimproved gravel driveway. A mailbox with the house address is adjacent to the driveway on Hillsdale Avenue. The front façade of the house faces south toward Hillsdale Avenue. The house is surrounded by dense foliage including several medium sized trees and a large number of introduced cacti.

About 100 feet below the house, and nearer to Hillsdale Avenue, is a detached, gabled, wood-frame single car garage covered with wood horizontal siding.

The house is a rectangular plan wood-frame Craftsman bungalow house with a gently-pitched, cross gable roof covered with rolled asphalt roofing paper and a large recessed porch along the front facade. The roof has wide eaves with exposed rafters. The stud-wall, wood-frame is covered with clapboard siding. The house has a perimeter concrete foundation. Recessed below the main roof, the front porch occupies the western half of the south façade. The front porch is constructed on a foundation of random, rough stone and is covered with plywood. The porch columns are also set on stone bases. The house appears to be fairly deteriorated, but largely unaltered since originally constructed. It appears to date from about 1910 to the 1920s.

Two sheds are present on the property and appear to be of more recent construction (within the last 30 years). A modern shed covered with plywood is adjacent to the garage. A path with stone steps leads from the garage to the house. Another wood-frame storage shed with a roof is located northeast of the house. This shed is covered with plywood and vertical wood planks.

The house at 475 Hillsdale Avenue did not meet the criteria for, and therefore, does not appear eligible for listing on the National Register or the California Register. For this reason, this structure is not considered historically significant.

2. Cultural Resources Impacts

For the purposes of this project, a cultural resource impact is considered significant if the project would:

- cause a substantial adverse change in the significance of a historic resource; or
- disrupt or adversely affect a unique archaeological resource.

Archaeological Resources

No midden, prehistoric or historic archaeological material was observed during previous field surveys within the project site. There are no recorded archaeological sites within the project site. One prehistoric archaeological site, CA-SCl-606, was recorded near the northwest end of the project site and two aboriginal quarries were observed north of the project site. However, because these resources are not located within the area of proposed construction activity, the project would not significantly impact archaeological resources.

- **The project would not result in significant impacts to buried archaeological resources. (Less Than Significant Impact)**

Historic Resources

No local, State of California, or National Register of Historic Places historic properties are located within or adjacent to the proposed project site.

Barbed Wire Fence

Development of the proposed project would result in the loss of the barbed wire fence located along the northeastern portion of the site, between the County communication facility and Hillsdale Avenue and the bungalow residence at 475 Hillsdale Avenue (on the Berns/Ross property). While the barbed wire fence includes a distinctive type of barbed wire, the loss of this fence would not constitute a significant historic resource impact. However, the project proposes to contact the History Museums of San Jose prior to removal of this fence and to allow the museum staff to locate and retrieve samples of this fence material for public display and/or historical research.

475 Hillsdale Avenue

As described above, there is a bungalow residence with surrounding structures located on the Berns/Ross property. The structures associated with this house were evaluated according to the criteria for the National Register of Historic Places, the California Register of Historic Resources, and the City of San Jose's criteria for historical significance. The house at 475 Hillsdale Avenue did not meet the criteria for, and therefore, does not appear eligible for listing on the National Register or the California Register. In addition the house does not qualify as a San Jose City Landmark and is not eligible for listing on the City of San Jose Historic Resources Inventory using the evaluation scoring criteria developed by the San Jose Historical Landmarks Commission. Therefore, the loss of this structure is not considered a significant historic resources impact.

- **The project would not result in significant impacts to recorded historic resources. (Less Than Significant Impact)**

3. Mitigation Measures for Cultural Resources Impacts

Mitigation Included in the Project

The project includes the following measures to minimize potential cultural resources impacts:

Archaeological Resources

- In the event that buried archaeological resources are exposed or discovered during project grading or construction activities, work shall be halted within 100 feet of the find until a qualified archaeologist has been retained and consulted regarding the significance of any such discovery and future recommendations. Recommendations could include evaluation, collection, recordation, and analysis of any significant cultural materials followed by a professional report. In addition, the recommendations could require archaeological monitoring of continued subsurface construction, with the frequency and duration of the monitoring at the discretion of the Monitoring Archaeologist and dependent upon subsurface observations during construction operations.

- In the event that the archaeologist determines that future excavation would endanger a significant cultural resource at this location, it would be the responsibility of the archaeologist to present the City with a proposal for the mitigation of impacts to the resource before work is allowed to continue.

- Uncovered resources will be treated in accordance with state law and the protocol set forth in the CEQA Guidelines.

Historic Resources

- The Museum Director of the History Museums of San Jose shall be contacted regarding the barbed wire fence containing Schmidt's Fence Strip. If the museum Director or staff wish to locate and retrieve samples of the fence wire for public display and/or historical research, the applicant would allow the museum staff to remove the fence wire prior to fence removal.

Conclusion: **Implementation of the above mitigation measures, which are included in the project, would further reduce potential cultural resources impacts. (Less Than Significant Impact)**

J. VISUAL AND AESTHETIC QUALITY

1. Existing Setting

Visually, the area surrounding the project site is in transition, with vacant hillside lands mixed with older and more recent residential development and public uses.

The project site consists of portions of four properties located on Communications Hill in San Jose (refer to Figure 4). Communications Hill rises approximately 300 feet above the valley floor, and is the dominant topographic feature in this level area of south-central San Jose. The terrain in the higher elevation areas consists of moderate to steep slopes on the hillsides, with broad, gently sloping ridgetops. The primary ridge runs for approximately one mile from the southeast section of Communications Hill to the northwest, where it declines in elevation to a series of lower knolls. The ridgeline also extends to the west for one mile, terminating at Canoas Creek. This ridge is bisected by the SR 87 freeway.

The ridge area of Communications Hill is mostly undeveloped, with the exception of public communication facilities and some single family residences. The level areas at the base of Communications Hill, which surround the mainly undeveloped ridge, consist of a variety of existing land uses, including mainly residential uses, a church, the Oak Hill Memorial Park Cemetery, the Capitol Drive-In movie theaters, and other public uses. In addition, residential uses have recently been built on the southwest portion of the hill.

Visual and Aesthetic Character of the Project Site

The project site comprises approximately 130 acres of the Communications Hill area, including upland ridgetop areas, sloping hillside areas, and level areas at the base of the hill. The upper portion of the site is located approximately 300 feet above the Santa Clara Valley floor and consists of gently-sloping ridgetops, with slopes ranging from 10 percent to over 35 percent. The remainder of the project site consists mainly of undeveloped, rounded hillside areas. The vegetative cover of the site consists primarily of open grassland with sparse trees and shrubs. The 115-foot high AT&T tower is located on the upland portion of the site. A paved access road, with a gate off Mill Pond Way, provides access to the AT&T communications tower.

There is a single-family bungalow house located on the Berns/Ross property (475 Hillsdale Avenue) portion of the project site. The house is situated on a bench cut into a steep slope, which is accessed by a sloping, unimproved driveway. Below the house and nearer to Hillsdale Avenue is a detached single car garage that may be contemporary to the house. Two sheds are present on the property and appear to be of more recent construction (within the last 30 years).

Views of the Project Site

Views of the ridgetop portions of the project site are available from numerous surrounding areas of the City. Motorists and Light Rail Transit (LRT) passengers traveling along Curtner Avenue, Almaden Expressway, SR 87, SR 85, Capitol Expressway, and Monterey Road can view the slopes and ridgetop areas of the higher elevations on the hill. Views of the project site area from the surrounding areas and roadways are dominated by the 115-foot high AT&T tower and the County communication center, which have been erected at the highest elevations of Communications Hill. The County communication center consists of a fenced area with numerous antennae, as well as a parking lot and single-story support building. Photos 1-4 show views of the project site from Hillsdale Avenue.

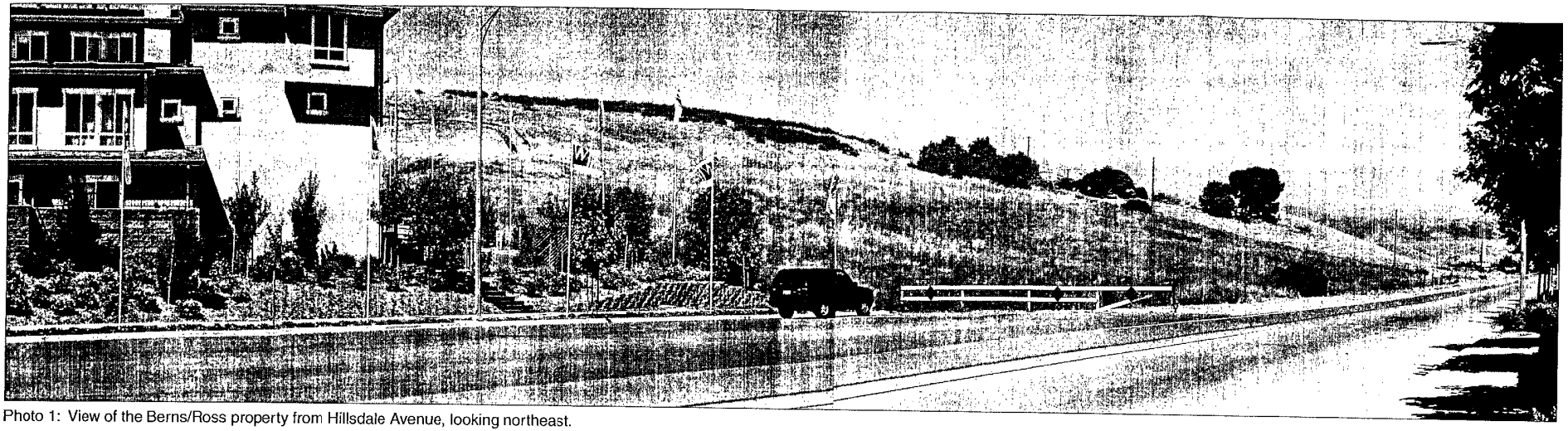


Photo 1: View of the Berns/Ross property from Hillsdale Avenue, looking northeast.

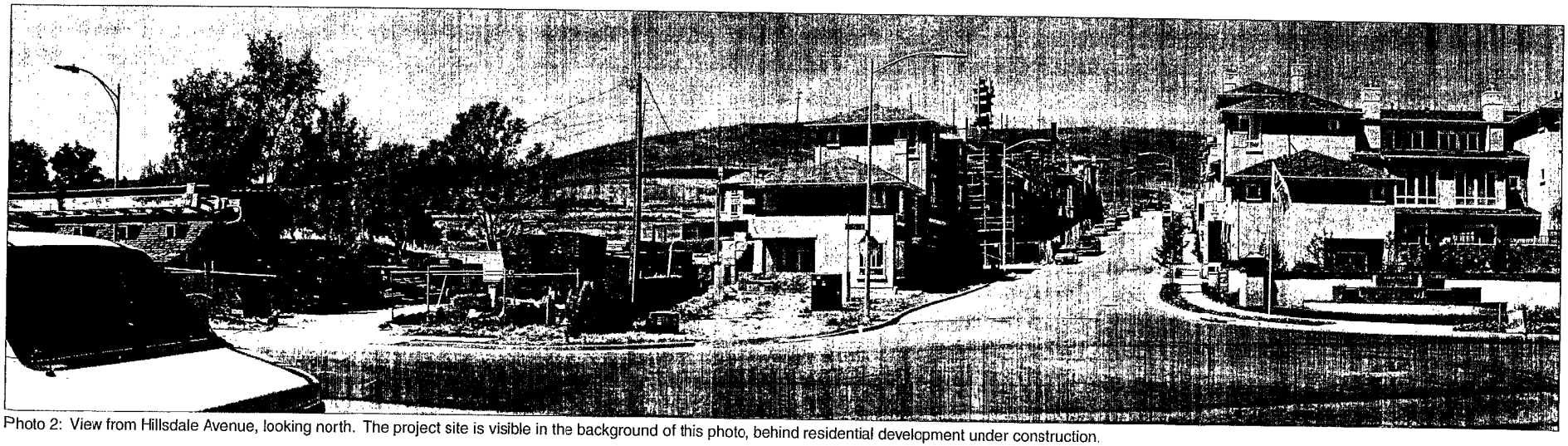


Photo 2: View from Hillsdale Avenue, looking north. The project site is visible in the background of this photo, behind residential development under construction.

PHOTOS 1 AND 2

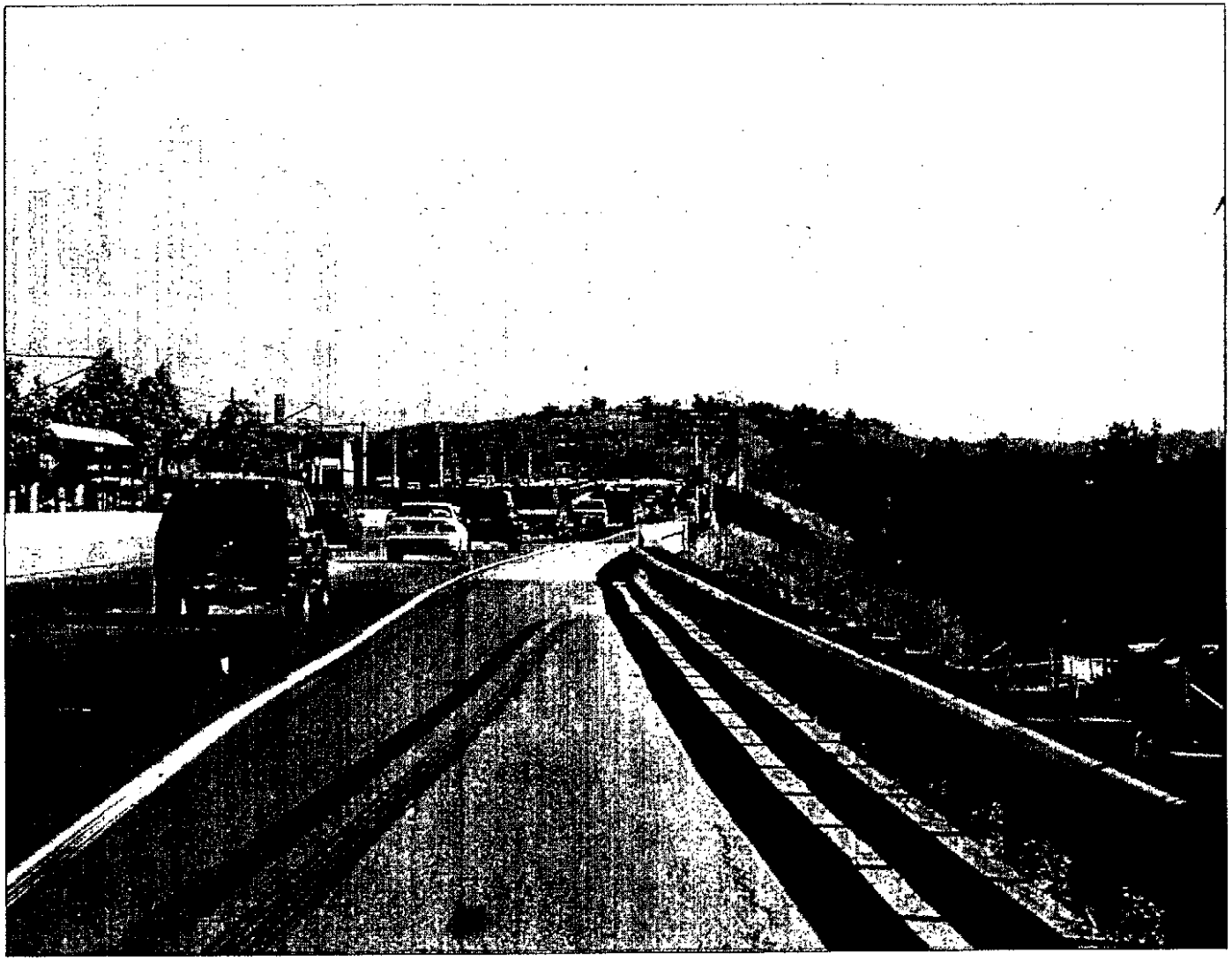


Photo 3: This photo was taken from SR 87 near Alma Avenue, looking south. Traffic on SR 87 is shown in the foreground, and the LRT line is visible on the far left side of the photo. Communications Hill is visible in the background. The County communications facility is visible on the hilltop on the right-central portion of the photo. The AT&T communication tower is shown in the background on the left side of the photo.

PHOTO 3

Views from the Project Site

Views of downtown San Jose to the north, the Santa Clara Valley to the southeast, the Diablo Range to the east, the Santa Teresa Hills to the south, and the Santa Cruz Mountains to the west, can all be seen from the ridgetop portion of the project site. Panoramic views are available from numerous points on the Vieira portion of the site. Photos 5-8 show the views from the project site looking out over the City.

2. Visual and Aesthetic Impacts

For the purposes of this project, a visual impact is considered significant if the project would:

- substantially alter existing views of scenic vistas or resources; or
- produce substantial light or glare such that it poses a hazard or nuisance; or
- introduce new development which will substantially detract from the integrity, character and/or aesthetic environment of this neighborhood.

Aesthetic values are largely subjective. Individual taste may vary significantly, particularly with regard to architectural style. The proposed development would introduce large new structures onto what is essentially a vacant site. Development of the proposed project would intensify the land use and alter the existing open space character of the project site. The construction of residential buildings, roadways, and an elevated water tank(s)[23] would introduce a large amount of higher density development to a predominantly undeveloped hillside and ridgetop area.

Views of the Site/Loss of Open Space/Intensification of Land Use

Nearby Views of the Site

The visual changes resulting from development of the project would be particularly noticeable to existing residences within or adjacent to the Communications Hill area, including residents of the Elk Ridge Estates Condominiums, the Helzer Ranch residences, the Carol Drive subdivision, the Mill Pond Mobile Home Park, the Chateau La Salle Mobile Home Park, and the residences across Hillsdale Avenue. The addition of multi-family residential structures on the ridgetop areas of the site, along with roadways, and a water tank, would be visible to existing residents.

Although development of the project would include planting of native and non-native street trees and vegetation, especially in park and terrace areas, the serpentine soils on the site limit the types of vegetation that will succeed on the site. Due to the limitations to plant growth as a result of the serpentine soils on-site, a landscape feasibility study would be completed in conjunction with the design of each phase of the project.

[23] As described in Section I, C, of this report, alternative studies for the water system will be evaluated, including: a below grade (or underground) tank verses an elevated tank on top of the hill, and a pump with a back up generator (possibly without a tank) at the foot of the hill. Because the type of water system to be constructed is not yet determined, this EIR evaluates the potential impacts of the elevated tank(s) on top of the site, since an elevated tank(s) would result in greater visual and aesthetic impacts than the other water supply options.

Photo 5: View from the project site looking north, standing on the northern corner of the AT&T Communications property. The Dairy Hill area is visible in the foreground. The County Communications Facility is visible in the background of the left side of the photo, downtown San Jose in the center, and residential areas on the right.

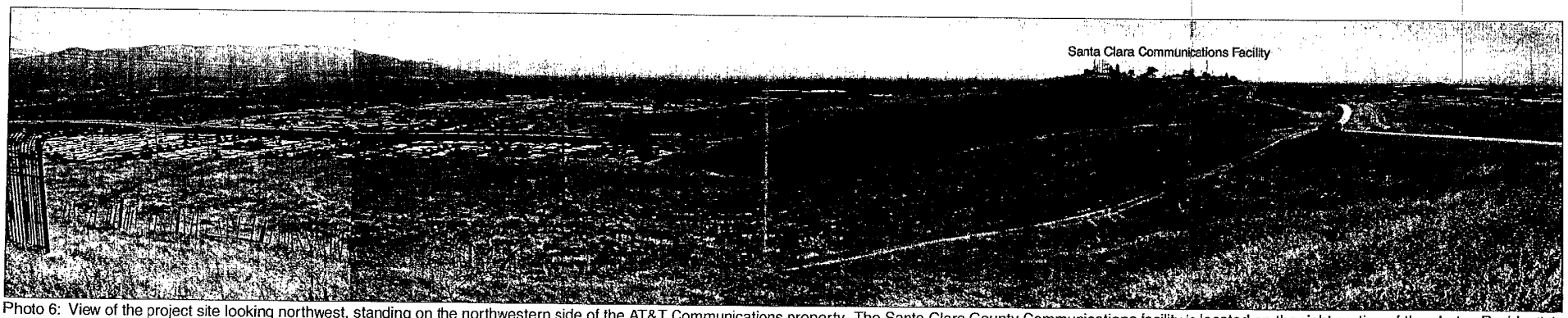


Photo 6: View of the project site looking northwest, standing on the northwestern side of the AT&T Communications property. The Santa Clara County Communications facility is located on the right portion of the photo. Residential areas to the west and State Route 87 are visible on the left portion of the photo.

PHOTOS 5 AND 6

Photo 7: View of the project site looking south, standing along the northwestern side of the AT&T Communications property. Residential uses are visible in the background of the photo.

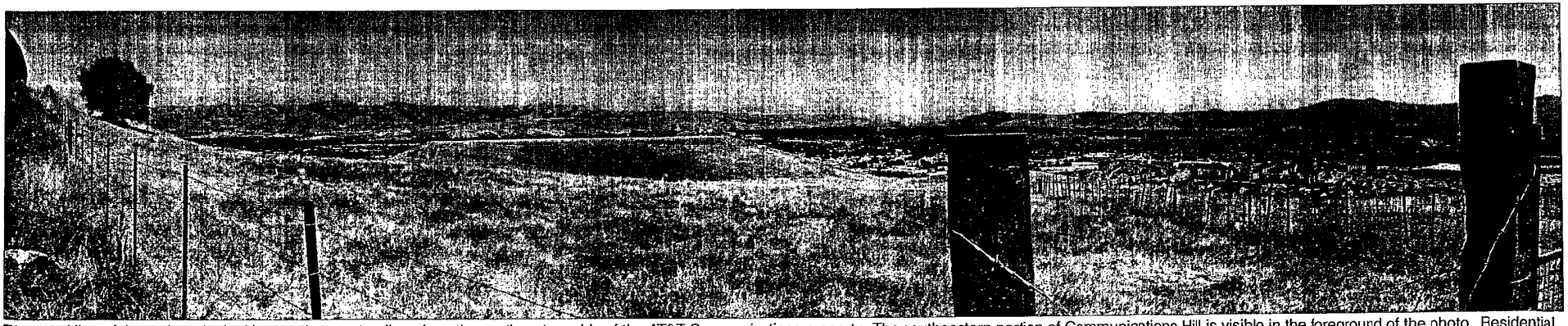


Photo 8: View of the project site looking southeast, standing along the southeastern side of the AT&T Communications property. The southeastern portion of Communications Hill is visible in the foreground of the photo. Residential uses are visible in the background on the right side of the photo.

PHOTOS 7 AND 8

Distant Views of the Site

With development of the proposed project, motorists on regional arterials, such as SR 87, Capitol Expressway, Hillsdale Avenue and Curtner Avenue, along with residents with long-range views of the ridgetop and upper slopes, would experience views of a dense urban residential development on and around the top of Communications Hill, with a band of open space on the side slopes. The residential development on the Berns/Ross property would not be visible from these farther away locations.

Most persons viewing the site from the east, generally along Monterey Road, would continue to be more aware of foreground features, such as the Oak Hill Memorial Park, and other commercial and industrial uses. However, from the south and southwest, views of the site would be substantially altered as the open space of the existing hillside and visible ridgetop would be replaced with multi-family residential uses. While a large portion of the site would remain as open space, the residential structures, urban roadways, cut and fill slopes, and landscaped areas would significantly alter the appearance of the site. Motorists and LRT passengers, as well as residents to the southwest would be aware of this substantial change in the character of the hillside and ridgetop areas.

Due to its high visibility, the loss of this portion of Communications Hill as open space would constitute a significant visual and aesthetic impact.

- **The project would result in significant visual and aesthetic impacts upon views of the project site from nearby and distant areas. (Significant Impact)**

Grading Impacts

Grading on the site would be the minimum required to meet engineering design standards for the proposed development, and would be designed to conform to the existing natural contours of the hillside as much as feasible. However, due to the size of the proposed development and the nature of the site, there would be a substantial amount of grading on the site, which would significantly alter the character of the project site. Preliminary grading quantity estimates indicate that there would be approximately 1.9 million cubic yards of cut and 1.9 million cubic yards of fill on the site.

Grading for the proposed residential development would result in several cut slopes with slope faces measuring up to 73 feet in depth and fill slopes with slope faces measuring up to 87 feet in depth. While these cut and fill slopes would be capped with up to two (2) feet of soil, and would be covered with roads, housing, parks, terraces, and open space areas, this slope grading would be substantial and cuts would be exposed until the proposed development is completed and vegetation is reestablished. For these reasons, grading related to the construction of the project's cut and fill slopes would be considered a significant visual and aesthetic impact.

- **Grading for the project would result in significant visual and aesthetic impacts. (Significant Impact)**

Water Tank(s) Impacts

As described in the Communications Hill Specific Plan, a new water system will be constructed in order to meet the demand for domestic water use and fire service on the site

and the remainder of Communications Hill. (Alternative studies for the water system will be evaluated, including: a below grade [or underground] tank verses an elevated tank on top of the hill, and a pump with a back up generator [possibly without a tank] at the foot of the hill. Because the type of water system is not yet determined, this EIR evaluates the potential impacts of the elevated tank on top of the site, since the elevated tank would result in greater visual impacts than the other water supply options.)

The approximately 115-foot high water tank structure would be incorporated into the AT&T park near the 115-foot high AT&T communication tower. The siting of this water tank near the AT&T communication tower and the planting of park landscaping would soften the appearance of the water tank. However, this structure would be a massive structure and would be readily visible from the surrounding streets and neighborhoods, and also from the many areas of the City that have views of Communications Hill and the site. It is not yet determined whether one elevated tank would be sufficient for the project. If the water tank is designed to hold capacity for the entire Communications Hill Specific Plan area, then two elevated tanks may be required. A review and refinement of the water tank size requirements would be completed during the design phase of the project. However, due to the necessary size of the water tank(s), this structure would represent a significant visual and aesthetic impact.

- **The elevated water tank(s), if necessary for the project, would be visible from the surrounding streets and neighborhoods, and also from the many areas of the City that have views of Communications Hill and the site, and therefore, would result in a significant visual and aesthetic impact. (Significant Impact)**

Light and Glare Impacts

The proposed project would introduce additional sources of nighttime lighting on the site. The project would provide outdoor lighting, including low level pedestrian light fixtures and downward focused low pressure sodium luminaries along roadways. All new outdoor lighting for the residential buildings and outdoor use areas would meet the City of San Jose's outdoor lighting requirements. Outside lighting would generally increase the level of illumination in the area, but would not cause significant spillover onto adjacent properties or glare. The introduction of lighting on the project site would be similar to the existing urban development surrounding the project site area. For this reason, the introduction of lighting on the project site is not considered a significant impact.

- **The project would not result in significant light and glare impacts. (Less Than Significant Impact)**

Impact Upon Views from the Site

Opportunities to view downtown San Jose, the Santa Clara Valley, the Diablo Range, and the Santa Cruz Mountains from the higher elevations of the site would be increased as a result of the project, since the new roadways, residential and commercial uses would provide greater public access to the ridgetop for enjoyment of the views. This is considered a beneficial impact.

- **The project would increase access opportunities to the scenic views from the site. (Beneficial Impact)**

3. Mitigation Measures for Visual and Aesthetic Impacts

Mitigation Measures Proposed by the Project

Views of the Site

- The conceptual plans submitted to the City of San Jose for the PD Zoning of the project site will include building elevations and landscaping which are intended to assure a minimum level of aesthetic quality. Specific structures proposed in the future will be reviewed by City Staff for conformance with the standard established by the PD Zoning. These measures would reduce the adverse effect of developing this site.

- The project would incorporate landscaping which would conform with the requirements outlined in the Communications Hill Specific Plan and would follow the Specific Plan's recommendations regarding the types and placement of plants compatible with the serpentine soils found on the site, as well as other local conditions.

Conclusion: **The proposed development project would result in a significant change in the visual character of the site and would alter the views of a scenic resource from several view corridors. Although conformance with the proposed PD Zoning would require that the project include design and aesthetic qualities that would conform to City guidelines and would ensure that the appearance of the project is consistent with acceptable aesthetic standards, the project would still result in significant visual and aesthetic impacts. (Significant Unavoidable Impact)**

Grading Impacts

- Grading and re-contouring of the hillsides and slopes would be minimized to preserve the topography of the land to the extent feasible.

- The project would provide for earthen, vegetated slopes to the greatest extent feasible, in order to permit natural landscaping. With the exception of the Dudleya mitigation areas, the project would cap all cut and fill slopes with up to two (2) feet of non-serpentine soils appropriate for plant growth, and would plant the slopes with native plant materials.

Conclusion: **Grading for the proposed project would result in a significant change in the visual character of the hillside and would be considered a significant unavoidable visual and aesthetic impact. (Significant Unavoidable Impact)**

Water Tank(s)

- A review and refinement of the water tank size requirements would be completed during the design phase of the project, the applicant would review the size requirements of the water tank and would reduce the height of the proposed tank to the greatest extent feasible.

Conclusion: **The elevated water tank(s), if necessary for the project, would be visible from the surrounding streets and neighborhoods, and also from the many areas of the City that have views of Communications Hill and the site. This impact was identified in the Communications Hill Specific Plan as a significant unavoidable visual and aesthetic impact. If the project requires an elevated water tank, this impact would still be**

considered a significant unavoidable visual and aesthetic impact. (Significant Unavoidable Impact)

Light and Glare

- All new outdoor lighting for the residential buildings and outdoor use areas would meet the City of San Jose's outdoor lighting requirements.

Conclusion: **Additional lighting introduced as part of the project would not result in significant light and glare impacts. (Less Than Significant Impact)**

Mitigation Measures Not Included in the Project

In addition to the mitigation measures identified above, the following measures could be required as part of the project to reduce or avoid the visual and aesthetic impacts of the project:

- The use of natural looking retaining walls and/or rock slopes to reduce the visual effects of project grading. This could involve salvaging large boulders on-site and using them as part of retaining walls. This measure could also involve the use of Caltrans' natural-looking "stone" walls.

Conclusion: **The above measure would reduce the significant visual and aesthetic impacts of developing the ridgetop, however, grading for the proposed project would still result in a significant change in the visual character of the hillside and would be considered a significant unavoidable visual and aesthetic impact. (Significant Unavoidable Impact)**

K. ENERGY

This section was prepared pursuant to CEQA Guidelines Section 15126.4(a)(1)(C) and Appendix F (Energy Conservation), which require that EIRs include a discussion of the potential energy impacts of proposed projects with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

1. Energy Impacts

Development of the project would result in the consumption of energy in three forms: 1) the fuel energy consumed by construction vehicles; 2) bound energy in construction materials such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as milled lumber and glass; and 3) operational use of energy by future site occupants for transportation, utilities, and other residential uses.

With respect to project design and use of construction materials, extensive information is available to builders on the use of recycled-content building materials, to minimize the reliance of products made from virgin materials, which typically require more energy to manufacture and process. All of this information would be available during the specific building design and approval. The project would be subject to the provisions of Title 24 of the California Administrative Code, which sets energy efficient design standards for residential buildings.

Development of the project would have an indirect influence on the energy consumed in automobile travel. Locating the proposed development in proximity to the existing Light Rail Transit (LRT) Station at Capitol Avenue would encourage use of transit facilities.

- **Although development of the project would contribute incrementally to the use of energy for development and operation of the site, this impact would be less than significant. (Less Than Significant Impact)**

2. Mitigation Measures for Energy Impacts

Mitigation Measures Proposed by the Project

- No mitigation is proposed.

Conclusion: **The project would result in a less than significant incremental contribution to the use of energy for development and operation of the site. (Less Than Significant Impact)**

Mitigation Measures Not Included in the Project

The following measure could be required as part of the project to reduce the energy usage impacts of the project:

- The applicant could review the City's "Green Building" recommendations to determine if there are measures that could be incorporated into the building design on-site, in order to reduce energy consumption. The project could be required to incorporate all feasible "green building" design recommendations.

Conclusion: **Incorporation of the above mitigation measure would reduce the project's incremental contribution to the use of energy for development and operation of the site. (Less Than Significant Impact with Mitigation Not Proposed)**

L. UTILITIES

1. Existing Setting

The project is located within the City of San Jose Urban Service Area.

Sanitary Sewer Wastewater Treatment

Sanitary sewer service to the project site area is provided by a 30-inch interceptor in Hillsdale Avenue near Narvaez Avenue, which flows southwest to the downstream reaches of the Downer Canoas interceptor and the Almaden 1B Interceptor.

Wastewater treatment service for the area is provided by the City of San Jose. The WPCP is located in Alviso, approximately 12 miles to the north of the project site. The WPCP provides primary, secondary, and tertiary treatment of wastewater for several surrounding cities and sanitation districts. The Cities of San Jose and Santa Clara jointly own the facility, but the City of San Jose operates and maintains the WPCP.

During the average dry weather period (May 1 to October 31) the WPCP is permitted to treat up to 167 million gallons of influent flow per day. The average dry weather influent flow (or peak week flow) is determined as the highest average flow during any five-weekday period between the months of June through October. For 1999, the peak week flow was 133.5 million gallons per day and occurred between June 7th and June 11th. The WPCP's treatment capacity of 167 million gallons per day is allocated between the several agencies served and the two co-owners through Master Agreements. The total capacity allocated to the City of San Jose is approximately 106.39 million gallons per day. There is no anticipated expansion of the WPCP or increase in its capacity in the next ten years.

In 1989, the San Francisco Bay Regional Water Quality Control Board (RWQCB) ordered the WPCP to reduce its discharge of metals (copper and nickel) by more than 50 percent to protect aquatic organisms in south San Francisco Bay and meet state and federal water quality objectives. In addition, the RWQCB imposed a 120 million gallon per day flow trigger and required the WPCP to reduce the quantity of effluent discharged to avoid converting the habitat of two endangered species, the salt marsh harvest mouse and the California clapper rail, from salt marsh to brackish or freshwater marsh.

To address these concerns, the RWQCB incorporated the following elements as a condition of the WPCP's 1998 National Pollutant Discharge Elimination System (NPDES) Permit:

1. Continue implementing the San Jose Action Plan (as revised December 22, 1992 and May 28, 1997) that incorporated the following activities designed to reduce the effluent flow to below 120 million gallons per day: water conservation, reclamation, wetlands mitigation, industrial water recycling, and increase public education.

2. Develop and implement a Contingency Plan to provide ample assurance that the effluent flows of the WPCP are brought, and remain, below 120 million gallons per

day. The Contingency Plan adds new measures, in a tiered format, aimed at controlling discharges of concern.

Restrictions necessary to maintain conformance with the NPDES Permit may be placed on current dischargers to the WPCP in the future, if necessary.

Under existing conditions, the vacant site does not generate wastewater that is directed to the WPCP.

Water Service

Water is supplied to the project site area by the San Jose Water Company. Water lines supplying water to the project site area include: a 32-inch main in Hillsdale Avenue; a 10-12-inch line in Monterey Road, which is connected to 10-inch lines in Curtner Avenue and Pullman Way; and a 16-inch line in Canoas Garden Avenue, which is connected to a 12-inch line in Mill Pond Drive and an eight-inch line in Carol Drive.

Storm Drainage

Existing storm drainage facilities currently convey runoff from the site to Canoas Creek, which flows in a northwestern direction to its confluence with the Guadalupe River. Storm drainage from the site is mainly provided by a 54-inch storm pipe in Hillsdale Avenue, which discharges directly to Canoas Creek. In addition, other storm drain facilities in the site vicinity include: a 54-inch pipe through the Mill Pond Mobile Home Park, which connects to a main 66-inch trunk line that empties into the Guadalupe River; a 12-inch pipe line in Curtner Avenue, which also discharges to the 66-inch trunk line; a 54-inch line in Hillsdale Avenue which flows to Monterey Road and Southside Drive and into an outfall in Coyote Creek; a 24-inch pipe in Pullman Way and a 21-inch pipe from the Chateau La Salle Mobile Home Park, both of which connect to the Coyote Creek outfall; and a 42-inch pipe which connects to a line along Umbarger Road and leads to another outfall in Coyote Creek; and another 18-inch line in Curtner Avenue, which discharges to a 24-inch line on Monterey Road.[24]

Runoff from developed portions of the site vicinity which are outside of the City of San Jose limits does not enter the City storm drain system. This runoff is conveyed to detention basins for evaporation and percolation into the ground.

Electric and Natural Gas Service

Electric service is provided by Pacific Gas and Electric (PG&E) Company. Currently electric and gas service is provided for the two communications facilities only. According to the Specific Plan, additional service for future uses on the site will be provided in the public right-of-way through underground conduit/trench. There are two existing PG&E electric lines and easements crossing Communications Hill; a 21 kilovolt (kV) overhead distribution line and a 60 kV transmission line.[25] One set of power lines crosses the site in an east-west direction, from the AT&T communication tower to the east side of SR 87. The other power lines cross the site generally in an northeast-southwest direction, from the AT&T communication tower down to Hillsdale Avenue.

[24] City of San Jose, Final Environmental Impact Report, General Plan Amendment, Communications Hill Specific Plan, Volume II, October 1991. p. 152.

[25] A Specific Plan for Communications Hill, Prepared for the City of San Jose, Prepared by Solomon, Inc., Adopted by City Council April 7, 1992. p. 49.

Natural gas service is also provided to the project site area by PG&E. A network of gas lines is located throughout the area surrounding the project site. Specifically, there are: four-inch lines along most of Hillsdale Avenue; a two-inch line along Carol Drive; a two-inch line in Curtner Avenue, between Monterey Road and Stone Avenue; and a multi-line system of six-inch and eight-inch parallel lines along Monterey Road. There are no high-pressure gas lines on or near the project site.

Telephone and Telecommunications Service

Local telephone service is provided to the project site area by Pacific Bell. Existing overhead lines located along the surface streets which surround Communications Hill provide telephone service to the project site area.

Pacific Bell also has an underground utility trench, which is used by AT&T and others for their communication tower facility on top of the project site. The trench easement extends northerly along the County communications center property and down the hill slope along Carol Drive.

Solid Waste Service

Residential solid waste collection in San Jose is handled through exclusive agreements with specific service providers. Single-family services in the project site area are provided by Western Waste, Inc. For multi-family residences, solid waste services are provided by Green Team of San Jose. The City of San Jose is under State mandate (AB 939) to divert 50 percent of its solid waste by the end of 2000, and the City is currently only at a reduction rate of 43 percent.[26]

2. Utilities Impacts

For the purposes of this project, a utilities impact is considered significant if the project would:

- directly affect a major utility line or facility; or
- result in a substantial increase in the demand for public services.
- exceed the capacity of public service facilities to such an extent as to create a safety or public health hazard; or
- require or result in the construction of new facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments; or
- need new or expanded entitlements for water supplies.

The estimated demand for utilities was determined based upon the assumption that, at buildout, the project would consist of 765 high-density residential buildings.

[26] Melody Tovar, Environmental Services Department, City of San Jose, written communications, August 9, 2000.

Sanitary Sewer/Wastewater Treatment

The proposed project would generate approximately 328,000 gallons of sewage per day, based upon a sewage generation rate of 90 percent of the domestic water use of the project. upon the City's sewage generation rates. New sewer lines would be constructed throughout the site and would drain to the existing line in Hillsdale Avenue near Narvaez Avenue and to the Almaden 1B Interceptor. A temporary pump station and force main may be required to force sewage from parts of the site back over the hill. The existing sanitary sewer lines in the project area are sufficient to serve the proposed project. While the project would incrementally contribute to additional flow to the WPCP, the proposed increased flows would not exceed the WPCP 120 mgd capacity.

- **The project would not result in significant sanitary sewer or wastewater treatment impacts. (Less Than Significant Impact)**

Water Service

At buildout, the proposed development would result in a water demand of approximately 360,800 gallons per day, based upon the City of San Jose's water generation rates, not including landscaping. It is anticipated that project landscaping would require the use of approximately 38,048 gallons per day of water. Water lines would be extended through the site from the 32-inch line in Hillsdale Avenue. Water lines for the use of reclaimed water will be installed to allow the use of reclaimed water in the park and common landscape areas. As described previously, a new water system will be constructed, as outlined in the Communications Hill Specific Plan, in order to meet the demand for domestic water use and fire service on the site and the remainder of Communications Hill.

The Specific Plan identified that a new elevated storage tank with a capacity of 2.2 million gallons would be necessary to serve the future development on Communications Hill. The Specific Plan also explains that a pump station to boost water from the existing lines at Hillsdale Avenue to the elevated tank, as well as main distribution lines within the public right-of-ways, would be needed. However, the City is also considering other methods instead of the elevated water tank to provide adequate, reliable water service and fire protection to the site. Alternative studies for the water system will be evaluated, including: a below grade (or underground) tank verses an elevated tank on top of the hill, and a pump with a back up generator (possibly without a tank) at the foot of the hill. If constructed, an approximately 115-foot high water tank structure would be incorporated into the AT&T park near the 115-foot high AT&T communication tower.

- **The project would require the development of a new distribution system. However, this system was identified in the Communications Hill Specific Plan, and therefore, the project would not result in new significant water service impacts. (Less Than Significant Impact)**

Storm Sewer Service

The main drainage impact that would result from the project would be the increase in runoff from the site which would result from increased impervious surface area (refer to Section II, D, Drainage, Flooding and Water Quality of this SEIR). The project site would drain to Canoas Creek. The northwestern half of the project site would drain directly to Canoas Creek, while the southeastern half of the site would drain to Canoas Creek through an existing storm drain system in Hillsdale Avenue.

The project would construct an on-site collection system and would build the necessary extensions of the public storm water collection system in the streets on the site. The City of San Jose has included detention storage ponds within the Communications Hill Specific Plan, for areas that drain directly to Canoas Creek, in order to mitigate for potential increased flows due to development. The Specific Plan included detention ponds in both the Narvaez and Hillsdale drainage areas. The Helzer Ranch project includes two detention ponds that were designed to accommodate increased drainage from that project, as well as the proposed project. The Helzer Ranch project is under construction and these detention ponds were graded to the final design contours and capacities. The detention ponds have a maximum design water depth of approximately three (3) feet, and a required capacity of approximately one acre foot for the 100-year design storm. The proposed project has been designed to drain towards these detention ponds on the Helzer Ranch property. The outlet structure will be modified when additional drainage area is added to the system. The 10-year and 100-year peak flow rates at Narvaez Avenue with the project would not exceed the existing peak flow rates.

The project also proposes to construct an interim storm water detention basin on the northwest corner of the project site (refer to Figure 5). This detention basin would be approximately four feet deep and would have a capacity of one acre-foot of water. Storm flows from the northwestern portion of the site would be directed by gravity to this detention basin, stored temporarily, pumped by a force main and released through storm lines in the roadways to the detention ponds on the Helzer property. Once the peak flows have subsided in the Canoas Creek channel, the water in these ponds would be released into the creek. This would reduce the project's impact on peak flows in Canoas Creek. This interim detention basin would remain as part of the project until the adjacent property is developed according to the Communications Hill Specific Plan.

The project also includes a detention pond in the Hillsdale Avenue drainage system upstream of the Berns/Ross property. The detention pond was designed to accommodate increased drainage from the proposed project, as well as future development on Communications Hill in the Hillsdale Avenue drainage area. The proposed detention pond would have a maximum design water depth of approximately three (3) feet, and a required capacity of approximately 1.5 acre feet for the 100-year design storm. The 10-year and 100-year peak flow rates at Hillsdale Avenue with the project would not exceed the existing peak flow rates.

- **The project would not create the need for major new storm drain infrastructure beyond that proposed on the project site and identified in the Specific Plan. (Less Than Significant Impact)**

Electric Service

The project would increase the demand for electric and natural gas service on the site and would require the expansion of electric and natural gas lines. Since electric and natural gas lines are present in the site area, the extension of these lines would not result in significant utilities impacts. These lines would be undergrounded, where feasible.

- **The project would not result in significant electric or natural gas service impacts. (Less Than Significant Impact)**

Solid Waste

Solid waste collection for the project site would be provided by the Western Waste Inc. (for single-family) and Green Team (for multi-family), and the waste may be disposed at any of the four privately owned landfills in San Jose. The project residences would participate in the City's recycling program in order to reduce the amount of landfilled waste. The project would be designed to ensure that solid waste collectors have access to solid waste for collection, and that residents have adequate storage and space to set out materials for collection. This would allow the City to provide for recycling of materials used by residents at the site and would assist the City in meeting the mandated solid waste diversion rate.

The proposed project is estimated to generate a total of approximately 29,070 pounds of landfilled solid waste and 3,290 pounds of recyclables per week, based on historical garbage collection records of the City's two *Recycle Plus* contractors for the 1996-1997 year.[27] There is sufficient capacity in the existing solid waste disposal facilities to accommodate waste generated by the project.

- **The project would generate a substantial amount of additional solid waste which would impact the City's ability to meet the mandated solid waste diversion rate. However, the project would be designed to accommodate recycling of materials used by residents of the site. (Less Than Significant Impact)**

Telephone and Telecommunications Service

The project would increase the demand for telephone service on the site and would require the expansion of telephone lines. The project would install a controlled environment vault and associated telephone and communication equipment on the project site to provide telephone service to site residents. The project would also require the relocation of the existing Pacific Bell underground conduit trench to proposed streets on the site. Since telephone service is currently provided to the site area, the extension of these lines and the relocation of the Pacific Bell conduit on the site would not result in significant utilities impacts.

The microwave paths of each communication facility were considered in the formation of the Specific Plan and the planning of these neighborhoods. To ensure minimal interruption of service or interference with future resident's activities, the uses identified in the Specific Plan were carefully reviewed. The Specific Plan states that "if a planned development on the ridgetop would cause microwave path interference, it shall remain the communications facilities' responsibility to initiate mitigation measures."[28] The Specific Plan calls for the incorporation of the AT&T tower into a park and the buffering of the County communications facility.

- **The project would not result in significant impacts upon telephone service and would not create the need for major new infrastructure. The project would not significantly interfere with the communications facilities on Communications Hill. (Less Than Significant Impact)**

[27] Based on generation rates provided by Skip Lacaze, Supervising Environmental Services Specialist, Environmental Services Department, City of San Jose, April 1997.
[28] A Specific Plan for Communications Hill, Prepared for the City of San Jose, Prepared by Solomon, Inc., Adopted by City Council April 7, 1992. p. 49.

3. Mitigation Measures for Utilities Impacts

Mitigation Measures Proposed by the Project

Water Service

- The project would be required to comply with Chapters 15.10 and 15.11 of the San Jose Municipal Code, which state that all new and rehabilitated landscaping for projects requiring a development permit from the City, and containing over 10,000 square feet of landscaped area, must design and construct their facilities to receive recycled water.

- The proposed development would be required to separately meter the water flowing to the irrigation system.

- The design and construction of the irrigation system must conform to the South Bay Water Recycling (SBWR) Rules and Regulations, and must be submitted to and approve by SBWR.

- The proposed project would use recycled water for all grading, dust control, and other non-potable approved uses during construction. Recycled water is available from blowoffs located throughout the distribution system, or from the recycled water fill station located on Los Esteros Road. The blowoff nearest the project site is located at Senter Road and Jackie Drive, in San Jose.

Solid Waste

- The project would be designed to ensure that solid waste collectors have access to solid waste for collection, and that residents have adequate storage and space to set out materials for collection. The public streets would be designed to accommodate the resident set-outs as well as large, heavy collection vehicles without interference from curbs, parked cars, or other obstructions.

- The project would also conform with the California Public Resources Code, which requires that adequate space be provided for recycling containers.

- The project would coordinate with recycling facilities which can handle, process, and recycle the material generated during construction activities. The project would be required to achieve a 50 percent diversion of construction and debris waste to such facilities.

Conclusion: **Implementation of the above mitigation would further reduce the potential utilities and service impacts of the project. (Less Than Significant Impact with Mitigation)**

III. AVAILABILITY OF PUBLIC SERVICES

Unlike public facilities and utilities, public services are provided to the community as a whole, usually from a central location or from a defined set of nodes. The resource base for delivery of the services, including the physical service delivery mechanisms, are financed on a community-wide basis, usually from a unified or integrated financial system. The service delivery agency can be a city, county, service or other special district. Usually, new development will create an incremental increase in the demand for these services; the amount of the demand will vary widely, depending on both the nature of the development (residential *vs.* industrial, for instance) and the type of service, as well as on the specific characteristics of the development (such as senior housing *vs.* family housing). The impact of a particular project on public services will, therefore, generally be a fiscal impact. By increasing the demand for a service, a project could potentially cause an eventual increase in the cost of providing the service. CEQA does not require an analysis of fiscal impacts.

CEQA analysis is required if the increased demand is of sufficient size to trigger the need for a new facility (such as a school or fire station), because the new facility would have a physical impact on the environment. CEQA requires that an EIR then identify and evaluate the physical impacts on the environment that such a facility would have. To reiterate, the impact that must be analyzed in an EIR is the impact that would result from constructing a new public facility (should one be required), not the fiscal impact of a development on the capacity of a public service system.

1. Fire Protection

Existing Fire Protection Service

Fire protection to the project site is provided by the San Jose Fire Department, which serves a total area of 203 square miles. The San Jose Fire Department (SJFD) responds to all fires, hazardous materials spills, and medical emergencies (including injury accidents) in the project area. It is the San Jose Fire Department's goal to not exceed four minutes for the "first response" and six minutes for the "second response" times.

The City of San Jose participates in a mutual aid program with the Cities of Milpitas and Santa Clara. Through this program, should the City of San Jose Fire Department need assistance in addition to its own units, one or both of the mutual aid cities would provide assistance to locations within the City of San Jose in whatever capacity was needed.

Project Affects on Fire Protection Service

The existing vacant site is subject to wildfires, which would require fire services. However, the proposed development would generate increased demands for fire protection services. The project would be built to Fire Code standards, including sprinklers and alarms. While adherence to codes would minimize the potential damage and risk from fire, the existing laws represent minimum standards and do not safeguard against all hazards, particularly for industrial development. Despite design measures to reduce potential impacts on fire services, development of this property would increase the demand for fire protection services.

The Communications Hill Specific Plan identified that, in order to provide adequate fire protection and emergency service for future residents of Communications Hill, a fire station located within the neighborhood would be needed. The Specific Plan identified two

potential locations for this fire station west of the AT&T communication tower. The project proposes to construct an approximately 6,000 square foot, urban style fire station on the project site. This station will be built on one of the potential locations identified in the Specific Plan, or at another appropriate location. The exact size and location of the fire station will be determined in consultation with the City.

2. Police Protection

Police protection services are provided to the project site by the City of San Jose Police Department (SJPD). Officers patrolling the project area are dispatched from police headquarters, located at 201 West Mission Street. The SJPD presently consists of approximately 1,342 sworn officers.

The SJPD consists of 64 beats. Each beat is assigned to one of 12 Districts. The beats are identified with a number and the Districts are identified with a letter. The project site is located in District X, Beat 1 of the SJPD's service area. Beat X1 serves an area of 2.52 square miles and approximately 19,196 residents. In 1996, Beat X1 had 1,173 crimes, consisting of 440 felonies and 733 misdemeanors. The most frequent felonies in the area included narcotics felonies, armed robbery and sexual felonies. The most frequent misdemeanors included sexual misdemeanors and narcotics misdemeanors. Beat X1 had approximately 61 crimes per 1,000 population in 1996.[29] Beat X1 ranked 39 out of 64 in the total number of crimes per beat and 51 out of 64 by the rate of crimes per 1,000 population.[30]

The existing vacant site creates little demand for police services. Specific building plans would be reviewed by the City Police Department for incorporation of design measures to reduce potential criminal activities. However, new residential development may cause increased demand for police services, but would not create the need for any new police facilities.

3. Parks and Recreation

The Communications Hill Specific Plan identified specific locations within the Specific Plan area to be developed as public park areas. The parks were located throughout the Specific Plan neighborhood and were designed to be within walking distance of residences. In addition, residential streets were designed to encourage walking. Bicycle lanes were integrated within the streets and parks to permit safe cycling and access to public transit. The Specific Plan also identified many locations, where the steep topography makes streets discontinuous, where stairs would extend pedestrian access and provide overlook locations. An additional recreational pathway was designed in the Specific Plan to circumnavigate the hill, separate from the street system.[31]

The proposed project has been designed to conform with the recreational elements of the Communications Hill Specific Plan. The project proposes open space, predominantly consisting of the hillside slopes throughout the site (refer to Figure 5). The project will also dedicate approximately 1.3 acres of the site to the City for a public park. In addition, the project will also dedicate the land around the AT&T communication tower to the City for

[29] San Jose Police Department, 1996 Demographic Data Book, 1996.
[30] A rank of one indicates the highest number or rate of crime; a rank of 64 indicates the lowest number or rate of crime.
[31] A Specific Plan for Communications Hill, Prepared for the City of San Jose, Prepared by Solomon, Inc., Adopted by City Council April 7, 1992. p. 29.

park uses. The project proposes to provide stairs to connect the residential uses on lower portions of the hill with parks and recreational uses on the ridgetop portions of the site.

Potential impacts to parks and recreational facilities from the proposed land uses could result from increased demand and use of the facilities during weekdays and weekends by residents at the site. However, the project proposes to develop the recreational uses outlined in the Specific Plan. In addition, the project would be subject to the requirements of the City's Parkland Dedication Ordinance. For these reasons, the project would not result in impacts upon park and recreation facilities.

4. Schools

The Specific Plan designated a 10 acre parcel for the combined use of a school facility and playfields. This parcel is centrally located within the Specific Plan neighborhood, to the northeast of the AT&T communications tower. Although the specific requirements of both the school and playfields was not determined in the Specific Plan, it is anticipated that an elementary school serving the Franklin-McKinley School District will be needed. Communications Hill also lies in the Eastside Union High School District, and based on school district estimates, the adequacy of these facilities will need to be addressed in the short term.[32] The proposed project would contribute a fair share amount towards the development of the new school facilities identified in the Communications Hill Specific Plan. In addition, the project would be required to contribute to the State school impact fees. For these reasons, the project would not result in impacts upon school facilities.

Conclusion: **The proposed project would provide or contribute a fair share amount towards the development of all public service facilities identified in the Communications Hill Specific Plan. The project would not create the need for any new facilities beyond those planned for in the Specific Plan.**

[32] A Specific Plan for Communications Hill, Prepared for the City of San Jose, Prepared by Solomon, Inc., Adopted by City Council April 7, 1992. p. 67.

IV. CUMULATIVE IMPACTS

Cumulative impacts, as defined by CEQA, refer to two or more individual effects, which when combined, are considerable or which compound or increase other environmental impacts. Cumulative impacts may result from individually minor, but collectively significant projects taking place over a period of time. The CEQA Guidelines (Section 15130) state that an EIR should discuss cumulative impacts "when the project's incremental effect is cumulatively considerable". The discussion does not need to be in as great detail as is necessary for project impacts, but it is to be "guided by the standards of practicality and reasonableness". The purpose of the cumulative analysis is to allow decision makers to better understand the potential impacts which might result from approval of past, present and reasonably foreseeable future projects, in conjunction with the proposed project.

It should be noted that a cumulative impact analysis can only look at what is "reasonably foreseeable". Projects which are proposed now may actually be built in phases, or may not be built for many years. The actual date at which all of this development would be completed is unknown, but is assumed for the purposes of this analysis to occur within the next three years (by the year 2003). In the interest of ensuring that decision makers have an idea of what might be a worst case condition, the analysis below assumes that all of these projects would be built with no more than the infrastructure the projects themselves are proposing.

1. Cumulative Impacts

Based on the EIR prepared for the Communications Hill Specific Plan, and the analysis in this EIR, the cumulative impacts identified as being potentially significant include loss of open space, biological resources, traffic, air quality, and visual and aesthetic impacts.

Cumulative Loss of Open Space

The buildout of the project site and the remainder of Communications Hill would eliminate approximately 130 acres of currently vacant hillside land near SR 87. Although the project proposes approximately 78 acres of open space on the site, the combined development of the Specific Plan area with the proposed project, would result in a noticeable reduction in the amount of open space in the general vicinity. The cumulative impact was identified as a significant loss of open space in the Specific Plan EIR. The impact of this loss of open space would be partially mitigated by the incorporation of open space areas into the specific project designs.

The proposed project has been designed to conform with the recreational elements of the Communications Hill Specific Plan. The project proposes open space, predominantly consisting of the hillside slopes throughout the site (refer to Figure 5). The project will also dedicate approximately 1.3 acres of the site to the City for a public park. In addition, the project will dedicate the land around the AT&T communication tower to the City for park uses. Despite these proposed open space and parkland areas, the project would contribute to a change in open space character of the Communications Hill area, and therefore, is considered to significantly contribute to the cumulative loss of open space in the project area.

- **The project would contribute to the cumulative loss of open space. (Significant Cumulative Impact)**

Cumulative Loss of Santa Clara Valley Dudleya

As described previously, Santa Clara Valley dudleya occurs on the site, on numerous serpentine outcrops on the upper half of the south-facing slope of the main ridge and on the adjacent slopes of the side canyons. Grading for the project would result in the loss of all existing dudleya habitat on the slopes of the site, and the project would result in the removal of virtually all dudleya plants within the grading area of the site. Because this species is federally listed as endangered, the loss of these plants is considered a significant impact. The project, therefore, would contribute substantially to a significant cumulative impact to the species. Another known pending project that will impact the dudleya is the Calero Lake Estates project. The Cerro Plata project, located in the Silver Creek Residential Community in the East Foothills of San Jose recently removed 3,000 dudleya plants from the project development area and replanted the plants elsewhere on that site.

- **The project would contribute to the cumulative impacts to Santa Clara Valley dudleya. (Significant Cumulative Impact)**

Cumulative Loss of Bay Checkerspot Butterfly Habitat

As described in Section II, D, of this EIR, populations of the BCB have severely declined. The primary reasons for the decline of the butterfly are habitat loss, caused by urban and suburban development, and habitat degradation, caused by non-native plants displacing or reducing native food plants of the butterfly. In addition, drought and other extremes in weather conditions have been implicated as possible causes of the extirpation of some populations, particularly in areas where livestock may have overgrazed the habitat. Habitat loss has not only reduced the number of BCB populations, but has also increased the distances between remaining populations, which limits the opportunities for dispersal and gene flow.

The October 16, 2000 edition of the Federal Register has identified various properties in San Mateo and Santa Clara Counties that the USFWS proposes to designate as "critical habitat" for BCB (refer to Section II, D, of this report). These proposed habitat locations, totaling approximately 26,182 acres, include the currently undeveloped portions of Communications Hill, including the project site, as well as many other properties in the two Counties.

As discussed in Section II, D, of this report, the BCB surveys conducted for this project concluded that the site is not suitable habitat for BCB because, while there are plants on the site which do serve as food plants for BCB at other sites, the maturation and senescence cycles of the plants at this site are not compatible with the needs of BCB during various stages of their life cycle. As a result, the plants on the site are described as providing poor potential habitat for BCB. In addition, there have been numerous studies of the Communications Hill area with only one transient BCB ever found on the site. Based on the numerous surveys for BCB at Communications Hill over the past 60 years, there is no evidence of BCB occupation of the site. The biological report concludes that buildout of the project would result in a less-than-significant cumulative impact to BCB and its habitat due to the lack of a population of the species ever occurring on the site, and as this site would not contribute in any known way to the continued persistence of the species. Review of the USFWS proposed designation shows that the USFWS has not yet come to any actual conclusions about the site and is clearly not aware of the extensive research that has been conducted on the project site.

Because the site does not support any BCB, and there is no evidence that the site has ever supported BCB, the development of the project is not considered to contribute to the cumulative loss of potential BCB habitat in the region.

- **The project would not contribute to the cumulative loss of potential Bay Checkerspot Butterfly habitat. (Less than Significant Cumulative Impact)**

Cumulative Loss of Ruderal/Non-Native Grassland Habitats

The proposed project, in combination with other pending developments in the area, would contribute to the loss of ruderal habitats in the area. These habitats support a variety of plant and animal species. The loss of these habitats on the site would contribute to the cumulative reduction in the overall carrying capacity of the project area for a variety of common animals like Killdeer, Western Meadowlarks, Mourning Doves, California ground squirrels, western fence lizard, Botta's pocket gopher, and others. Predators such as gopher snakes, Red-tailed Hawks and other raptors, including Loggerhead Shrike, Northern Harrier, and White-tailed Kite which are special-status species, would also lose foraging habitat on the site.

Annual grasslands enhance the value of surrounding habitats by providing foraging and hunting opportunities for raptors that may nest in suitable tree habitat in the adjacent areas. The habitat value of the grassland area is not limited to raptors; many small birds, rodents and insects use this habitat type. The project site is dominated by disturbed non-native annual grasses, which are not considered to be sensitive habitats. It should be noted, however, that this habitat is declining throughout the State. The project would contribute to the cumulative reduction of such habitats in the area, and thereby contribute to a reduction in the overall variety and diversity of wildlife species present. The cumulative contribution to biological impacts from conversion of annual grassland to residential units and landscaping would be considered a significant impact.

- **The project would contribute to the loss of ruderal habitats and annual grasslands in the area, which would reduce the diversity of wildlife species present in the project site area, including potential special-status species. (Significant Cumulative Impact)**

Cumulative Impacts to California Tiger Salamander

If the on-going protocol-level surveys determine that California tiger salamander (CTS) are present in the ephemeral pond adjacent to Hillsdale Avenue, the proposed project will have a significant impact upon breeding and estivating CTS. Additionally, the project could result in potential impacts to estivating CTS from the quarry pond located northeast of the site. The project and other pending development on Communications Hill could result in significant cumulative impacts to California tiger salamander.

The project could contribute to cumulatively significant impacts to California tiger salamander. (Significant Cumulative Impact)

Cumulative Traffic Impacts

The traffic volumes under cumulative conditions were estimated using appropriate trip generation rates (as published in ITE *Trip Generation*) and trip distribution patterns, based on locations of complementary uses and existing travel patterns. Traffic volumes for cumulative conditions were estimated by applying an annual growth rate of two (2) percent

to existing traffic volumes, then adding trips associated with the pending developments (refer to Section II., F., Traffic and Circulation, of this EIR).

Cumulative Intersection Levels of Service

Intersection Levels of Service were calculated in order to evaluate the operating levels of the key intersections under cumulative conditions. The resulting levels of service for these intersections under cumulative conditions are presented in Table 18. The results of the LOS calculations show that four of the CMP study intersections would operate at LOS F during at least one of the peak hours under cumulative conditions.

- **The project would contribute to cumulatively significant intersection level of service impacts. (Significant Cumulative Impact)**

Table 18

CMP Intersection Levels of Service Under Future Growth Conditions

Intersection	Peak Hour	Count Date	Avg. Delay	LOS
Capitol Expwy and Monterey Rd (N)*	AM	36607	14.4	B
	PM	36607	12.2	B
Capitol Expwy and Monterey Rd (S)*	AM	3/22/00	37.3	D
	PM	3/22/00	9.5	B
Pearl Ave and Capitol Expwy*	AM	5/10/00	35.3	D
	PM	5/11/00	25.9	D
Almaden Expwy and Branham Ln*	AM	5/25/00	94.5	F
	PM	5/25/00	46.0	E
Almaden Expwy and Blossom Hill Rd*	AM	5/31/00	47.3	E
	PM	5/31/00	168.9	F
Almaden Expwy and SR 85 (N)*	AM	6/15/00	5.8	B
	PM	10/1/98	23.0	C
Almaden Exwpy and SR 85 (S)*	AM	6/14/00	15.1	C
	PM	10/1/98	198.7	F
SR 87 SB ramps and Capitol Expwy*/b/	AM	5/11/00	25.3	D
	PM	3/21/00	82.3	F
Snell Ave and Capitol Expwy*	AM	6/8/00	34.5	D
	PM	3/21/00	26.1	D

/a/ Background and project conditions include planned improvements.
/b/ The PM TRAFFIX coding was adjusted to get TRAFFIX to calculate an accurate level of service and intersection delay value.
* Denotes CMP intersection

Cumulative Freeway Segment Levels of Service

No additional freeway segments, beyond those identified under project buildout conditions, would degrade to LOS F with the addition of cumulative trips. Development of the project, however, would generate a substantial amount of traffic on these freeway segments and would contribute to cumulatively significant traffic congestion on the freeway segments.

The project would contribute to cumulatively significant freeway level of service impacts. (Significant Cumulative Impact)

Cumulative Air Quality Impacts

The Bay Area is experiencing continued growth in population and vehicle use that will affect the emission of regional pollutants such as reactive gases and nitrogen oxides. Current projections are that regional emissions of these pollutants will decrease in the future, despite cumulative growth in population and vehicle use, due to regional programs for reducing emissions that are in place or are currently being considered.

Under cumulative conditions, the project would contribute to air quality exceedances of local and regional air pollutants. BAAQMD guidance for CEQA documents provides that any project found to have a significant air quality impact would also be considered to have a significant cumulative impact. The proposed project would, therefore, have a significant cumulative impact on regional pollutants and regional air quality.

- **The project would significantly contribute to cumulative regional air quality impacts. (Significant Cumulative Impact)**

Cumulative Visual and Aesthetic Impacts

The EIR prepared for the Communications Hill Specific Plan concluded that, due to the highly visible nature of Communications Hill, the development of the Specific Plan would result in significant visual and aesthetic impacts. While the proposed project is only one portion of the Specific Plan area, approval of the proposed project would introduce new residential structures and an elevated water tank onto the currently vacant ridgetop area. The project would significantly contribute to the change in the visual character of the Communications Hill area. This would be considered a significant cumulative impact.

- **The project would contribute to significant changes in the visual and aesthetic character of the Communications Hill ridgetop area and would contribute to the loss of views of the vacant hillsides from surrounding areas. (Significant Cumulative Impact)**

Other Cumulative Impacts

Based upon an evaluation of available information on file with the cities of Santa Clara, San Jose, and Milpitas, it was concluded that cumulative impacts in the subject areas of land use, soils and geology, hydrology, cultural resources, hazardous materials, and services and utilities would not be significant.

Much of the development evaluated as "reasonably foreseeable" will take place over an extended period of time. The construction impacts of these cumulative projects will,

therefore, also be occurring over an extended time period. While construction of these projects would cause localized impacts as a result of noise and traffic effects, these impacts would not be significant.

- **The project would not result in significant cumulative land use, soils and geology, hydrology, cultural resources, hazardous materials, services and utilities, or construction impacts. (Less Than Significant Impacts)**

2. Mitigation for Cumulative Impacts

Significant cumulative impacts identified in the previous discussion include loss of open space, loss of ruderal/non-native grassland/serpentine habitats, impacts to California tiger salamander, traffic impacts, local and regional air quality impacts, and visual and aesthetic impacts. Potential mitigation for these impacts is discussed below.

The CEQA Guidelines discuss the fact that mitigation for cumulative impacts may be different than for individual project-specific impacts. The Guidelines state that:

> "...the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis." [Section 15130(c)]

Mitigation for Cumulative Loss of Open Space

As described previously, the project proposes to preserve approximately 78 acres of open space on the site (refer to Figure 5). While the project would include the preservation of a substantial portion of the site as open space, the proposed development would alter the nature of the ridgetop areas, and would be considered to contribute to a cumulative loss of open space. There is no feasible project mitigation to offset this impact.

Conclusion: **While the project would include the preservation of 78 acres of open space on the site, the development of the site would contribute to the cumulative loss of open space in the project vicinity. (Significant Unavoidable Cumulative Impact)**

Mitigation for Cumulative Impacts to Santa Clara Valley Dudleya

The project proposes a mitigation plan for the Santa Clara Valley dudleya that would be impacted by the project. The mitigation plan includes the relocation of existing plants and the propagation of seed in containers for future transplantation. The goal of the mitigation plan is to achieve no net loss of dudleya on the site. The mitigation plan includes a 10-year monitoring period, during which survival success criteria will be measured and the mitigation plan will be revised, as needed, to ensure an overall survival goal of 80% of the original population. With the proposed mitigation and monitoring plan, the project's contribution to cumulative impacts to the dudleya would be less than significant.

***Conclusion*:** **With the proposed mitigation, the project's contribution to a cumulative impact to dudleya would be less than significant. (Less than Significant Cumulative Impact with Mitigation)**

Mitigation for Cumulative Impacts to California Tiger Salamander

The project proposes a mitigation plan for impacts to California tiger salamander, if the on-going protocol level surveys determine that they are present on the site and would be impacted by the project. The mitigation plan includes the enhancement of on-site estivation habitat, and the possible protection of existing off-site CTS populations by fee-title or a conservation easement. With the proposed mitigation and monitoring plan, the project's contribution to cumulative impacts to California tiger salamander would be less than significant.

***Conclusion*: With the proposed mitigation, the project's contribution to a cumulative impact to California tiger salamander would be less than significant. (Less than Significant Cumulative Impact with Mitigation)**

Mitigation for Cumulative Traffic Impacts

Traffic congestion in Santa Clara County is a regional problem. Much of the congestion identified in this analysis is on regional transportation facilities, including freeways, and much of the existing congestion in this area is the result of through traffic movements. The Santa Clara County Congestion Management Plan identifies the preparation of deficiency plans as an appropriate response to significant impacts on regional facilities. The Congestion Management Agency is preparing a Countywide Deficiency Plan that will address many of the facilities in this area. Assuming that the Countywide Deficiency Plan will include a scenario for improving conditions on the regional facilities impacted by this cumulative traffic, participation in the implementation programs for the Countywide Deficiency Plan is the only mechanism identified which might mitigate some of the traffic impacts identified from cumulative development.

This implies that a programmatic approach to cumulative mitigation may be necessary. Participation in a Countywide Deficiency Plan would be such a type of mitigation program. The level of participation by new developments could be assessed based on a reasonable relationship to the individual development's contribution to cumulative traffic impacts.

***Conclusion:* Because there is no such mechanism in place to achieve mitigation of identified cumulative traffic impacts, the project would contribute to significant unavoidable cumulative impacts upon intersections and freeway segments. (Significant Unavoidable Cumulative Impact)**

Mitigation for Cumulative Air Quality Impacts

Local Air Quality Impacts

Local air quality impacts are primarily a result of traffic impacts in the project area. Improvements to reduce pollution sources will ultimately result in conformance with air quality standards.

Approval of all of the proposed developments would contribute to near-term air quality standard exceedances. This would be a significant unavoidable cumulative impact. If some of the pending development is not assumed within the Bay Area Clean Air Plan, cumulative air quality impacts may delay attainment of long-term air quality standards. This would be a significant unavoidable cumulative impact.

Regional Air Quality Impacts

Under cumulative conditions, the project would generate a substantial amount of regional pollutants, and therefore, would significantly contribute to air quality exceedances of regional pollutants.

***Conclusion:* The project would significantly contribute to cumulative local and regional air quality impacts. (Significant Unavoidable Cumulative Impact)**

Significant Unavoidable Cumulative Impacts

The project would result in the following significant unavoidable cumulative impacts:

- Loss of open space.
- Traffic impacts upon intersections and freeway segments.
- Loss of ruderal/non-native and serpentine grasslands.
- Regional air quality impacts.
- Visual and aesthetic impacts.

V. ALTERNATIVES TO THE PROPOSED PROJECT

CEQA requires that an EIR identify alternatives to a project as proposed. The CEQA Guidelines [Section 15126.6(a)] specify that the EIR identify alternatives which "would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project". The purpose of this section is to ascertain whether there are alternatives of design, scope or location which would substantially lessen the significant impacts, even if those alternatives "impede to some degree the attainment of the project objectives" or are more expensive [Section 15126.6(b)].

The Communications Hill Specific Plan EIR evaluated four types of alternatives to the Specific Plan. These included a No Project Alternative; an alternative urban structure; alternative locations; and an expanded quarry land use alternative. The Specific Plan EIR concluded that none of these alternatives was environmentally superior to the proposed Specific Plan for Communications Hill.

The significant unmitigated impacts identified from the proposed project are special-status plant species, freeway traffic, air quality, and visual and aesthetic impacts. Alternatives required by CEQA to be considered should, therefore, be capable of avoiding or lessening some or all of these potential impacts. This SEIR focuses on potential alternatives to the proposed project which would reduce or avoid the specific environmental impacts of the project.

Consideration of a "No Project" alternative is mandatory. In addition, logical alternatives which might reduce the significant impacts identified for the proposed project would include a reduced development alternative, an alternative that avoids biologically sensitive areas, development of the Berns/Ross Property only, and alternative location(s). A different location should be considered only if it is capable of avoiding or reducing some or all of the potentially significant impacts identified. Each of these alternatives is discussed below.

A. NO PROJECT ALTERNATIVE

The "No Project" Alternative consists of not constructing the proposed residential development and leaving the site in its present condition.

In the short-term, the No Project Alternative would completely avoid all of the identified impacts anticipated to occur as a result of the project. The increased traffic would not be generated by this site, and the incremental increases to local and regional air pollution would not occur. There would be no loss of open space, and no impacts to biological resources would occur. In addition, the No Project Alternative would avoid the project's significant visual and aesthetic impacts.

While the vehicular trips associated with the project would result in significant impacts upon regional pollutant emissions, the proposed development of housing at an infill location like the site may have a long-term favorable impact on area-wide air pollution, compared to no development, due to the need for housing in the Silicon Valley.

However, with approval and adoption of the Communications Hill Specific Plan in 1992, the project site was designated for residential development. While the No Project Alternative would cause the project site to remain in its existing state for the short-term, it is likely that another development project would be proposed on the site, in conformance with the City's General Plan and the Communications Hill Specific Plan. Therefore, because development has already been conceptually approved on the site, the No Project Alternative is not anticipated to result in permanent preservation of the site in its currently existing condition [refer to CEQA Guidelines Section 15126.6(e)].

The No Project Alternative does not meet any of the project objectives and is not consistent with the Communications Hill Specific Plan or the City of San Jose's General Plan. In addition, the No Project Alternative would not provide the benefits to the City resulting from development of infill residential uses on the site.

B. REDUCED DEVELOPMENT ALTERNATIVE

A design alternative to the project as presently proposed would be a smaller scale residential development, representing a less intense use of the site. One Reduced Development Alternative would be the development of approximately 478 units on the site. A conceptual grading plan design to accommodate this level of development is shown on Figure 16 and would include development on the Vieira property, the Berns/Ross property, and a portion of the MTA property west of the AT&T communications tower. This alternative would not include any units on the Long-Kwei portion of the site.

Because no units would be developed on the Long-Kwei portion of the site under this alternative, the development areas would be separated. The residential areas on the Vierra and MTA properties on the northwest portion of the site would be accessed by the Narvaez Avenue extension above the Helzer Ranch development. The residential areas on the Berns/Ross property would be accessed by Vistapark Drive off of Hillsdale Avenue. Under this alternative, emergency vehicle access would be provided from the Vistapark/Over The Hill Road area on the Berns/Ross property to the street grid near the AT&T communications tower (refer to Figure 16).

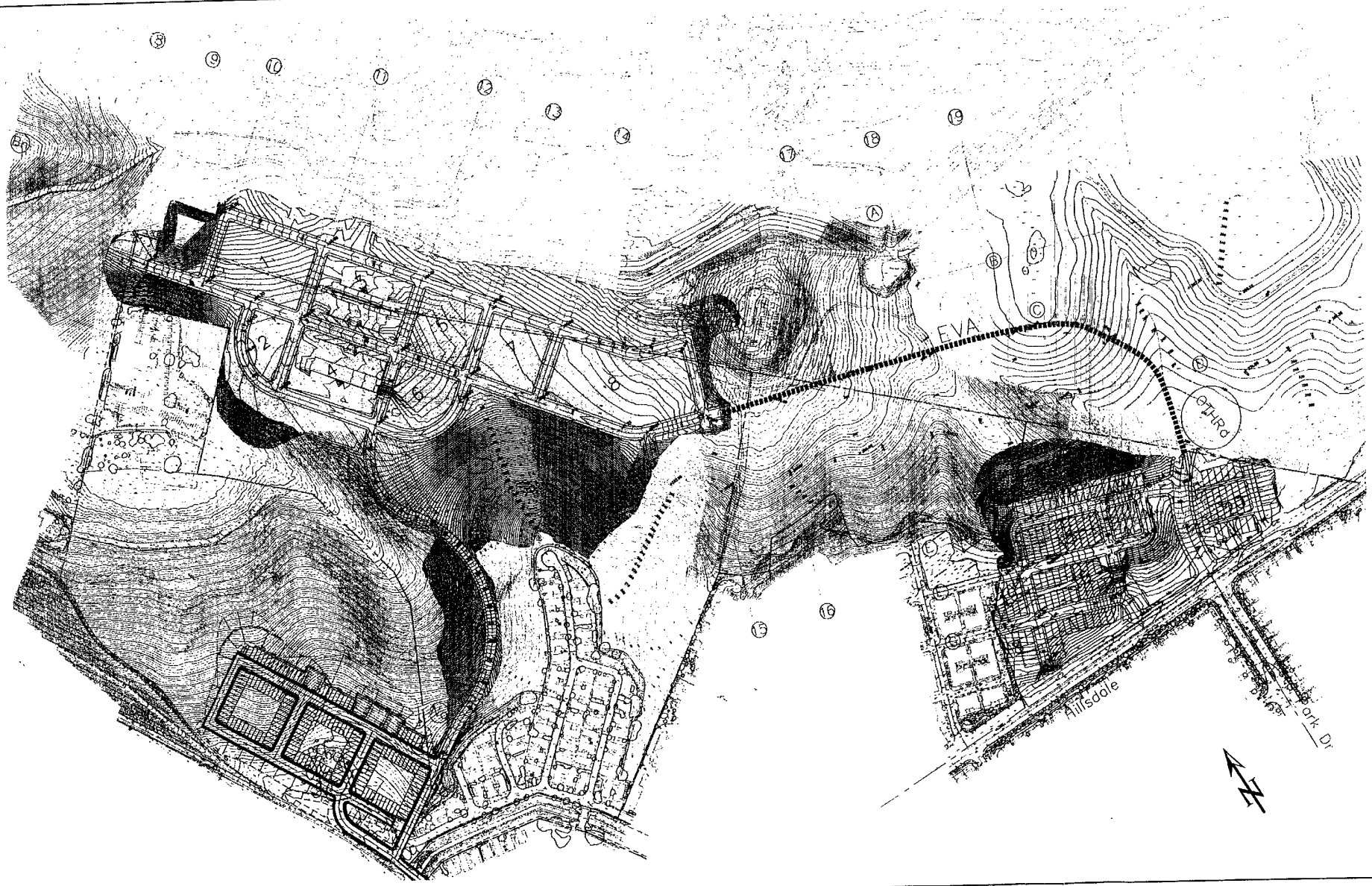
Potential for Mitigating Significant Impacts

Biological Resources

The Reduced Development Alternative could be constructed on less land than the proposed project. Specifically, the Long-Kwei property would remain undeveloped under this alternative. Therefore, some of the biologically sensitive areas on the Long-Kwei property, including some of the Santa Clara Valley dudleya habitat, could be avoided. For this reason, the Reduced Development Alternative could reduce impacts on dudleya, however, it would still result in significant impacts to Santa Clara Valley dudleya habitat elsewhere on the site, similar to the proposed project. Other biological resources impacts, including potential impacts to California tiger salamander and impacts to wetlands, would be similar to the proposed project.

Traffic Impacts

The Reduced Development Alternative would result in the generation of approximately 3,585 average daily trips, which is approximately 2,153 fewer trips than the proposed project. The Reduced Development Alternative would reduce the project's significant traffic impacts upon the SR 87 freeway segments, but it would not reduce these impacts to a less than significant level. This reduced level of development on the site would also reduce the significant traffic impacts at the intersection of the southbound SR 87 off-ramps and Capitol Expressway, but not to a less than significant level.



REDUCED DEVELOPMENT ALTERNATIVE

FIGURE 16

Air Quality Impacts

The Reduced Development Alternative would generate less traffic, as discussed above, however, the generation of approximately 3,750 average daily trips would still generate emissions above the thresholds of the Bay Area Air Quality Management District (BAAQMD). Therefore, this alternative would reduce but not avoid the project's significant long-term regional air quality impacts.

Visual and Aesthetic Impacts

While the Reduced Development Alternative would result in substantially less development on the hillsides on the Long-Kwei portion of the project site, this alternative would still require residential development along the ridgetop on the northwest portion of the site. Therefore, this alternative would still alter the views of the ridgetop from surrounding areas. For this reason, the Reduced Development Alternative would still result in a significant visual and aesthetic impact, although to a lesser degree than the proposed project.

Conclusion

The Reduced Development Alternative is environmentally superior to the proposed project, because it would result in less biological resources impacts than the proposed project, although these impacts would still be significant. Traffic, air quality, and visual impacts would all be reduced with the development of the Reduced Development Alternative, but would still be significant under this alternative scenario. The Reduced Development Alternative would produce less development than is called for in the Communications Hill Specific Plan, and would not complete the street grid on the ridgtop that is specified in the Specific Plan. Therefore, this alternative would not conform to the specifications of the Specific Plan or the City's General Plan. This alternative would not preclude future development on the other portions of the site, in conformance with the Specific Plan.

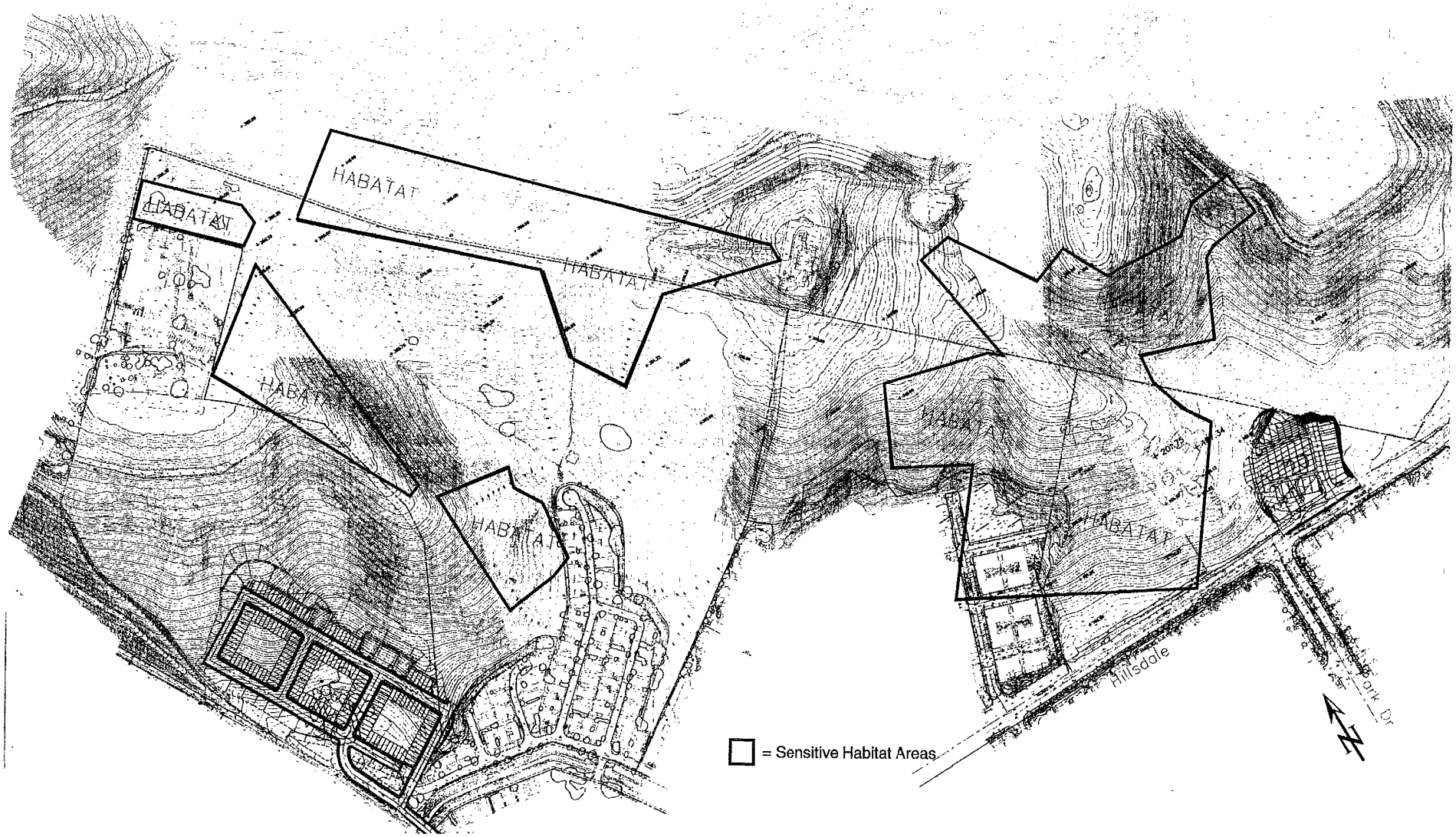
C. AVOIDANCE OF SENSITIVE BIOLOGICAL AREAS ALTERNATIVE

A possible alternative to the project as presently proposed would be a design which avoids the main biologically sensitive areas of the site, including the main areas of Santa Clara Valley Dudleya, and potential special-status wildlife species habitat areas. A conceptual grading plan to accommodate development on the site that avoids these biologically sensitive areas of the site is shown on Figure 17. Because of the site topography constraints, avoiding the environmentally sensitive areas of the site eliminates most of the proposed development. The only portion of the site that could feasibly be developed under this alternative would be the area of the Berns/Ross property east of Vistapark Drive. This alternative would allow for the development of approximately 30 residential units on the site, presuming that no California tiger salamander are present in the pond near Hillsdale Avenue.

Potential for Mitigating Significant Impacts

Biological Resources

This alternative could be constructed on substantially less land than the proposed project. This alternative would avoid development within the biologically sensitive areas of the site, and therefore, would likely avoid most or all of the project's significant biological resources impacts, including impacts on Santa Clara Valley dudleya, and individual raptors their nesting habitat. This alternative



AVOIDANCE OF ENVIRONMENTALLY SENSITIVE HABITATS ALTERNATIVE

FIGURE 17

presumes that no California tiger salamander are found to be supported in the pond near Hillsdale Avenue.

Traffic Impacts

This alternative would substantially reduce the number of traffic trips generated at the site. Under this alternative, only approximately 225 average daily trips would be generated. Therefore, this alternative would avoid the project's significant traffic impacts upon the SR 87 freeway segments. This alternative would also avoid the project's significant impacts upon the LOS of the southbound SR 87 ramps/Capitol Expressway intersection.

Air Quality Impacts

The Avoidance of Sensitive Areas Alternative would generate substantially less traffic, as discussed above, and therefore, would avoid the project's significant regional air quality impacts. Because this alternative would only allow for the development of 30 dwelling units, emissions generated by this alternative would be below the BAAQMD's thresholds of significance. The project's short-term air quality impacts during construction would also be reduced to a less than significant level under this alternative scenario.

Visual and Aesthetic Impacts

Because this alternative would only allow for the development of 30 dwelling units, and because those units would be located on the Berns/Ross property, near Hillsdale Avenue, the residential units would only be visible from Hillsdale Avenue. Therefore, this alternative would avoid the project's significant visual and aesthetic impacts resulting from development on the ridgetops of Communications Hill.

Conclusion

The Avoidance of Sensitive Biological Areas Alternative is environmentally superior to the proposed project, because it would avoid all of the project's significant impacts. However, this alternative would produce far less development than specified in the Communications Hill Specific Plan, and therefore, would not conform to the specifications of the Specific Plan or the City's General Plan. In addition, this alternative would not preclude future development on the other portions of the site, in conformance with the Specific Plan.

D. AVOIDANCE OF SANTA CLARA VALLEY DUDLEYA HABITAT ALTERNATIVE

Another possible alternative to the proposed project would be a design that avoids the Santa Clara Valley dudleya habitat on the site. A conceptual grading plan for this alternative and the locations of the main dudleya habitat areas on-site are shown on Figure 18. Similar to the Reduced Development Alternative discussed above, this alternative would not include development on the Long-Kwei portion of the site and part of the Vieira property portion of the site. This alternative would allow for the development of approximately 321 residential units on the site.

Because no units would be developed on the Long-Kwei portion of the site under this alternative, the development areas would be separated. The residential areas on the Vierra and MTA properties on the northwest portion of the site would be accessed by the Narvaez Avenue extension above the Helzer Ranch development. The residential areas on the Berns/Ross property would be accessed by Vistapark Drive off of Hillsdale Avenue.

DUDLEYA AVOIDANCE ALTERNATIVE

FIGURE 18

Potential for Mitigating Significant Impacts

Biological Resources

The Dudleya Avoidance Alternative would avoid the main areas of Santa Clara Valley dudleya habitat on-site, and therefore, would result in fewer impacts to Santa Clara Valley dudleya plants. The Long-Kwei property and part of the Vieira property would remain undeveloped under this alternative. Other biological resources impacts, including potential impacts to California tiger salamander and impacts to wetlands, would be similar to the proposed project. Impacts to grassland habitat would be somewhat less extensive than the project.

Traffic Impacts

The Dudleya Avoidance Alternative would generate fewer trips, approximately 2,408 daily trips, 3,330 fewer than the proposed project, and therefore, would reduce the project's significant traffic impacts upon the SR 87 freeway segments. However, it would not reduce these impacts to a less than significant level. This reduced level of development on the site would also reduce the project's significant traffic impacts at the intersection of the southbound SR 87 off-ramps and Capitol Expressway, but not to a less than significant level.

Air Quality Impacts

The Dudleya Avoidance Alternative would generate less traffic, as discussed above, however, the generation of approximately 2,408 average daily vehicle trips would still generate emissions above the thresholds of the Bay Area Air Quality Management District (BAAQMD). Therefore, this alternative would reduce but not avoid the project's significant long-term regional air quality impacts.

Visual and Aesthetic Impacts

While the Dudleya Avoidance Alternative would result in less development on the hillsides of the project site, this alternative would still require residential development along the ridgetop on the northwest portion of the site. This alternative would still alter the views of the ridgetop from surrounding areas. For this reason, the Dudleya Avoidance Alternative would still result in a significant visual and aesthetic impact.

Conclusion

The Dudleya Avoidance Alternative is environmentally superior to the proposed project, because it would avoid the project's significant impacts on Santa Clara Valley dudleya. Significant traffic and air quality impacts, as well as impacts to grassland habitat, would be reduced, but not avoided under this alternative. The visual impacts of this alternative would be similar to the proposed project. Because no development would occur within the central portion of the site under the Dudleya Avoidance Alternative, this alternative would produce less development than specified in the Communications Hill Specific Plan, and therefore, this alternative would not conform to the specifications of the Specific Plan or the City's General Plan.

E. DUDLEYA AVOIDANCE WITH MODIFIED STREET GRID ALTERNATIVE

Another possible alternative to the proposed project would be a design that avoids the Santa Clara Valley dudleya habitat on the site, while still providing development on the central portion of the site. A conceptual grading plan for this alternative and the locations of the main dudleya habitat areas on-site are shown on Figure 19. In order to develop the street grid pattern identified in the Specific Plan, the proposed grid blocks on the northwest portion of the site must be widened, to move the northernmost roadway further north. This allows the roadway to bypass the Santa Clara Valley dudleya habitat shown on Figure 19, and development of one block row of residential development would be feasible in the center of the site. However, avoiding development in the dudleya habitat area on the Long-Kwei property makes the development of the southernmost roadway (and associated utilities and drainage) and completion of the residential block on the Long-Kwei property infeasible. This alternative would allow the development of approximately 353 residential units on the site.

Potential for Mitigating Significant Impacts

Biological Resources

The Dudleya Avoidance with Modified Street Grid Alternative would avoid the main areas of Santa Clara Valley dudleya habitat on-site, and therefore, would result in fewer impacts to Santa Clara Valley dudleya plants. Impacts to grassland habitat would also be reduced somewhat under this alternative. However, other biological resources impacts, such as potential impacts to California tiger salamander and impacts to wetlands, would be similar to the proposed project.

Traffic Impacts

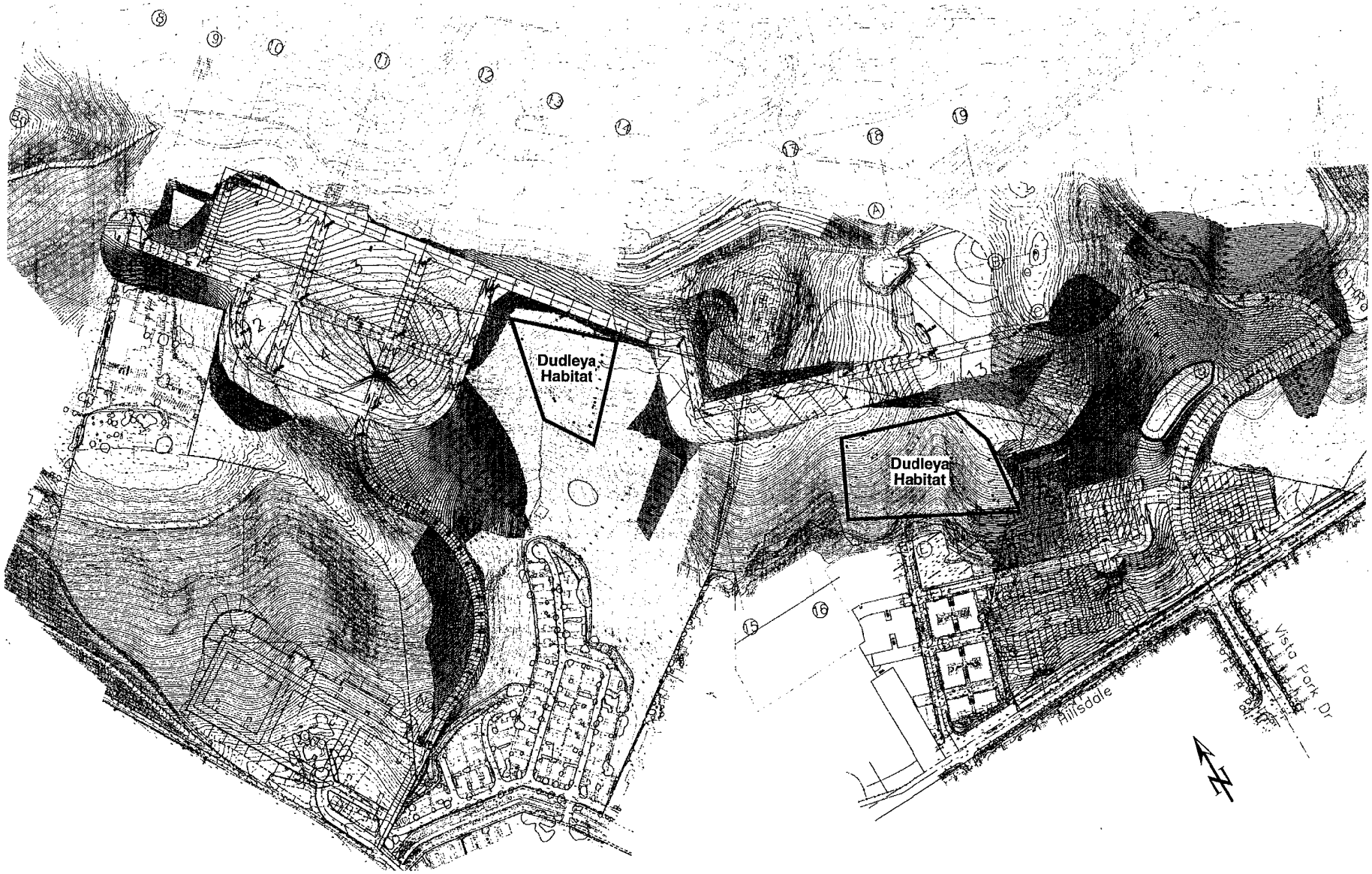
The Dudleya Avoidance with Modified Street Grid Alternative would generate 2,648 average daily trips, approximately 3,090 fewer than the proposed project, and therefore, would reduce the project's significant traffic impacts upon the SR 87 freeway segments. However, it would not reduce these impacts to a less than significant level. This reduced level of development on the site would also reduce the project's significant traffic impacts at the intersection of the southbound SR 87 off-ramps and Capitol Expressway, but not to a less than significant level.

Air Quality Impacts

The Dudleya Avoidance with Modified Street Grid Alternative would generate less traffic, as discussed above, however, the generation of approximately 2,648 average daily trips would still generate emissions above the thresholds of the Bay Area Air Quality Management District (BAAQMD). Therefore, this alternative would reduce but not avoid the project's significant long-term regional air quality impacts.

Visual and Aesthetic Impacts

While the Dudleya Avoidance with Modified Street Grid Alternative would result in somewhat less development on the hillsides of the project site, this alternative would still allow residential development along the ridgetop on the northwest portion of the site. This alternative would still alter the views of the ridgetop from surrounding areas. For this reason, the Dudleya Avoidance with Modified Street Grid Alternative would still result in a significant visual and aesthetic impact.



MODIFIED DUDLEYA AVOIDANCE ALTERNATIVE

FIGURE 19

Conclusion

The Dudleya Avoidance with Modified Street Grid Alternative is environmentally superior to the proposed project, because it would avoid the project's significant impacts on Santa Clara Valley dudleya. Significant traffic and air quality impacts would be reduced, but not avoided under this alternative. Visual impacts of this alternative would be similar to the proposed project. This alternative, however, would produce far less development and would not complete the street grid as specified in the Communications Hill Specific Plan. This alternative would not conform to the specifications of the Specific Plan or the City's General Plan.

F. DEVELOPMENT OF BERNS/ROSS PROPERTY ONLY

Another possible alternative to the proposed project would be to develop a smaller portion of the project site. A logical alternative would be to develop the Berns/Ross portion of the site only. A conceptual grading plan for this alternative is shown on Figure 20. Under this alternative, residential uses would only be located within the Berns/Ross portion of the site. This alternative would avoid development on the ridgetop portion of the site, and would allow for the development of approximately 131 residential units on the site.

Access to the development would be from Vistapark Drive and Hillsdale Avenue. The proposed access road off of Narvaez Avenue, above the Hezler Ranch development, would not be needed under this alternative.

Potential for Mitigating Significant Impacts

Biological Resources

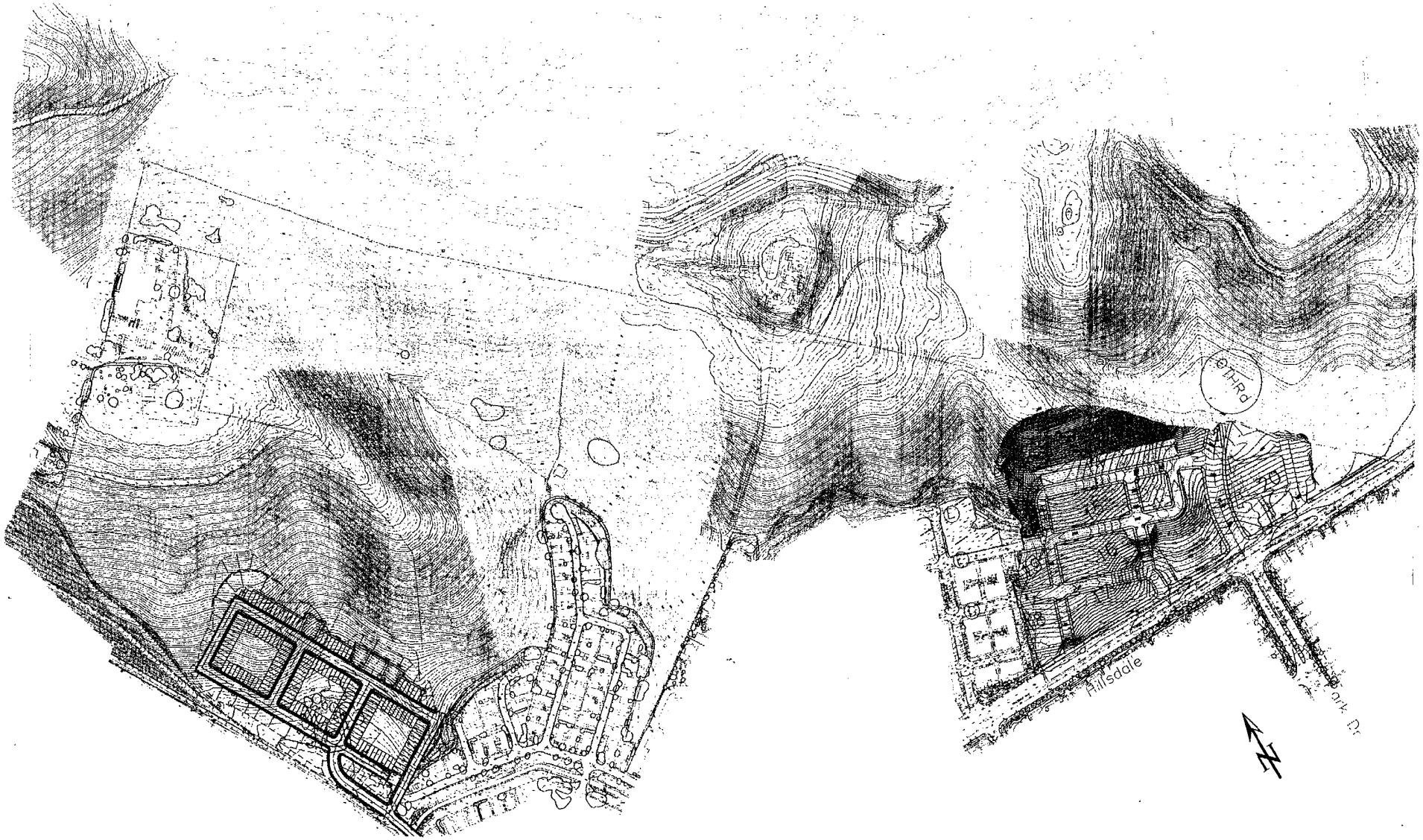
The Berns/Ross Alternative could be constructed on substantially less land than the proposed project. This alternative would avoid development within most of the biologically sensitive areas of the site, and therefore, would likely avoid most of the project's significant biological resources impacts, including impact to Santa Clara Valley dudleya, grassland habitat, and impacts to raptors. However, this alternative could still result in impacts to the wetland area on the southeast corner of the site, and potential impacts to California tiger salamander.

Traffic Impacts

This alternative would substantially reduce the number of traffic trips, and would generate approximately 983 average daily trips. Therefore, this alternative would avoid the project's significant traffic impacts upon the SR 87 freeway segments. This alternative would also reduce the project's significant impacts upon the LOS of the southbound SR 87 ramps/Capitol Expressway intersection, however, it is not certain whether these impacts would be less than significant.

Air Quality Impacts

The Berns/Ross Alternative would generate substantially less traffic, as discussed above, and would avoid the project's significant regional air quality impacts. Because this alternative would only allow for the development of 131 dwelling units, emissions generated by this alternative would be below the BAAQMD's thresholds for significance. In addition, the project's short-term air quality impacts during construction would also be reduced.



DEVELOPMENT ON BERNS/ROSS PROPERTY ONLY

FIGURE 20

Visual and Aesthetic Impacts

Development of 131 residential units on the Berns/Ross property would only be visible from Hillsdale Avenue. For this reason this alternative would avoid the project's significant visual and aesthetic impacts resulting from development on the ridgetops of Communications Hill.

Conclusion

The Berns/Ross Alternative is environmentally superior to the proposed project, because it would avoid most of the project's significant biological resources impacts and the significant unmitigated freeway traffic and air quality impacts. However, this alternative would produce far less development and would not complete the street grid as specified in the Communications Hill Specific Plan. This alternative would not conform to the specifications of the Specific Plan or the City's General Plan. The development of this alternative would involve leaving the Vieira and Long-Kwei properties in their current condition, although this alternative would not preclude future development of those properties in accordance with the Specific Plan.

G. ALTERNATIVE SITE

In order to identify an alternative site that might reasonably be considered to "feasibly accomplish most of the basic objectives of the project" and would also mitigate some or all of the significant impacts of the project, it was assumed that such a site would *ideally* have the following characteristics:

1) Be capable of supporting high density residential development;
2) Designated in the appropriate City's General Plan for residential uses;
3) An infill site located in the southerly part of Santa Clara County;
4) Physically able to accommodate a significant number of high-density attached single family uses; and
5) Conform to policy goals like those stated in the Communications Hill Specific Plan.

It is acknowledged that these characteristics, particularly the third characteristic, limit the potential geographic area of an alternative site. The last characteristic is identified as a result of the proposed project objectives, which include conforming to the overall design requirements outlined in the Communications Hill Specific Plan. Since the last characteristic is a project objective, and the CEQA Guidelines specify that an alternative need only "feasibly accomplish most of the basic purposes" of the project, the review of potential alternative locations was not limited to properties within the Specific Plan area.

There are vacant properties in the general vicinity of the project site, including the Pacific Rim, Syntex and Everlasting properties, which are adjacent sites located within the Evergreen area of eastern San Jose. In addition, there are vacant properties within the southern San Jose and Coyote Valley areas. The Lester property, which is located approximately 1.2 miles southeast of the project site and consists of approximately 300 acres of relatively flat grassland, is also undeveloped. However, these properties are currently designated for other uses, and their development with high-density residential uses is not desirable.

Another possible location alternative would be to develop the proposed project on another site within the Communications Hill Specific Plan area. However, this would preclude or limit the buildout of other land uses identified in the Specific Plan. Therefore, the development of the project on another

site within the Specific Plan area would not be consistent with the goals and land use designations of the Specific Plan.

Capitol Corridor

Approximately 47 acres of undeveloped land, designated by the General Plan for medium-high density residential uses (12-25 dwelling units per acre), is located along Capitol Avenue, between Hostetter Road and McKee Road in north San Jose. Approximately 800-900 residential units could be developed on the vacant land in conformance with the existing General Plan designation. It should be noted that these properties are currently under multiple ownerships, and putting this land together for development would take time. Assuming the land could be acquired, it could be developed with equivalent number of residential units as proposed on the site.

Potential for Mitigating Significant Impacts

Biological Resources

This alternative site would avoid development within most of the biologically sensitive areas of the site, and therefore, would likely avoid most of the project's significant biological resources impacts, including impact to Santa Clara Valley dudleya, and impacts to raptors. This alternative site would also reduce the project's impacts to seasonal wetlands.

Traffic Impacts

Because these properties are located near a future Light Rail Transit (LRT) line, and because the Capitol Corridor area is located in northern San Jose (and therefore, would create a "reverse commute"), the traffic impacts would be reduced under development of this site. This alternative would likely avoid the project's significant impacts upon the LOS of the southbound SR 87 ramps/Capitol Expressway intersection and upon the SR 87 freeway segments, however, it is not known whether development at this alternative site would create other significant intersection or freeway segment impacts.

Air Quality Impacts

This Alternative would generate the same number of traffic trip, as discussed above, but would create a reverse commute, and therefore, could reduce the project's significant regional air quality impacts, however, it is not known if these impacts would be reduced to a less than significant level. Short-term air quality impacts resulting from project construction would be similar to the proposed project.

Visual and Aesthetic Impacts

Because the proposed units would be located on flat lands in northern San Jose, those units would only be visible from the areas surrounding this alternative site. Therefore, this alternative would avoid the project's significant visual and aesthetic impacts resulting from development on the ridgetops of Communications Hill.

Conclusion

While development of the Capitol Corridor sites would avoid the project's significant biological resources and visual and aesthetic impacts, development on these properties is continuing or proposed in conformance with the City's General Plan goals and policies, separate from the

proposed project. It should be noted that, in response to regional housing needs, the City has undertaken a study to identify additional locations within San Jose for residential development, in addition to the sites already specified in the General Plan. The Capitol Corridor properties are currently being evaluated as part of the City's Housing Opportunities Study for re-designation at higher densities, appropriate along the future LRT corridor. The development of an alternative site would not preclude the need for additional housing in the Communications Hill area. Indeed, the overall goals for housing production contained in the General Plan require that both sites be developed in order to satisfy the City's housing goals. As a result, development of the Capitol Corridor site does not provide a true alternative to the project in terms of the City's objectives, but would in terms of the applicant's objectives to build on the site.

H. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines state that an EIR shall identify an environmentally superior alternative. Based on the above discussion, the environmentally superior alternative is the No Project Alternative, because all of the project's significant environmental impacts would be temporarily avoided. However, Section 15126.6(e)(2) states that "if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Therefore, for purposes of this project, the environmentally superior alternative would be the Avoidance of Sensitive Biological Areas Alternative.

VI. SIGNIFICANT UNAVOIDABLE IMPACTS

If the project is implemented, it would have the following significant unavoidable impacts:

- The project would result in a significant loss of open space.
- The project would significantly contribute to cumulative loss of open space impacts.
- The project would result in a significant unavoidable loss of raptor foraging habitat.
- Significant traffic impacts to three (3) directional freeway segments.
- The project would significantly contribute to cumulative impacts to three (3) directional freeway segments.
- The project would result in significant contribution to regional pollutants.
- The project would contribute to cumulative regional air quality impacts.
- The project would result in a significant change in the visual and aesthetic character of the site and would result in significant impacts to views of the project site.
- The project would significantly contribute to cumulative changes in the visual and aesthetic character of the vicinity and would contribute to the loss of views of open hillside and ridgetop areas.

VII. GROWTH-INDUCING IMPACTS OF THE PROJECT

The proposed project would include development of infrastructure with capacity to serve the proposed development. The proposed infrastructure improvements are within the existing urban service area, and would not connect to any area outside the existing urban service area. Some of the infrastructure (such as the detention pond, the water supply system, and the fire station) may facilitate subsequent growth within the Specific Plan area, but the growth is planned, infill development, consistent with City of San Jose goals and policies. The infrastructure and any growth it would serve were addressed in the program-level EIR prepared by the City of San Jose for the Communications Hill Specific Plan. In addition, individual development projects which may utilize the infrastructure would undergo individual, project-specific environmental review, such as this report.

The development of the project site, a vacant piece of land surrounded by urban development and planned urban development, does not create a precedent which might lead to excessive or unplanned growth outside of the existing urban service area.

Based upon the above discussion, it is concluded that the project would not have significant growth inducing impacts.

VIII. REFERENCES AND PERSONS CONTACTED

Armstrong, Tom, Vice President and Principal, HMH, Inc., personal and written communications, 2000.

Arnold, Richard, A., Entomological Consulting Services, Ltd., and Olberding Environmental, Inc. Report of Surveys Conducted for Special-Status Invertebrates at Communication Hill in San Jose, California, June 2000.

Aqua Science Engineers Inc., Phase I Environmental Site Assessment, APN 455-10-033, September 28, 1999.

Aqua Science Engineers Inc., Phase I Environmental Site Assessment, APN 455-10-05 and a portion of APN 455-9-49, September 28, 1999.

Ballanti, Don, Certified Consulting Meteorologist, Air Quality Impact Analysis for the Communications Hill Project, San Jose, 2000.

Basin Research Associates, Inc., Archaeological Evaluation Report, Communication Hill Project, June, 2000.

Black, Gary, Principal, Hexagon Transportation Consultants, personal and written communications, 2000.

Boyd, Darryl, Principal Planner, Department of Planning, Building and Code Enforcement, City of San Jose, personal and written communications, 2000.

Caporgno, Julie, Senior Planner, Department of Planning, Building and Code Enforcement, City of San Jose, personal communications, 1998-99.

City of San Jose, Department of Planning, San Jose 2020 General Plan, adopted August 16, 1994.

City of San Jose, Department of Planning, San Jose 2020 General Plan 1995 Text Supplement, December 5, 1995.

City of San Jose, Final Environmental Impact Report, General Plan Amendment, Communications Hill Specific Plan, Volumes I and II, October 1991.

City of San Jose Police Department, 1996 Demographic Data Book, 1996.

Elia, Jeffrey, Project Engineer, Hexagon Transportation Consultants, personal and written communications, 2000.

Federal Emergency Management Agency, Flood Insurance Rate Maps, City of San Jose, California, Santa Clara County, Community Panel Numbers: 060349 0031 D, 060349 0037 D, and 060349 0038 D. August 2, 1982.

Harza Consulting Engineers and Scientists, Preliminary Geologic and Geotechnical Investigation, Berns and Ross Property Development, San Jose, California, June 9, 1998.

Hashimoto, Ray, Planning Manager, HMH, Inc., personal and written communications, 2000.

Hexagon Transportation Consultants, Communications Hill Project, Transportation Impact Analysis, August 30, 2000.

Hill, Ward, Architectural Historian, Initial Assessment of 475 Hillsdale Avenue Residence, June 5, 2000.

Hill, Ward, Architectural Historian, personal communications, 2000.

Horwedel, Joseph, Deputy Director, Department of Planning, Building and Code Enforcement, City of San Jose, personal communications, 2000

Illingworth & Rodkin, Communications Hill EIR Noise Section, San Jose, California, July 2000.

Kostka, Stephen, McCutchen, Doyle, Brown & Enersen, LLP, personal and written communications, 2000.

Live Oak Associates, Inc., Bay Checkerspot Butterfly Historical Review on Communications Hill, October 2000.

Lowney Associates, Draft Geotechnical Investigation Vieira Property Residential Development, San Jose, California, November 11, 1999.

Lowney Associates, Geotechnical and Geologic Conditions Assessment, Communications Hill Development, San Jose, California, October 23, 2000.

Mahany, Paul, Assistant Engineer, HMH, Inc., personal and written communications, 2000.

Moniz, John, Associate Engineer, HMH, Inc., personal and written communications, 2000.

Olberding Environmental, Inc., Biological Inventory of the Communication Hill Study Area, San Jose, California, September, 2000.

Olberding Environmental, Inc., Communication Hill Tree Survey, May, 2000.

Olberding Environmental, Inc., Location of Areas Potentially Subject to U.S. Army Corps of Engineers Jurisdiction, Wetland/U.S. Waters Delineation for the Burns/Ross Property, Santa Clara County, California, January, 2000.

Olberding Environmental, Inc., Location of Areas Potentially Subject to U.S. Army Corps of Engineers Jurisdiction, Wetland/U.S. Waters Delineation for the Vieira Property, Santa Clara County, California, January, 2000.

Olberding Environmental, Inc. Santa Clara Valley Dudleya Mitigation/Monitoring Plan for the Communications Hill Development Project, October 2000.

San Francisco Bay Trail Maps, South Bay, Santa Clara County, Map 3, Winter, 1994.

Schaaf & Wheeler, Communication Hill Development Draft Hydrology Study, September, 2000.

Schaaf & Wheeler, Helzer Ranch Hydrology Study, October 26, 1998.

Terrasearch Inc., Geotechnical Engineers and Geologists, Geotechnical Investigation on Proposed Residential Development Communication Hill, APN 455-10-32,33, Hillsdale and Narvaez Avenues, San Jose, California, October 15, 1998.

U.S. Department of Agriculture, Soil Conservation Service, Soils of Santa Clara County, August 15, 1968.

Wheeler, Kirk, Principal, Schaaf & Wheeler, Consulting Civil Engineers, personal and written communications, 1999-2000.

IX. SEIR AUTHOR AND CONSULTANTS

AUTHORS

City of San Jose Department of Planning, Building and Code Enforcement

James Derryberry, Director
Kent Edens, Deputy Director
Julie Caporgno, Senior Planner
Darryl Boyd, Principal Planner

CONSULTANTS

HMH, Inc.
Civil Engineers/Planners/Surveyors
San Jose, California

Tom Armstrong, Vice President and Principal
Ray Hashimoto, Planning Manager
John Moniz, Associate Engineer
Paul Mahany, Assistant Engineer

David J. Powers & Associates, Inc.
Environmental Consultants and Planners
San Jose, California

David J. Powers, Principal
John H. Schwarz, Project Manager
Aura DeMare, Graphic Artist

Olberding Environmental, Inc.
Wetland Regulation and Permitting
San Jose, California

Jeff Olberding, President/Wetland Regulatory Scientist

Live Oak Associates, Inc.
Ecological Consultants
San Jose, California

Rick Hopkins, Principal

SEIR AUTHOR AND CONSULTANTS, cont.

Harza
Consulting Engineers and Scientists
Oakland, California
Ronald L. Bajuniemi, P.E., G.E., Chief Geotechnical Engineer
Kenneth Ferrone, P.E., R.G., C.E.G., Project Manager

Hexagon Transportation Consultants, Inc.
San Jose, California
Gary Black, Principal and Project Manager
Jeffrey Elia, Project Engineer

Donald Ballanti
Consulting Meteorologist
Donald Ballanti, Principal

Illingworth and Rodkin
Acoustical Consultants
Fairfax, California
Richard R. Illingworth, P.E.
Michael Thill, Associate

Lowney Associates
Environmental/Geotechnical/Engineering Services
Mountain View, California
John R. Dye, Senior Project Engineer and Quality Assurance Reviewer
Scott E. Fitinghoff, P.E., G.E., Senior Project Engineer
Thomas F. McCloskey, C.E.G., Senior Project Geologist

Schaaf & Wheeler
Consulting Civil Engineers
Santa Clara, California
Kirk Wheeler, Principal

Terrasearch, Inc.
Geotechnical Engineers and Geologists
San Jose, California
George Makdissy, P.E., Senior Engineer
Jerry S. Pascoe, P.E., Project Engineer

FIRST AMENDMENT TO THE
DRAFT SUPPLEMENTAL
ENVIRONMENTAL IMPACT REPORT

COMMUNICATIONS HILL

KAUFMAN & BROAD RESIDENTIAL PROJECT

99-088

Prepared by the
City of San Jose

February 2001

PDC99-083

PC AGENDA: 2-14-01
ITEM: 4.d.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: PLANNING COMMISSION **FROM:** James R. Derryberry

SUBJECT: SEE BELOW **DATE:** February 7, 2001

COUNCIL DISTRICT: 7

SUBJECT: FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT for a Planned Development Prezoning and Rezoning for property located at the north side of Hillsdale Avenue opposite the terminus of Vista Park Drive to allow development of up to 765 attached residential dwelling units on 129.2 gross acres, File No. PDC99-10-083.

BACKGROUND

This memo provides the Planning Commission with relevant information about the California Environmental Quality Act (CEQA) and City of San Jose requirements for Environmental Impact Reports (EIRs). This information is intended as background to facilitate the Planning Commission deliberations on the completeness of the document. This procedural information is not intended to displace any of the technical information included in the Supplemental Environmental Impact Report.

Role of the Planning Commission

The City of San Jose is the lead agency for the Communications Hill SEIR as defined by CEQA. The Planning Commission is designated by the City's Municipal Code as the decision making body for certification of Environmental Impact Reports. The Planning Commission is required to hold a public hearing to certify the Final SEIR. Upon conclusion of its certification hearing, the Planning Commission may find that the Final SEIR is complete and was prepared in compliance with CEQA. The Planning Commission's certification of an EIR can be appealed to the City Council by any person filing a written appeal with the Director of Planning, no later than 5:00 p.m. on the fifth calendar day following the certification of the EIR. If the Planning Commission does not certify the SEIR, it shall take no action, nor make any recommendation, with regard to the project.

The Final SEIR consists of the Draft SEIR, the First Amendment (Response to Comments), and any subsequent amendments to the DSEIR. There is an Addendum to the First Amendment attached to this staff report. It consists of two technical corrections to the DSEIR. The First Amendment to the DSEIR provides the City's response to the public comments received on the DSEIR, and includes text revisions to the DSEIR. The City as the lead agency is required by CEQA to provide a written response to all timely comments. CEQA requires that the Response to Comments be provided to public agencies a minimum of 10 days prior to certification of the SEIR.

99-083

Proposed Project

The project proposes the development of up to 765 attached residential dwelling units, consisting of townhouses, row houses, condominiums and other medium to high-density attached dwellings on the site consistent with the Communications Hill Specific Plan. The project includes the dedication of 1.3 acres of the site for a public park. The project will also construct an approximately 6,000 square foot urban style fire station. Most of the hillside slopes will be preserved as open space. Construction of the proposed project and required infrastructure requires substantial grading

Project History

The primary land uses that apply to the site are contained in the Communications Hill Specific Plan, adopted by the City Council in 1992. The Communications Hill Specific Plan EIR (October 1991) evaluated, at a programmatic level, the potential environmental impacts of a high-density residential development such as the one proposed. That EIR states that subsequent environmental review will be necessary for future specific development proposals. This SEIR has been prepared to provide the subsequent environmental review for the proposed project. A brief history of prior policy decisions and environmental review is included in the Preface to the DSEIR.

ANALYSIS

The analysis consists of CEQA EIR requirements, and a brief summary of the significant unavoidable impacts, mitigation measures included in the project, and alternatives.

CEQA EIR Requirements

An EIR is an informational document to inform public agency decision-makers and the public of the significant (physical) environmental effects of a project, identify possible ways to mitigate the significant effects on the environment, and describe reasonable alternatives to the project. An EIR is an informational document, not an action document. CEQA requires the lead agency to make a good faith effort at a reasonable and full disclosure. CEQA requires public agencies to follow an environmental review process intended to ensure that decision-makers have considered environmental concerns in their decision-making. Approval of a project with significant unavoidable impacts would require the adoption of a statement of overriding considerations and appropriate findings that outline why a project's benefits outweigh its environmental costs.

CEQA focuses very much on a specific project and its direct effects that are attributable to the project being proposed and studied. CEQA requires a lead agency to study what the effects of the project being proposed by the applicant. The primary concern of an EIR is with the physical changes to the environment as a direct result of the proposed project. This EIR, which is for a Planned Development rezoning, is focused on an individual project and is not intended or required to be an examination of the underlying principles of the City's 2020 General Plan.

Recirculation Thresholds

As a general rule, EIRs are circulated for one round of public review and comment. CEQA anticipates that, in response to comments on the Draft EIR, a Final EIR will provide additional information that amplifies or augments the discussion and analyses in the Draft EIR. The addition of new information to an EIR after it has been circulated for comment will only trigger recirculation in very limited circumstances in which the new information shows that:

(1) a new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented;
(2) a substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance;
(3) a feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it; or
(4) the draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

Review of Response to Comments

CEQA requires that the lead agency shall provide a written response to a public agency on comments, which conform to the requirements of CEQA, made by that agency. CEQA requires the response to comments to be provided to the public agency at least 10 days prior to certifying an EIR. It is important to note that this requirement applies only to the comments submitted by that particular public agency. The 10 days is intended to allow a public agency sufficient time to review the responses to the comments submitted by that individual public agency. CEQA only requires the lead agency to provide the individual response to the individual commenting agency, it does not require that all of the responses to all of the comments be distributed to every commenting public agency. The City of San Jose, however, does provide the complete set of responses to comments in the First Amendment as standard practice. The First Amendment together with the Draft Supplemental EIR constitutes the Final SEIR.

None of the recirculation thresholds is met in this case. Any new information that has been added to the Final SEIR clarifies and amplifies or makes minor modifications to discussion and analysis in the Draft SEIR. The fact that comments requested that additional information be provided on various topics, and that the Final SEIR responds by providing additional information, does not trigger recirculation. The City has endeavored to evaluate and respond to comments by providing a reasoned analysis, which adequately addresses the environmental concerns raised in the comments received.

99-083

Significant Unavoidable Impacts

The proposed project would result in several significant unavoidable impacts. The City Council would be required to adopt a Statement of Overriding Considerations, with appropriate findings that outline why the project's benefits outweigh its environmental costs, prior to approval of the project. The specific impacts that have been identified as significant unavoidable include the following.

Land Use

Development of the project would result in a significant impact to mineral resources, as identified in the Specific Plan EIR.

Construction of the proposed project would result in the same significant loss of open space impact as identified in the Specific Plan EIR.

Transportation and Circulation

The project would add greater than one percent of the capacity to three freeway segments operating as LOS F, and therefore, would result in significant LOS impacts on these three freeway segments.

Air Quality

Project emissions of regional pollutants would exceed BAAQMD thresholds for two regional pollutants, and therefore, would have a significant impact on regional air quality.

Visual and Aesthetics

This project would result in significant visual and aesthetic impacts upon views of the project site from nearby and distant areas.

Grading for the proposed project would result in significant visual and aesthetic impacts.

Cumulative Impacts

The project would contribute to cumulatively significant intersection and freeway level of service impacts.

The project would significantly contribute to cumulative regional air quality impacts.

The project would contribute to significant changes in the visual and aesthetic character of the Communications Hill ridgetop area and to the loss of views of the vacant hillsides from surrounding areas.

The project would contribute to the cumulative loss of open space.

The project would contribute to the loss of ruderal habitats and annual grasslands in the area, which would contribute to a reduction in the diversity of wildlife species present in the project site area, including special-status species.

Mitigation Measures Included in the Project

The project includes mitigation measures for the following environmental impact areas, which would reduce significant impacts to a less than significant level.

99-083

- Land Use
- Geology
- Drainage, Flooding and Water Quality
- Biological Resources
- Hazardous Materials
- Traffic
- Air Quality
- Noise
- Cultural Resources
- Visual and Aesthetics
- Utilities
- Cumulative

Alternatives to the Project

CEQA requires that all EIRs analyze a range of alternatives in addition to an analysis of the proposed project. The alternatives identified in the EIR should feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project. The purpose of this analysis is to ascertain whether there are alternatives of design, or scope which substantially lessen the significant impacts.

The Communications Hill SEIR is for a project that will implement the adopted San Jose 2020 General Plan Land Use/Transportation Diagram designation of Communications Hill Planned Residential Community. As such, the alternatives section of the SEIR primarily focuses on site design, development intensity and infrastructure alternatives in conformance with the CEQA requirement to focus on the project specific effects which are peculiar to the project or site. Other urban land uses would result in the same environmental impacts from the physical construction of development of the site.

The Communications Hill SEIR considers seven alternatives to the proposed project. The environmentally superior alternative would be the Avoidance of Sensitive Biological Areas Alternative.

- *No Project Alternative*
- *Reduced Development*
- *Avoidance of Sensitive Biological Areas Alternative*
- *Avoidance of Santa Clara Valley Dudleya Alternative*
- *Dudleya Avoidance with Modified Street Grid Alternative*
- *Development of Berns/Ross Property Only*
- *Alternative Site*

99-083

Relationship of EIR to the Project

Planning Commission action on the SEIR does not predetermine their decision on the project. If the Planning Commission certifies the SEIR as complete and in compliance with the

requirements of CEQA, it may recommend approval or denial of the project based on its evaluation of the project.

Conclusion

The Communications Hill SFSEIR meets the requirements of CEQA by disclosing the significant environmental effects of the project, identifying possible ways to mitigate the significant effects and describing reasonable alternatives to the project. The FSEIR complies with the substantive and procedural requirements of the CEQA guidelines for projects of regional significance. The FSEIR is adequate, complete and in compliance with the requirements of CEQA.

PUBLIC OUTREACH

A significant aspect of the EIR process is the notification and involvement of various public agencies and organizations in the preparation. This notification begins prior to the preparation of the DSEIR with the Notice of Preparation of SEIR, which was circulated on September 1, 2000. The DSEIR was circulated on November 15, 2000, with the public comment period ending on December 29, 2000. The DSEIR comment period was extended at the request of the public due to the holidays. A Notice of Availability of the DSEIR was published in the San Jose Mercury newspaper on November 15, 2000. The DSEIR document was also posted on the Department's web page. A notice of the Planning Commission public hearing was distributed to the owners and tenants of all properties located within 1,000 feet of the project site. In addition, notices were also sent to all individuals who previously requested them and all Agencies who had received earlier referrals of the DSEIR or project plans. The Public Hearing notice was also published in the San Jose Mercury News.

RECOMMENDATION

The issue before the Planning Commission is the adequacy of the Supplemental Environmental Impact Report. The Supplemental Environmental Impact Report represents the City's independent judgment regarding environmental impacts, mitigation measures and alternatives to the project.

Staff recommends that the Planning Commission certify the Communications Hill Kaufman and Broad Residential Project Final Supplemental EIR complete as amended, and in conformance with CEQA.

for James R. Derryberry, Director
Planning, Building and Code Enforcement

C: Mark Dawson, Kaufman & Broad, 2201 Walnut Avenue, Suite 150, Fremont, CA 94538

ADDENDUM TO THE FIRST AMENDMENT TO THE DRAFT SUPPLEMENTAL EIR FOR THE COMMUNICATIONS HILL KAUFMAN & BROAD RESIDENTIAL PROJECT

The following section contains amendments to Section IV, **Revisions to the Text of the DSEIR**, of the First Amendment to the Draft Supplemental Environmental Impact Report, Communications Hill Kaufman & Broad Residential Project, dated February 2001. Revised or new language is double-underlined. All deletions are shown ~~with a double line through the text~~.

Page 78 Section II, D. Biological Resources

REVISE the second bullet of the mitigation measures under the heading **Loss of Ruderal/Non-Native and Serpentine Grassland Habitats** as follows:

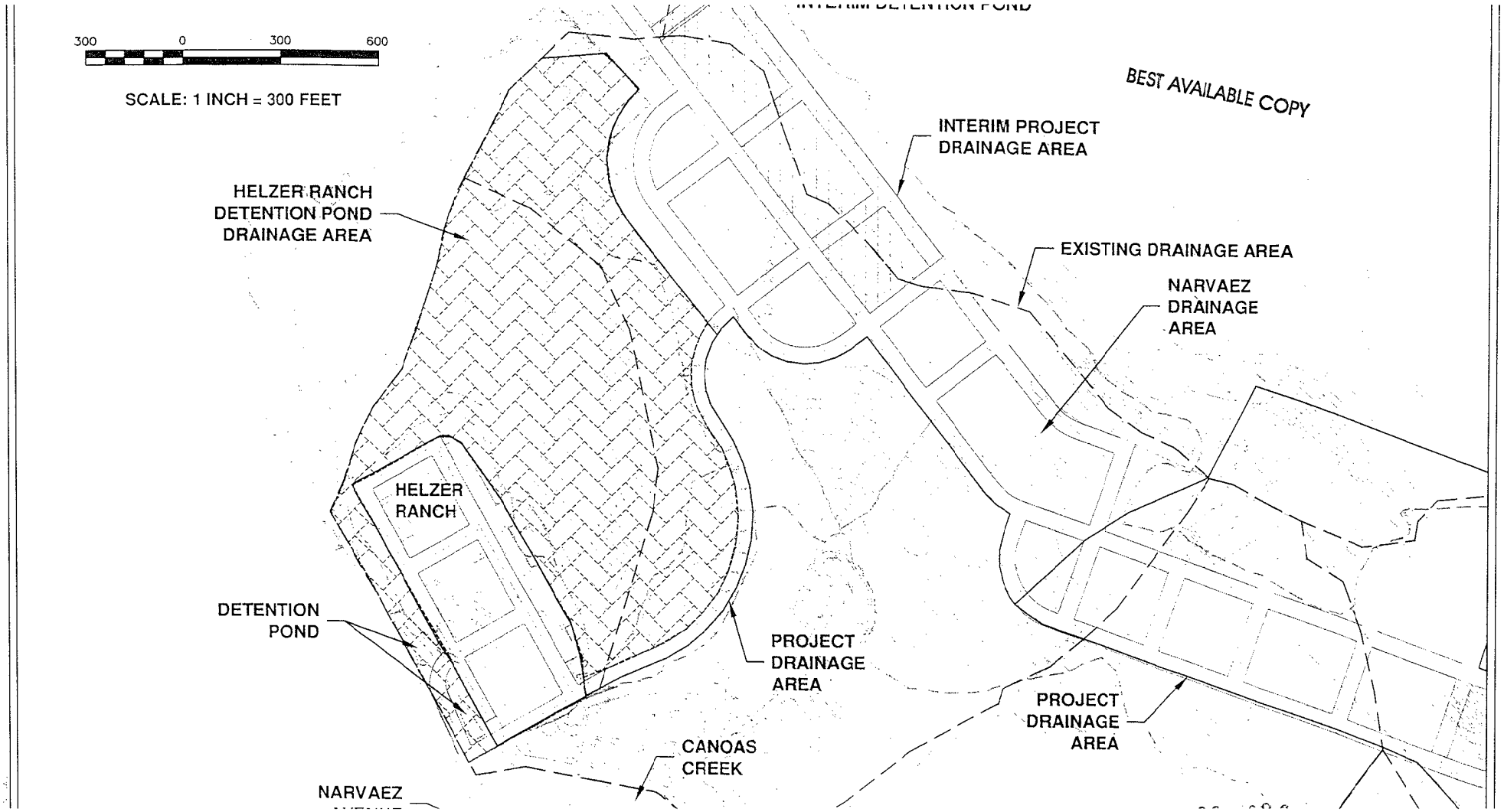
- Approximately 20.8 acres of the 129.2-acre project site will not be graded by the project. The ungraded area is comprised of 13.9 acres of serpentinite soils and 6.9 areas of non-serpentinite soils. ~~All~~ Approximately 12.5 acres of the non-disturbed grassland shall be preserved and placed into a conservation easement preventing future development or active use of those areas. This action would allow existing conditions to remain in perpetuity. Post-grading, an additional 33.4 acres of disturbed area would be planted with grasses and maintained as open space. This area would include the public cross-county trail, the stairways, and the permanent detention basin. With the exception of the public uses, this area would be placed into a conservation easement preventing future development, consistent with the Communications Hill Specific Plan.

Page 12 Communication Hill Development Hydrology Report, dated January 2001.

REPLACE Figure 2 with the attached Figure 2, which shows the location of the interim detention pond.

99-083

FIGURE 2


300
0
300
600
SCALE: 1 INCH = 300 FEET
BEST AVAILABLE COPY
INTERIM PROJECT DRAINAGE AREA
HELZER RANCH DETENTION POND DRAINAGE AREA
EXISTING DRAINAGE AREA
NARVAEZ DRAINAGE AREA
HELZER RANCH
DETENTION POND
PROJECT DRAINAGE AREA
PROJECT DRAINAGE AREA
CANOAS CREEK
NARVAEZ

PREFACE

This document, together with the Draft Supplemental Environmental Impact Report (DSEIR) for the Communications Hill Kaufman & Broad Residential Project, constitutes the Final Supplemental Environmental Impact Report (FSEIR) for the proposed project. The Final SEIR is an informational document prepared by the Lead Agency that must be considered by the decision-makers before approving the proposed project (CEQA Guidelines Section 15090). The California Environmental Quality Act (CEQA) Guidelines (Section 15132) specify that a Final EIR (or, in this case Final SEIR) shall consist of the following:

- The Draft EIR or a revision of the draft.
- Comments and recommendations received on the Draft EIR either verbatim or in a summary.
- A list of persons, organizations, and public agencies commenting on the Draft EIR.
- The responses of the Lead Agency to the significant environmental points raised in the review and consultation process.
- Any other information added by the Lead Agency.

In conformance with the CEQA Guidelines, the FSEIR provides objective information regarding the environmental consequence of the proposed project. The FSEIR also examines mitigation measures and alternatives to the project intended to reduce or eliminate significant environmental impacts. The FSEIR is used by the City and other Responsible Agencies in making decisions regarding the project. The CEQA Guidelines require that, while the information in the FEIR does not control the agency's ultimate discretion on the project, the agency must respond to each significant effect identified in the DSEIR by making written findings for each of those significant effects. According to the CEQA Guidelines (§15091), no public agency shall approve or carry out a project for which an environmental impact report has been certified which identifies one or more significant environmental of the project, unless the public agency makes one or more written findings for each of those significant effects. According to the State Public Resources Code (Section 21081), no public agency shall approve or carry out a project for which an environmental impact report has been certified which identifies one or more significant effects on the environment that would occur if the project is approved or carried out unless *both* of the following occur:

a) The public agency makes one or more of the following findings with respect to each significant effect:

   1) Changes or alterations have been required in, or incorporated into, the project, which avoid or substantially lessen the significant environmental effects as identified in the final EIR.

   2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been by such other agency or can and should be adopted by such other agency.

   3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities of highly trained workers, make infeasible the mitigation measures or alternatives identified in the final EIR.

99-083

b) With respect to significant effects which were subject to a finding under paragraph (3) of subdivision (a), the public agency finds that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment.

In accordance with the CEQA Guidelines, the Final EIR will be made available to the public ten days prior to the EIR certification hearing.

All documents referenced in this SEIR are available for public review at the office of the Department of City Planning, Building, and Code Enforcement, 801 North First Street, Room 400, San Jose, California, on weekdays during normal business hours.

99-083

TABLE OF CONTENTS

COMMUNICATIONS HILL KAUFMAN & BROAD RESIDENTIAL PROJECT
FIRST AMENDMENT TO THE
DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

Page

I. **LIST OF AGENCIES AND INDIVIDUALS RECEIVING THE DRAFT SEIR** 4

II. **ORGANIZATIONS AND INDIVIDUALS COMMENTING ON THE DRAFT SEIR** ... 5

III. **RESPONSES TO WRITTEN COMMENTS ON THE DRAFT SEIR** 6

IV. **REVISIONS TO THE TEXT OF THE DRAFT SEIR** 35

V. **COPIES OF COMMENTS RECEIVED ON THE DRAFT SEIR**

99 - 083

I. LIST OF AGENCIES AND INDIVIDUALS RECEIVING THE DRAFT SEIR

Federal and State Agencies

U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
California Air Resources Board
California Archaeological Information Center, Sonoma State University
California Department of Fish and Game
California Department of Parks and Recreation
California Department of Transportation, District 4
California Office of Historic Preservation
Native American Heritage Commission
State Clearinghouse
State Water Resources Board

Regional and Local Agencies

Association of Bay Area Governments
Bay Area Air Quality Management District
City of Campbell
City of Santa Clara
County of Santa Clara, Local Agency Formation Commission (LAFCO)
County of Santa Clara, Planning Department
County of Santa Clara, Roads and Airports Department
Metropolitan Transportation Commission
Regional Water Quality Control Board
Santa Clara Valley Transportation Agency
Santa Clara Valley Water District

Local Organizations and Individuals

Audubon Society
California Native Plant Society
City of San Jose, Main Library
Committee for Green Foothills
East Side Union High School District
Evergreen Resource Conservation District
Franklin-McKinley High School
Greenbelt Alliance
Pacific Bell
Pacific Gas and Electric
San Jose Water Company
Sierra Club
Union Pacific Railroad

99-083

II. LIST OF AGENCIES AND INDIVIDUALS COMMENTING ON THE DRAFT SEIR

Presented below is a list of agencies, organizations, and individuals commenting on the Draft SEIR. The table below also identifies the date of the letter received, and whether the comments submitted require substantive responses.

Comment Received From	Date of Letter	Response Required
Federal and State Agencies		
A. United States Department of the Interior, Fish and Wildlife Service	1/16/01	Yes
B. State of California Department of Fish and Game	12/27/00	Yes
C. State of California Governor's Office of Planning and Research, State Clearinghouse	1/2/01	No
D. California Historical Resources Information System, Northwest Information Center	12/13/00	No
E. State of California Department of Transportation	1/8/01	Yes
Regional and Local Agencies		
F. Metropolitan Transportation Commission	11/28/00	Yes
G. Santa Clara Valley Transportation Authority	12/29/00	Yes
H. Santa Clara Valley Water District	12/29/00	Yes
I. Santa Clara Valley Roads and Airports Department	1/8/01	Yes
Organizations		
J. Santa Clara Valley Audubon Society	12/28/00	Yes

99-083

III. RESPONSES TO COMMENTS RECEIVED ON THE DRAFT SEIR

This section includes all of the comments contained in the letters received during the 45-day review period advertised for this DEIR and responses to those comments. The comments are organized under headings containing the source of the letter and its date. The letters have been grouped into the following categories.

- Federal and State Agencies
- Regional and Local Agencies
- Organizations
- Individuals

The specific comments have been copied from the letters and presented as "Comment" with its response directly following. Copies of the actual letters received, and any attachments to those letters, are found in their entirety in Section V., of this First Amendment to the DSEIR.

FEDERAL AND STATE AGENCIES

A. UNITED STATES DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE, JANUARY 16, 2001

Comment 1: At issue are the potential adverse effects of the proposed project on the threatened bay checkerspot butterfly (*Euphydryas editha bayensis*); threatened California red-legged *frog (Rana aurora draytonii*), candidate California tiger salamander (*Ambystoma californiense*); endangered Santa Clara Valley dudleya (*Dudleya setchelli* ssp. *peramoenus*); and raptors. On October 16, 2000, the Service proposed to designate Communications Hill, including the proposed project site, as critical habitat for the threatened bay checkerspot butterfly (Federal Register 65:61218-61244) because it contains the primary constituent elements that are essential for the primary needs of the animal, including foraging, sheltering, breeding, maturation, and dispersal.

We have previously provided comments to the City of San Jose and the County of Santa Clara regarding projects on Communications Hill including, but not limited to letters dated November 4, 1991 (Proposed General Plan Amendment for Communication Hill Specific Plan, SFWO file 1-1-92-TA-068); February 21, 1992 (first Amendment to the Communications Hill Specific Plan, SFWO file 1-1-92-TA-395); October 3, 1993 (Proposed Negative Declaration for the Azevedo Quarry, SFWO file 1-1-TA-94-7); and October 21, 1993 (Draft Environmental Impact Report on the San Jose 2020 General Plan, SFWO file 1-1-TA-94-74);

Section 9 of the Act prohibits the take of any federally listed animal species by any person subject to the jurisdiction of the United States. As defined in the Act, take is defined as "....to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm has been further defined to include habitat destruction when it injures or kills a listed species by interfering with essential behavioral patterns, such as breeding, foraging, or resting. Thus, not only are the bay checkerspot butterfly and California red-legged frog protected from such activities as collecting and hunting, but also from actions that damage or destroy their habitat. The Act prohibits activities that "...remove and reduce to possession any listed plant from areas under Federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage or destroy any such species on any

99-083

other area in knowing violation of any law or regulation of any State or in the course of any violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law." The term "person" is defined as "...an individual, corporation, partnership, trust association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal government, of any State, municipality, or political subdivision of a State, or any other entity subject to the jurisdiction of the United States."

Take incidental to an otherwise lawful activity may be authorized by one of two procedures. If a Federal agency is involved with the permitting, funding, or carrying out of the project and a listed species is going to be adversely affected, then initiation of formal consultation between that agency and the Service pursuant to section 7 of the Act is required. Such consultation would result in a biological opinion addressing the anticipated effects of the project to the listed species and may authorize a limited level of incidental take. If a Federal agency is not involved in the project, and federally listed species may be taken as part of the project, then an incidental take permit pursuant to section 10(a)(1)(B) of the Act should be obtained. The Service may issue such a permit upon completion of a satisfactory conservation plan for the listed species that would be taken by the project.

The SDEIR appears to downplay or misinterpret the adverse impacts on federally listed species and wildlife species that may result from the proposed project as well as the adequacy of proposed mitigation. Our specific comments on the SDEIR are as follows.

> **Response 1:** This introductory comment does not explain the reason(s) why the USFWS feels that the SDEIR downplays or misinterprets the adverse impacts on federally listed species and wildlife species. The City of San Jose disagrees with this characterization of the SDEIR. The responses to specific comments are presented below.

Comment 2: Threatened bay checkerspot butterfly:
The Service does not concur with the assertion in the SDEIR that the bay checkerspot butterfly does not inhabit Communications Hill. The SDEIR documents that the foodplants of the threatened bay checkerspot butterfly, dwarf plantain (*Plantago erecta*) and owls cover (*Castilleja* species), occur at the project site. The adult bay checkerspot butterfly feeds on the nectar of a number of flowering plant species that are present at the site. An adult bay checkerspot butterfly was observed on Communications Hill in 1992. Information in SDEIR provides a list of the surveys that were conducted between the "mid-1980's" to 2000. Between 1993 and 2000, 1 survey was conducted in 1997, and 1 was conducted in 1998. Nine visits were made between March 19 and April 29, 2000. The SDEIR stated that "A check with biologists monitoring the bay checkerspot butterfly during its 2000 flight season revealed that the earliest adults were observed on March 10th at other locations, with adults being most active at most locations sometime during the week of March 13th. No butterflies were seen after the week of April 17th." Given the tardiness in initiating the field work, it is likely the 2000 survey may have missed adult bay checkerspot butterflies at the project site.

The population dynamics of this animal undergo dramatic fluctuations. For example, based on the results of a survey conducted in 1987, an entomologist concluded that a proposed residential development at Silver Creek would not adversely affect the bay checkerspot butterfly, given its "low" population size (letter from Dennis Murphy, Stanford University, to U.S. Fish and Wildlife Service, undated; D. Murphy, pers. comm. to the U.S. Fish and Wildlife Service June 1990). However, in the time period from 1987 to 1990, the animals dramatically increased the size and extent of their population, and more comprehensive studies at the site determined that the serpentine habitat at that location was very important for the species. Currently, Silver Creek is considered to contain one of the largest populations of the bay checkerspot butterfly.

The eggs, larvae, and pupae of the bay checkerspot butterfly are difficult to locate in the field (R. White, 1986[87]. *The Trouble with Butterflies*. Jour. Res. Lepidoptera 25(3):207-21). White noted that during the month of January, the diapausing fourth instar larvae are small, about 3-6 millimeters long. They are hidden in the soil and under rocks at peak densities of no more than one or two per square meter (Whit *ibid*). White (*ibid* page 210) concluded that "Small size, low density and mobility have made field study for this species impossible." In addition, the ability of larvae of a related taxa, the endangered quino checkerspot butterfly (*Euphydryas editha quino*), to become dormant during adverse environmental conditions (aestivate) is well documented and they likely are able to survive long periods of time in this state (R. Mattoni, G. Pratt, T. Longcore, J. Emmel, and J. George. 1995(97). *The Endangered Quino Checkerspot Butterfly, Euphydryas editha quino (Lepidoptera: Nymphalidae)*. Jour Res. Lepidoptera 34:991-1008). From the perspective of judging whether a population of the quino checkerspot butterfly has been extirpated, it is important to know that even a robust population may generate no adults at all under poor environmental conditions (Dr. T. Longcore, pers. comm. to C. Nagano). It is likely the bay checkerspot butterfly, a subspecies of the same species, possesses this same life history trait.

Finally the SDEIR (page 5 paragraph 2 of *Report of Surveys Conducted for Special-Status Invertebrates at Communications Hill in San Jose, California* dated June 2000, that was prepared by Richard A. Arnold) and other information document that the bay checkerspot butterfly possesses a "metapopulation type" of distribution and population structure. A metapopulation is a network of semi-isolated populations with some level of regular or intermittent migration and gene flow among them, in which populations may disappear, but then are recolonized by dispersing individuals from other populations. Other populations of this animal are known from the immediate vicinity at Santa Teresa County Park, Tulare Hill, Silver Creek, Kirby Canyon, and the Morgan Hill area. The bay checkerspot butterfly also was intentionally released at 38 sites that contain serpentine grassland in Santa Clara County (Susan Harrison. 1989. *Long Distance Dispersal and Colonization in the Bay Checkerspot Butterfly, Euphydryas editha bayensis*. Ecology 70:1236-1234). It is not known if any of these releases resulted in the establishment of permanent populations, however, individuals were observed at four of the 38 sites two years after the releases occurred (Susan Harrison ibid).

Therefore, given the presence of suitable serpentine habitat at the project site, the observation of an adult bay checkerspot butterfly on Communication Hill, the inadequate survey that was conducted in 2000, the biology of the species, as well as the mobility of the animal, it is highly likely this listed taxa inhabits the project site. We recommend that the applicant obtain incidental take for the bay checkerspot pursuant to sections 7 or 10(a)(1)(B), as appropriate, prior to any ground breaking at the project site.

Response 2: Responses to specific comments raised by the USFWS have been provided below:

a. *"[T]the foodplants of the threatened bay checkerspot butterfly...occur at the project site."*

The past 15 years of research into the bay checkerspot butterfly ("BCB") have shown that the presence of the butterfly's preferred foodplants is immaterial if the plants mature and senesce too early to be edible when the BCB needs them. This has been shown to be the pattern at Communications Hill. Even in years of above-average rainfall, when the foodplants at Communications Hill might be expected to mature and senesce later than in normal years, the plants are inedible during the period when the BCB would be feeding. Thus on the same dates when surveys have shown BCB using other sites, where the foodplants have not yet

99-083

senesced, no BCB are found at Communications Hill. This early senescence at Communications Hill is believed to be due to the site's predominantly south and west exposures and low elevation compared to occupied BCB habitat.

b. *"An adult bay checkerspot butterfly was observed on Communications Hill in 1992."*

Communications Hill has been well studied over the last 15 years by the species experts (e.g., Drs. Raymond White, Dennis Murphy, Alan Launer, Dick Arnold) and none of these experts have succeeded in detecting any breeding activity anywhere on the Hill (e.g., no larvae have ever been detected on the site). These scientists have conducted a total of 67 site surveys on Communications Hill. Each of these visits was made during a time appropriate for detection of one life stage or another of this species, with the express goal of detecting this butterfly, if present. The only possible sighting occurred in 1992, when Dr. White believed he may have observed a single transient individual of this species flying over the site. No documentation exists to confirm this observation, as he was not able to photograph it, or capture or handle the individual butterfly. The animal was too transient to view for more than a few seconds, immediately flying off and not alighting within sight. It was not seen again that day or later in the season. The sex of this individual is unknown. Searches for larval stages in 1993 provided evidence that no female transient had left successful batches of eggs anywhere on Communications Hill. No reproductive success by this butterfly has been documented for this site. Thus, no use of Communications Hill "habitat" by this butterfly has been observed during any of these extensive surveys. In addition to these extensive field surveys, ecologists at Stanford University have searched the available private and public museum collections to ascertain a complete list of all known locations for the butterfly. While about 136 specimens of the BCB were collected and recorded in museum collections or other records by over 20 individual collectors, no Bay checkerspot butterfly from Communications Hill has been collected by any of these individuals. Many of these collections included specimens from the 1950's.

c. *"Given the tardiness in initiating field work, it is likely the 2000 survey may have missed adult bay checkerspot butterflies at the project site."*

The USFWS comment refers to Dr. Richard A. Arnold's nine visits from March 19 to April 29, 2000. Dr. Arnold has some 30 years of experience with insect biology and is known not to reach conclusions unless the evidence is overwhelming. Based on his expertise, Dr. Arnold determined that his surveys fell sufficiently within the flight season of the butterfly to make detection of resident butterflies essentially certain, and that his surveys were adequate to detect any resident population on Communications Hill (pers. comm. 19 Jan. 2001). Dr. White from Live Oak Associates, Inc., another recognized expert, also concurs with Dr. Arnold's conclusion: there is no resident population of Bay Checkerspot Butterflies on Communications Hill.

d. *"The population dynamics of this animal undergo dramatic fluctuations," e.g., Silver Creek Hills.*

The USFWS is correct in noting that the population dynamics of the BCB undergo dramatic fluctuations, but it is not correct to infer from this that Silver Creek Hills is analogous to Communications Hill. Silver Creek Hill had, as the USFWS notes, an apparently small population of BCB that later grew; Communications Hill, by contrast, has never been known to support any population of BCB despite 15 years of intensive survey effort. In addition, the past 15 years of study of the BCB – most occurring after the surveys at Silver Creek Hills to

which the USFWS refers – are recognized to have resulted in survey techniques more thorough than those that existed when the Silver Creek Hill surveys were conducted. The most recent surveys at Communications Hill have benefited both from this technical knowledge and from extensive knowledge of the site itself based on surveys by previous experts. None of this was available to those who surveyed the Silver Creek Hills site – a much larger and more topographically diverse site than Communications Hill – in the 1980's.

e. *"Currently, Silver Creek is considered to contain one of the largest populations of the bay checkerspot butterfly."*

At the present time the most recent report is from the 2000 season, during which approximately five butterflies were observed on the Shea portion of the Silver Creek Hills (pers. comm. Alan E. Launer). This makes it one of, if not the, smallest population of the Bay Checkerspot Butterfly currently extant. No butterflies were observed on any other part of the Silver Creek Hills in 2000.

f. *"White (ibid. page 210) concluded that 'Small size, low density, and mobility have made field studies of this species impossible.'"*

The USFWS has substituted the word "species" for "stage" in this quote. Dr. White was discussing the difficulty of studying pupal & larval stages of this species. This serious error has led the USFWS to completely misunderstand Dr. White's argument. Parts of the BCB life cycle are difficult to know, but the presence of populations is determinable by survey efforts much less than those already expended on Communications Hill.

g. *"It is likely that the bay checkerspot butterfly, a subspecies of the same species, possesses this same [multi-year diapause] life history trait."*

There is no evidence of extended diapause for the BCB, as there is for the quino checkerspot butterfly, a desert species. *Euphydryas editha wrighti* ("quino checkerspot") exists where rainfall averages 10 inches per year, sometimes falls out of season, and is more variable than it is in the Bay Area. Years with virtually no rainfall occur in the San Diego area, but do not here. During our 1976-77 drought years the populations of the Bay Checkerspot Butterfly fell and some went extinct. Larvae have been observed in the fields that appear to have diapaused twice. Multi-year diapause is not, however, documented as a cause of bringing any of the extinct populations back. Finally, even multi-year diapause would not explain why no BCB population has ever been detected at Communications Hill.

h. *"[T]he bay checkerspot butterfly possesses a "metapopulation type" of distribution and population structure."*

The USFWS correctly notes, as does the DSEIR, that the BCB exhibits a metapopulation type of distribution and population structure, but neither the Harrison study nor any other evidence suggests that the BCB has ever colonized Communications Hill.

i. *"[I]t is highly likely this listed taxa inhabits the project site."*

All observers (White, Murphy, Launer, Arnold) agree that the "habitat" on Communications Hill is of very low quality and unlikely to support a resident population of the Bay Checkerspot Butterfly. There is no "suitable habitat" on Communications Hill. In light of the scientific evidence presented above and in the DSEIR (pgs. 59-64 and 73-74), it is highly

unlikely that this listed taxon inhabits the project site. Butterflies are conspicuous and easy to see, yet many surveys over multiple years by competent observers have failed to turn up a single genuinely resident butterfly. Experts agree that the habitat is too low in elevation and very poor in plant resources and required north-exposed slopes, making occupation again very unlikely. For the above reasons, the conclusion in the DSEIR that the Bay Checkerspot Butterfly is unlikely to occupy the project site, is accurate.

Comment 3: Endangered Santa Clara Valley dudleya:
Santa Clara Valley dudleya is known to occur only in the serpentine soils of Santa Clara County. Page 73 of the SDEIR notes that "Grading for the project would result in the loss of all existing Santa Clara Valley dudleya habitat on the slopes of the site, and the project would result in the removal of virtually all Santa Clara Valley dudleya plants within the grading area of the project site." The SDEIR goes on to further note that this action is considered a significant impact.

The Service views the proposed "mitigation" of the Santa Clara Valley dudleya at Communications Hill by attempting to insert translocated plants, seeds, and propagated plants into slopes and other areas that are largely proposed for grading as inappropriate. Furthermore, we view the proposed large scale loss or fragmentation of the population of this listed plant at Communications Hill, together with the indirect impacts that will result to the taxa at the project site as a significant negative effect on the species. We do not concur that the implementation of the proposed mitigation would "....reduce the impacts to the Santa Clara Valley dudleya to a less than significant level." The City of San Jose should contact us to discuss the actions that are appropriate to avoid or compensate for adverse effects to this listed species.

Response 3: The dudleya mitigation plan has been prepared by a professional consulting biologist to ensure that the project's impacts to dudleya on the site are completely mitigated. As described in the DSEIR (pg. 79), the replanting and success criteria would be tied to the total number of plants that are currently on the site. The commentor's concerns about the certainty of the proposed mitigation is acknowledged. A greater assurance of the preservation of the species could be attained by the applicant posting a bond on an existing property with an equivalent population. If the mitigation proves to be unsuccessful at the end of the monitoring period, the property would be retained in a permanent conservation easement and the equivalent population would be preserved in perpetuity. This measure would provide a fail-safe mitigation for the project's impacts. The text of the Draft SEIR has been revised to include this additional measure, which is included in Section IV, **Revisions to the Text of the DSEIR**, of this document. This mitigation measure is not proposed by the applicant at this time, but could be required as a condition of project approval, if it is determined to be appropriate by the City Council in their consideration of the project.

Comment 4: Threatened California red-legged frog and candidate California tiger salamander;
The Service does not concur with the assertion in the SDEIR that the proposed project would not result in significant impacts to the California red-legged frog. This opinion apparently is based on a survey conducted in 1992 of an unspecified duration and intensity, and the lack of observations of this animal in "....aquatic habitats near the study site." The SDEIR notes that the project site "...could potentially..." support the California tiger salamander. We do not concur that implementation of the activities listed on page 83 of the SDEIR will result in no impacts to the California tiger salamander. Page 33 of the *Biological Inventory of the Communications Hill Study Area, San Jose, California* dated September 2000, that was prepared by Olberding Environmental (appendix C of the SDEIR) states that "With both the known presence of the California tiger salamanders in areas adjacent to the project site and the lack of upland habitat in the dense urban environment surrounding Communications Hill, focused studies of potential upland use of the project site by California tiger

salamander are warranted" and "Potential upland habitat for California red-legged frog also occurs on the project site." Therefore, we recommend that adequate surveys for the California red-legged frog and the California tiger salamander be conducted on the project site, especially in appropriate upland habitats, and the Service contacted if either of these animals are located.

Response 4:

Red-legged frog:

Extensive surveys have been conducted within the few wetland (e.g., pond, seeps) habitats that occur on Communications Hill since the early-1990's. It is important to note that California tiger salamander (CTS), was first detected breeding on the Hill in pools along the railroad tracks in 1992 and several surveys subsequent to that time have documented a modest population breeding in the quarry pond and in some years along the railroad track. These surveys were conducted by a series of biologists familiar with the herps of the region, and if red-legged frog had occurred in any of these areas it would likely have been detected. The project site supports one seasonal wetland along Hillsdale Avenue and one small wetland seep approximately 900 feet north of the Hillsdale Avenue seasonal wetland. While the Hillsdale Avenue pond potentially supports CTS, as it is isolated from any creeks or streams or other ponds, it is highly unlikely that red-legged frogs would occur here. Communications Hill is generally lacks any hydrological connection to the creeks and rivers in the region (e.g., Guadalupe River, Coyote Creek) and dense development and freeways occur between these waterways and the project site. The closest known extant population of red-legged frogs is in an area east of Highway 101 and just south of Bernal Road, nearly 7 miles southeast of the site. There are three records for red-legged frogs in the Guadalupe River watershed about 5 miles north of the site from 1904, 1922 and pre-1980. There are presently no records for red-legged frogs anywhere in the San Jose area within the valley (north of Blossom Hill Road) for more than 20 years. In fact there is only one record in the Guadalupe River and Coyote Creek north of Blossom Hill Road since 1922. Therefore, it is quite reasonable for the City of San Jose to conclude that the project would not have an adverse impact on red-legged frogs for the following reasons: 1) due to the negative findings of a number of surveys (including a recent survey by the Santa Clara Valley Water District) within the waterways of San Jose north of the Blossom Hill area; 2) due to negative findings from surveys specifically designed to assess the presence or absence of special-status herps (particularly for CTS) on Communications Hill since the early 1990's; and 3) due to the isolation of the project site from the waterways of the region.

California tiger salamander:

With regard to the project's impact and mitigation for CTS, the following response is provided:

Most if not all (depending on the widening of Hillsdale Blvd.) of the Hillsdale Avenue Pond will be preserved and some of the potential estivation habitat will also be preserved, primarily to the north and east of the pond. Nonetheless, the DSEIR (pg. 76) concludes that if CTS were detected during protocol-level surveys (which are currently on-going), then the project "...could result in significant impacts to CTS and their breeding and estivation habitat."

The DSEIR (pg. 83) states that protocol-level surveys *shall* be completed for the Hillsdale Avenue Pond, including both winter estivation and spring larval surveys. These surveys

would follow the CDFG's survey protocol. If the species is found to use the Hillsdale Pond, then the project would set aside (via a conservation easement) the pond and manage the remaining estivation for the purpose of maintaining this population. If on-site mitigation is not feasible, then the applicant would acquire a conservation easement on an existing off-site CTS population. This easement would protect both breeding and estivation habitat and would be based upon the amount of habitat impacted by the project. The DSEIR recognizes that the final estimate would be negotiated with CDFG and that the applicant would need to enter into a Memorandum of Understanding regarding the acquisition of off-site habitat.

Comment 5: Raptors:
The Service concurs with the SDEIR that the loss of approximately 130 acres of raptor foraging habitat (ruderal and serpentine grassland) is a significant impact. However, we do not concur that the proposed activities listed on page 78 of the SDEIR will "...reduce impacts...to a less than significant level." This habitat provides important foraging, resting, and breeding habitat for raptors, as well as loggerhead shrikes (*Lanius ludovicianus*), snakes, lizards, and other native migratory wildlife species. We recommend that grasslands of equal or higher quality be permanently protected to reduce the loss of this wildlife habitat to a level of less than significant.

Response 5: The mitigation measures described in the DSEIR (pgs. 78-79) are designed to minimize impacts to nesting raptors. The DSEIR (pg. 86) calls out the loss of foraging habitat *on the site* for raptors and special status bird species as a significant, unavoidable impact. The project is not, however, anticipated to result in a significant loss of raptor foraging habitat over the region, because grassland habitat is the most common natural habitat present in the area. The City of San Jose recognizes the importance of protecting grassland habitats within its sphere of influence for a whole variety of flora and fauna. To this end, the Communications Hill Specific Plan sets aside approximately 185 acres of the grassy side slopes of the hilltop to be managed as a trail and open space. In addition, the City of San Jose has established a "Green Line" that not only protects significant grassland habitats within its sphere of influence, but also riparian, wetland, and oak woodland habitats. The overall Specific Plan for Communications Hill, together with the establishment of the Green Line, is expected to result in a less-than-significant impact to foraging habitat for the raptors that occur in the region. For these reasons, the further protection of off-site grasslands by the project is not considered necessary for raptors in the region or useful for raptors on the project site.

Comment 6: The SDEIR does not adequately address the threatened bay checkerspot butterfly and it proposed critical habitat, threatened California red-legged frog, endangered Santa Clara Valley dudleya, candidate California tiger salamander, and raptors at Communications Hill. Several of these issues were raised by us in our previous correspondence with the City of San Jose. We are concerned that planning for this project is proceeding ahead of the statutory requirement for resolving potential adverse impacts to listed species. Therefore, we recommend that the City of San Jose hold in abeyance the environmental review process until the issues regarding listed species and wildlife has been resolved with the Service. If the final environmental impact report is certified without achieving resolution of these issues, the document should clearly acknowledge this fact and state how the City of San Jose intends to comply with the Act.

Response 6: Responses to the specific comments are provided in the above text. For the specific reasons described in the above responses, the City believes that the DSEIR adequately describes the impacts the project will have on biological resources, including listed species, and identifies mitigation measures to reduce the project impacts.

B. STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME, JANUARY 8, 2001

Comment 1: Department of Fish and Game personnel have reviewed the above-referenced DEIR and are providing comments to the City of San Jose. The Department's comments specifically address potential project impacts and mitigation measures for western burrowing owl (*Athene cunicularia*), California tiger salamander (*Ambystoma californiense*) (CTS), nesting raptors, and Santa Clara valley dudleya (*Dudleya setchellii*).

Response 1: Responses to the specific comments are provided in the text below.

Comment 2: The DEIR indicates that burrowing owls were not located on the project site, and that only a few burrows and rock crevice areas are available for owl use. While the area is not commonly used by burrowing owls, the species may utilize grassland habitats in the San Jose area. Since take of burrowing owls and their nests is a violation of the Fish and Game Code, the Department recommends that pre-construction surveys for burrowing owls be conducted on the project site. If burrowing owls or owl burrows are identified, appropriate mitigation, including take avoidance and habitat conservation, should be required and implemented. The DEIR should be revised to include these mitigation measures.

Response 2: The comment is acknowledged. The text of the DSEIR (pages 74 and 79) has been revised to include mitigation measures to avoid impacts to burrowing owl. The revised text is presented in Section IV, **Revisions to the Text of the DSEIR**, of this document.

Comment 3: The DEIR identifies potential impacts and mitigation measures for CTS. The Department finds that the proposed mitigation for CTS is not clear. For example, if CTS are located at the Hillsdale Avenue pond, it is not clear if the pond will be conserved and how much estivation habitat will be conserved on-site. The DEIR also includes a mitigation measure to survey the potential estivation habitat on-site that could serve the quarry pond population. It is not clear how this survey will be conducted and what habitat conservation would be provided. The Department requests that the DEIR be modified to clarify the mitigation requirements and to include Department recommended mitigation discussed below.

In the past few months, the Department has documented evidence from Contra Costa County of CTS moving more than one-half mile away from a breeding location to find estivation areas. It is likely that CTS may move up to 0.75 to 1.0 mile or more from a breeding location. At this same site, protocol level nocturnal surveys failed to provide indication of the numbers of CTS present on the site and the extent of the site that was utilized by CTS. Applying this and other CTS information to the City of San Jose, it is reasonable to assume that CTS are using all grassland habitat within 0.5 miles of a breeding location for estivation. It is also likely that CTS utilize estivation habitat more than 0.5 miles from a breeding location. Locating aestivating CTS, even using current protocols, can be difficult. Therefore, the Department should be consulted following the completion of breeding and estivation habitat surveys to assess the data and develop appropriate mitigation and conservation strategies. Any breeding and estivation habitat that is impacted should be mitigated through the conservation of existing on-site or off-site CTS habitat. A Mitigation Agreement should be completed with the Department to address these impacts.

Response 3: Most if not all (depends on the widening of Hillsdale Blvd.) of the Hillsdale Pond will be preserved and some of the potential estivation habitat will also be preserved, primarily to the north and east of the pond. Nonetheless, the DSEIR concluded that if CTS

were detected during protocol-level surveys (which are currently on-going), then the project "...could result in significant impacts to CTS and their breeding and estivation habitat."

The DSEIR noted that protocol-level surveys **shall** be completed for the Hillsdale Avenue Pond, including both winter estivation and spring larval surveys. These surveys would follow the CDFG's survey protocol. If the species is found to use the Hillsdale Pond, then the project would set aside (via a conservation easement) the pond and manage the remaining estivation for the purpose of maintaining this population. In the event on-site mitigation is not feasible, then the applicant would acquire a conservation easement on an existing off-site CTS population. This easement would protect both breeding and estivation habitat and would be based upon the amount of habitat impacted by the project. The DSEIR recognizes that the final estimate would be negotiated with CDFG and that the applicant would need to enter into a Memorandum of Understanding regarding the acquisition of off-site habitat.

Comment 4: The DEIR identifies potential significant impacts to nesting raptors and proposes avoidance mitigation by not allowing tree removal between February 15 and June 30. While this may be sufficient for most species of concern, June 30 is an early date to assume that fledging will have occurred for all nesting raptors. The Department recommends increasing the avoidance period to July 31 or conducting surveys prior to tree removal to ensure that no nesting raptors or chicks will be impacted.

Response 4: The comment is acknowledged. The text of the DSEIR (page 78) has been revised to incorporate CDFG's recommendations regarding mitigation measures for loss of bird nesting habitat. The revised text is presented in Section IV, **Revisions to the Text of the DSEIR**, of this document.

Comment 5: The mitigation identified for Santa Clara valley dudleya involves translocation, propagation and planting of the species into re-created habitat areas in graded project areas. The Department does not believe this is adequate mitigation for impacts to this species. Habitat for any plant or animal species should be conserved intact, in large, continuous blocks, in a natural state. Conservation of three smaller areas provides lower quality than conservation of one larger area. Also, all re-created habitat areas are considered experimental, since the long-term viability of these sites over decades has not been confirmed. A significant amount of funding is necessary to provide the level of monitoring necessary to document successful establishment, and more importantly, regeneration and propagation through several generations. Sites that have been monitored for a shorter term and appear to have successful establishment of the species are useful for developing and evaluating experimental mitigation, but cannot be considered full mitigation by themselves. The loss of habitat for this species needs to be offset through habitat conservation for mitigation to be considered adequate. The proposed mitigation also fails address the impacts associated with habitat fragmentation and greater proximity to urban development and future impacts. The Department recommends that extant populations of this species be conserved in their natural state to provide adequate mitigation for project impacts. The Department requests that the DEIR be modified to incorporate this mitigation.

Response 5: The dudleya mitigation plan has been prepared by a professional consulting biologist to ensure that the project's impacts to dudleya on the site are completely mitigated. As described in the DSEIR (pg. 79), the replanting and success criteria would be tied to the total number of plants that are currently on the site. The commentor's concerns about the certainty of the proposed mitigation is acknowledged. A greater assurance of the preservation of the species could be attained by the applicant posting a bond on an existing property with an equivalent population. If the mitigation proves to be unsuccessful at the end

of the monitoring period, the property would be retained in a permanent conservation easement and the equivalent population would be preserved in perpetuity. The off-site acquisition aspect of the mitigation would ensure that a population situated away from the pressures of urbanization is set aside in perpetuity and is protected in this way from future potential impacts. This measure would provide a fail-safe mitigation for the project's impacts. The text of the Draft SEIR has been revised to include this additional measure, which is included in Section IV, **Revisions to the Text of the DSEIR**, of this document. This mitigation measure is not proposed by the applicant at this time, but could be required as a condition of project approval, if it is determined to be appropriate by the City Council in their consideration of the project.

E. STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, DECEMBER 27, 2000

Comment 1: The impact on level of service (LOS) on State Route 87 (SR 87) and its ramp intersections is not desirable. Additional comments regarding the LOS will follow within the next week.

Response 1: Impacts to SR87 are identified in the DSEIR (pg. 112) as significant adverse impacts of the project. Improvements are planned and funded to SR87 that would add HOV lanes to the mainline and to selected on-ramps. While not a project mitigation measure, these improvements will result in better levels of service than are occurring today. The project would also have a significant impact to the ramp intersection of SR 87 southbound and Capitol Expressway (DSEIR pg. 109). The DEIR identifies an improvement to this intersection, the addition of a fourth eastbound through lane on Capitol Expressway, that is included as a part of the project and would offset the project impact (DSEIR pg. 115).

Comment 2: Page 10, Paragraph 2 states that, "A new water system will be constructed in order to meet the demand for domestic water use and fire service on the site and the remainder of Communications Hill." Does this mean the private water lines that run from Carol Drive south towards the Santa Clara County Communication Facility, parallel to the eastern edge of State right-of-way will be replaced by a municipal system? The State has an interest in these lines as they were relocated during construction of SR 87.

Response 2: The proposed project will not replace or affect the private water lines running from Carol Drive south towards the County Communication Facility, parallel to the eastern edge of SR 87, in any way.

REGIONAL AND LOCAL AGENCIES

F. METROPOLITAN TRANSPORTATION COMMISSION, NOVEMBER 28, 2000

Comment 1: The Draft SEIR (pages 112-116) finds that the proposed project would result in significant LOS impacts to three freeway segments operating at LOS F - SR 87 NB (Curtner Avenue to Almaden Expressway), SR 87 NB (Almaden Expressway to Alma Avenue), and SR 87 SB (I-280 to Alma Avenue). The Draft SEIR further states that a mitigation measure such as the addition of HOV lanes on SR 87 (a Santa Clara County Measure A/B project) would restore freeway conditions to LOS E or better, but this is deemed infeasible due to cost considerations, project timing issues, and

the regional nature of freeway planning. However, the Draft SEIR does not provide sufficient information on the SR 87 HOV Lane project to support this finding.

It is recommended that the Final SEIR provide additional project details on the SR 87 HOV Lane project such as cost estimates, funding status, project implementation schedule, and agency responsible for implementing the project. If this improvement is deemed to be feasible, it should be added as a mitigation measure, and the project applicant should be required to pay a fair share contribution towards this improvement (which could conceivably accelerate the delivery of this project). Also, please note that MTC's *1998 Regional Transportation Plan* includes the SR 87 HOV Lane project (RTP #94124).

> **Response 1:** The SR 87 HOV lane project is fully funded and is now going through final design. The project sponsor is the Santa Clara Valley Transportation Authority (VTA). This is a Measure A/B (sales tax) project. The cost of the project is approximately $60 million. The project will be constructed in 2003.

Comment 2: The Draft SEIR (pages 164-166) shows that four Congestion Management Program (CMP) study intersections would operate at LOS F during at least one of the peak hours under the cumulative conditions (Year 2003). As such, the Final SEIR should discuss whether the City of San Jose would be required to prepare a deficiency plan in accordance with the Santa Clara County CMP.

> **Response 2:** As noted in the comment, level of service deficiencies are projected at four CMP intersections under cumulative conditions. The VTA is currently preparing a countywide deficiency plan to respond to LOS deficiencies at these and many other regional intersections throughout Santa Clara County that are projected to operate at LOS F. The City of San Jose is participating in the deficiency planning process and will implement the plan within its boundaries once the plan is completed and adopted.

G. SANTA CLARA VALLEY TRANSPORTATION AUTHORITY, DECEMBER 29, 2000

Comment 1: Missing Appendices
The TIA makes references to several items that were included in appendices. However, only traffic volume count sheets and LOS calculation sheets for a few intersections were provided in the appendices that we received. The final TIA should include all appendices.

> **Response 1:** The comment is acknowledged. A copy of the TIA with complete appendices has been included as an attachment to Section IV, **Revisions to the Text of the Draft SEIR** of this document.

Comment 2: Results Inconsistent with CMP Monitoring Analysis
Page 20 of the TIA describes adjustments that were made to the analysis of existing conditions at Capitol Expressway/SR 87 southbound ramps, a CMP intersection. The adjustments lead to analysis results in the Draft SEIR and the TIA that are not consistent with results provided to the CMP by the local agencies for the 2000 CMP monitoring program. The introduction of such adjustments should be conducted under consultation with the affected local agencies. In this case, Santa Clara County and City of San Jose staff should be consulted, if they already haven't been consulted.

Response 2: Adjustments were made to the level of service calculations based upon field measurements of delay, as described in the Highway Capacity Manual. These adjustments were necessary to bring the calculated average stopped vehicle delay in line with what was observed in the field. The City of San Jose guidelines for traffic impact analysis specify that traffic conditions should be observed in the field during peak hours and that adjustments may be necessary to calculated service levels based upon those observations. The findings of the level of service calculations, and the adjustments that were made to arrive at the results, were discussed in meetings with the City of San Jose and County staffs.

Comment 3: Inconsistent Signal Timing Data
Pages xiii and 115 of the Draft SEIR and pages v, 33 and 45 of the TIA discuss mitigations for the project impact identified at the Capitol Expressway/SR 87 southbound ramps intersection. These pages identify signal timing changes as part of the mitigations. In particular, a change to the minimum green times for the eastbound approach from 85 seconds to 78 seconds is proposed. The CMP database shows an existing, minimum green time of 70 seconds for this approach. Changes to minimum green times and other timing parameters are usually not allowed for mitigation purposes. In any event, determination of such changes should be conducted under consultation with local agency staff. In this case, Santa Clara County and City of San Jose staff should be consulted, if they already haven't been consulted.

Response 3: The CMP database that was provided to the EIR traffic consultant by the City of San Jose had a minimum green time of 85 seconds for eastbound Capitol Expressway at the SR87 southbound ramps. This was also the green time measured in the field for this location. The project was found to have an impact at this intersection and the recommended improvement is the addition of a fourth eastbound through lane. To get the most benefit out of this identified improvement, it would be logical to change the signal timing slightly, as was done for the DEIR. If the existing minimum green time is only 70 seconds, as noted in the comment, then the identified improvement will work even better.

Comment 4: Striping and Geometric Changes to Capitol Expressway
The pages noted in Comment 3 above also include mitigations requiring changes to striping and geometrics on Capitol Expressway. The affected agencies should be consulted on proposed changes to roadway design.

Response 4: The City of San Jose has met with the Santa Clara County Roads and Airports Department staff to discuss the recommended lane addition to Capitol Expressway. The County staff was initially supportive of the lane addition and asked the City staff to prepare a preliminary design drawing of it.

Comment 5: Queuing Analysis Assumption
Pages 38 and 39 of the TIA provide the results of queuing analyses. It is stated that the assumed length of a vehicle for these calculations was 20 feet. The default value for this parameter in TRAFFIX is 25 feet. It is unclear whether the 20 feet was only used to convert the queue length reported in TRAFFIX from number of vehicles to queue length in feet, or if the 25 feet default value in the program was changed to 20 feet. Back-up calculation sheets for this queuing analysis should be provided in the TIA, along with a clarification of the vehicle length assumed in TRAFFIX.

Response 5: For the purposes of the TIA queuing analysis, the assumed vehicle length is 20 feet. The TRAFFIX default was not changed; the number of queued vehicles calculated by TRAFFIX was multiplied by 20 feet per vehicle. TRAFFIX calculation sheets, which were

the basis of the queuing calculations, are included in the traffic technical appendix that have been provided to the VTA, as noted in the response to Comment 1.

Comment 6: Queuing Impacts in SEIR
Pages 38 to 40 and vi of the TIA identify three locations impacted by queuing with the proposed project and recommended improvements for these impacts. It is unclear from the TIA whether the affected local agencies have been consulted on these improvements. The Draft SEIR does not include these impacts and the recommended improvements. Please address this issue.

> **Response 6:** The DSEIR does not consider queuing issues to be significant impacts, as defined by the City of San Jose or CMP requirements. For this reason, the queuing information is provided in the TIA, but is not included in the DSEIR. The City of San Jose looks at queuing issues when considering project approval and requires improvements if they are desirable and feasible.

Comment 7: Other Queuing Impacts
Page 38 of the TIA discusses possible queuing impacts at the Capitol Expressway/SR 87 southbound ramps intersection based on the LOS analysis, but discounts this possibility based on field observations. Given Comments 2 and 3 above, back-up information supporting the "no impacts" finding should be provided in the TIA.

> **Response 7:** The TRAFFIX program provides estimates of queue lengths. These estimates, however, are not always accurate, given the unique characteristics of individual intersections. For this reason, intersections with significant left-turn volumes are often observed in the field to determine actual queue lengths. For the intersection of Capitol/SR 87, the observed queue lengths never exceeded the storage capacity. Nevertheless, this intersection was identified as having a significant impact from the project, and mitigation is identified that would improve the intersection levels of service and reduce queue lengths.

Comment 8: Immediate Implementation Action List
Pages v and 36 of the TIA and pages xiii, 112 and 115 of the Draft SEIR discuss that there are three identified freeway segments that would be significantly impacted by the project. It is concluded that these are significant unavoidable impacts.

In the case of such impacts, the CMP TIA guidelines (adopted May 7, 1998) state that the Lead Agency must require the proposed project's sponsor to implement the "Immediate Implementation Action List" in Appendix D of the CMP TIA guidelines as part of project approval. This requirement is in lieu of the preparation of a local deficiency plan and pending adoption of a Countywide Deficiency Plan. The TIA and SEIR should include this requirement for the project.

The "Immediate Implementation Action List" includes actions to improve the bicycle and pedestrian environment, enhance public transit, and encourage the implementation of Transportation Demand Management Programs. In order to reduce the number of single occupant vehicle trips generated by the project, VTA requests that the City consider applying the following as conditions of approval or mitigation measures.

- Transit Fare Incentives such as Eco Pass and Commuter Checks
- Shuttles to Transit
- Inclusion of Bicycle Lanes or Paths
- Bicycle Lockers and Bicycle Racks

- On-site or Walk-Accessible Employee Services (day-care, dry-cleaning, fitness, banking, convenience store)
- On-site or Walk-Accessible Restaurants

Response 8: Since this is a residential project, many of the actions on the "Immediate Implementation Action List" are not applicable. The proposed development is part of the Communications Hill Specific Plan, which was adopted by the City of San Jose in 1992. The project consists of high density housing, which is conducive to transit ridership. As described in the DSEIR (pg. 114), bicycle lanes, signs and/or striping will be provided on the project site, in accordance with the City of San Jose standards and in accordance with the specifications of the Specific Plan. The internal road system is being designed to provide sidewalks (in some areas separate from the roadways), bus stops, and room for bicycles. As a part of the Specific Plan buildout, there is a planned "village center", which will include approximately 50,000 square feet of retail and service uses, restaurants, and possibly a daycare center. The Specific Plan buildout also includes bicycle facilities such as lockers and racks, shuttles to transit, and a pedestrian/bike path to the Curtner LRT station.

Comment 9: Bicycle Access and Parking
VTA's October 6, 2000 comment letter on the Notice of Preparation (NOP) and September 21, 2000 comment letter on the PD Rezoning provided comments on bicycle access and parking that are not addressed in the Draft SEIR and TIA. As such these comments are repeated here.

VTA considers bicycling to be an important commute mode by itself and in combination with other modes. As such, all VTA buses and light rail cars are equipped with bicycle racks. Bicycles are allowed on Caltrain as well. This project is near VTA bus routes, two light rail stations and a Caltrain station. The project is also near the bike path east of SR 87 as well as the bike lanes on Narvaez Avenue that are part of the Cross-County Bicycle Corridor System. Therefore the project should include provisions, such as the inclusion of bicycle lanes or paths, to facilitate residents' use of bicycles to access these transit and bicycle facilities.

In addition, VTA suggests that the project include appropriate bicycle support facilities, such as secure bicycle storage facilities for occupants of new multi-family structures without private garages. These storage facilities could take the form of a special bicycle parking room off a common garage. VTA's Bicycle Technical Guidelines provides guidance on estimating supply, siting, and design for bicycle storage facilities. Contact Sylvia Star-Lack at (408) 321-5725 or sylvia.star-lack@vta.org to obtain a copy of these guidelines.

Response 9: As described in the above response to Comment 8, bike lanes and paths will be provided on the project site, in accordance with the specifications of the Communications Hill Specific Plan. The project will enjoy excellent connectivity to the regional bicycle system. One of the project's roadways will tie into Narvaez, which provides direct connections to the bicycle path along SR87. The project ties into Capitol Expressway, which has bike lanes, via Hillsdale Avenue or Vistapark Drive. With the future buildout of the Communications Hill Specific Plan, the project will tie into Curtner Avenue, which also has bike lanes. All internal roadways will be built to the City of San Jose standard cross section, which includes room for bikes in the curb lane. Bike lanes would be integrated with the overall street layout and would connect to public transit. Bicycle storage facilities, such as lockers and racks, will be included as part of the buildout of the Specific Plan.

Comment 10: Pedestrian-Oriented Development
VTA's October 6, 2000 comment letter on the NOP provided comments on pedestrian oriented development that are not addressed in the Draft SEIR and TIA. As such, these comments are repeated here.

The Draft SEIR notes that the "approved Communications Hill Specific Plan provided a comprehensive planning framework for development of a unified, high-density, pedestrian-oriented, urban community with a mix of uses." The SEIR should describe how the project conforms to these plans.

To create a unified, pedestrian-oriented urban community, the following features should be included in the project: neighborhood-serving commercial/retail land uses, continuous sidewalks along all streets within and adjacent to the project, pedestrian-friendly street environment including 10-foot sidewalks, street trees and pedestrian-scale lighting, wheelchair curb ramps in compliance with ADA requirements at all driveways and intersections within and adjacent to the project site and shuttles to transit.

Response 10: As described in the DSEIR (pg. 114), the project has been designed in conformance with the Communcations Hill Specific Plan to encourage bicycle and pedestrian use. Shuttles to transit will not be necessary with buildout of the Specific Plan, because once the main road through the project is completed and the VTA provides bus service on it, there will be a bus stop within one-quarter mile of all Communications Hill residents. The neighborhood-serving commercial uses are described above in the response to Comment 8. Sidewalks would be built on new and unimproved streets. In conformance with City standards, ADA-compliant wheelchair curb ramps would be provided at driveways and intersections. Planting strips for street trees adjacent to on-street parking would also be standard features. Where steep topography precludes street extensions, stairs would allow pedestrian access and provide overlooks. As a part of the Specific Plan buildout, a hike/bike/run pathway separate from the street systems would pass through the 185-acre open space area which surrounds the residential neighborhoods. Through the above features, the project and the overall Specific Plan will provide a pedestrian-oriented urban community.

Comment 11: Existing Transit Service
Although VTA currently has no plans to bring service directly to the development, this project is near existing VTA bus routes, two light rail stations and a Caltrain Station. As a mitigation for the project's impact on traffic, the infrastructure of the project should include the following features so the establishment of possible future bus service within and adjacent to the development is not precluded.

- Minimum 22' curb lanes on major streets within and adjacent to the project site. This minimum width will allow buses to service bus stops while out of the flow of traffic and will help to reduce conflicts between buses and other vehicles traveling on the roadways.
- Continuous sidewalks along all streets within and adjacent to the project site. The sidewalks are included in the project according to the plans reviewed.

VTA staff request that future designs for the project be forwarded for VTA review and possible development of future bus service in the area.

Response 11: The project will provide continuous sidewalks along all streets within and adjacent to the site. Also, there will be separate pedestrian paths and stairways in many areas. The main internal roadway connecting Vistapark Drive to Curtner Avenue, once it is

completed, will provide 22-foot wide curb lanes wherever bus stops are anticipated. In order to reduce grading impacts, some sections of the road, between intersections, will have a narrower cross section. The proposed roadway plans will be reviewed by the City of San Jose Public Works Department to ensure that the road design allows for possible future bus service with minimal conflicts between buses and other vehicles. The project will provide continuous sidewalks along all streets within and adjacent to the site. Also, there will be separate pedestrian paths and stairways in many areas.

H. SANTA CLARA VALLEY WATER DISTRICT, JANUARY 10, 2001

Comment 1: The Santa Clara Valley Water District (District) has reviewed the Draft Environmental Impact Report for the Communications Hill Kaufman & Broad Residential Project, dated November 2000 and submitted to the District on November 17, 2000. In addition, the District reviewed the complete hydrology study revised December 6, 2000 by Schaaf & Wheeler and submitted to the District on December 8, 2000. While the comments provided herein are past the required response date, the District would like the City of San Jose (City) to consider them during the environmental review process for this project.

The site drains to Canoas Creek, a District flood control facility. The runoff from the site may negatively impact District facilities and downstream homeowners if increases in runoff from the project are not adequately mitigated, since currently areas of Canoas Creek experience flooding during as little as a 7-year flood flow.

Based on our review of the proposed project as shown on the above referenced plans, we have the following comments regarding the project site:

Response 1: Responses to specific comments are provided below.

Comment 2: The Narvaez and Hillsdale watersheds should be clearly shown on the Canoas Creek watershed map, Figure 1.

Response 2: Figure 1 has been revised to show local Narvaez and Hillsdale watersheds within Subarea F North and Subarea F East. The revised Figure 1 and the revised hydrology report are presented in its entirety as an attachment to Section IV, **Revisions to the Text of the DSEIR** of this document.

Comment 3: On page 3 of the hydrology report, it is unclear why Subarea F-North has not been routed through a storm drain system or detention basin, since it appears that the interim detention basin and the Helzer Ranch detention basins are located within this subarea and that for the project conditions there will be storm drains and detention basins.

Response 3: The model for Subarea F North was intended to be used to evaluate potential impacts on Canoas Creek due to cumulative development conditions. For this reason, it does not consider the mitigation measures to be included in the development. In addition, only a portion of Subarea F North would drain to existing storm drains and the Subarea would need to be split into even smaller areas. Since the impact to Canoas Creek was considered significant, this was not considered necessary. A more detailed analysis was used to further evaluate the runoff from just the project area within Subarea F. The revised hydrology report is presented in its entirety as an attachment to Section IV, **Revisions to the Text of the DSEIR** of this document.

Comment 4: On page 4 of the hydrology report, the value for the 100-year flowrate for the Specific Plan Development for Subarea F-North appears to be incorrect. The table indicates a value of 191 cubic feet per second (cfs), but the HEC-1 run (CH100) indicates a value of 187 cfs.

> **Response 4:** Table 2 of the hydrology report was revised to show 187 cfs for Subarea F North with development. The revised Table 2 and the revised hydrology report are presented in its entirety as an attachment to Section IV, **Revisions to the Text of the DSEIR** of this document.

Comment 5: On page 4 of the hydrology report, there are inconsistencies between the values in Table 2 and those in the text of the report. The report should be revised for consistency and the increase in runoff between the existing and project conditions should be verified for each subarea. In addition, the values on page 37 of the DEIR, Section C, should also be verified for accuracy, since this section summarizes the results presented in the hydrology report.

> **Response 5:** The values in Table 2 for Subarea F East with the storm drain routing were mistakenly transposed for the 10-year development condition and the 100-year existing condition. This was corrected in the revised hydrology study. The results stated in the EIR summary have been verified. The revised final Hydrology Report and all revised EIR text is presented in Section IV, **Revisions to the Text of the DSEIR**, of this document.

Comment 6: On December 8, we received a full copy of the hydrology report from Schaaf & Wheeler that included modifications to the Tc and R-values used as part of the CN method calculations. These changes were not included in the text of the report included in the DEIR. The final Environmental Impact Report (EIR) will need to include a copy of the final Hydrology Report used for this project.

> **Response 6:** The revised final Hydrology Report and all revised EIR text is presented in Section IV, **Revisions to the Text of the DSEIR**, of this document.

Comment 7: The changes made to the Tc and R-values, resulted in a R/(Tc+R) value of 0.5 for rural and previous areas. This value is not very conservative and may lead to underestimating the size required for the detention basins. The HEC-1 runs should also be run using a R/(Tc+R) value of 0.7 for the rural and previous areas to determine the sensitivity of the model and to verify that the increased flowrates calculated have not been underestimated which could potentially impact flooding in the area.

Response 7: The SCVWD hydrology methodology recommends that the Storage Coefficient (R) should be such that R/(Tc+R) is in the range of 0.5 to 0.9. The value of 0.5 was selected to be on the low end of the range. The local watersheds are very steep, with heavy clay soils, little or no tree cover and very limited depression storage. For these reasons, it is appropriate that the storage coefficient is low, and not in the middle of the range.

99 - 083

To evaluate the sensitivity of the potential change in storage coefficient, the existing and project condition models were revised to use an R/(Tc+R) of 0.70. The results are shown below.

10-Year Storm Event

Condition	R/(Tc+R) = 0.50	R/(Tc+R) = 0.70	Change
Narvaez Existing	39	30	-9
Narvaez Project	47	38	-9
Hillsdale Existing	36	27	-9
Hillsdale Project	52	47	-5

100-Year Storm Event

Condition	R/(Tc+R) = 0.50	R/(Tc+R) = 0.70	Change
Narvaez Existing	69	53	-16
Narvaez Project	80	66	-14
Hillsdale Existing	63	49	-14
Hillsdale Project	83	74	-9

The change in the storage coefficient has a smaller effect on the Hillsdale project condition because the Hillsdale drainage area has less open space and pervious area. The Narvaez drainage area includes significant open space in the project condition.

The change in the runoff coefficient would increase the required detention storage. The runoff coefficient changes the shape of the runoff hydrographs, to reduce the peak and extend the duration of flow. The reduction in the existing runoff values lowers the design release from detention storage and on the project condition hydrograph; this requires an additional amount of storage.

For the Hillsdale drainage area, the required storage would increase from approximately 1.5 acre-feet to approximately 4.0 acre-feet. For the Narvaez drainage area, the storage would increase to approximately 2.2 acre-feet. This may be physically possible for the Hillsdale drainage area, but the Narvaez detention basin has already been constructed and it would be very difficult to expand the storage volume

Finally, the existing storage coefficient values were calibrated to fit the SCVWD regional regression equations from 1976, are a better fit to the 1996 equations, and were reviewed and approved by the SCVWD for the Helzer Ranch project.

For the reasons described above, the final Hydrology Report has not been changed to revise the storage coefficient.

99-083

Comment 8: Figures 2 & 3 of the report need to be labeled as well as the detention basin for the Hillsdale watershed. The attached figures should clearly indicate which areas drain to the each detention basin and which areas do not drain to the detention basins.

> **Response 8:** Figures 2 and 3 of the Hydrology Report have been revised to include figure numbers and a label for the Hillsdale detention pond. Figures 2 and 3 have also been revised to shade the areas that drain to the ponds. The revised figures and the revised hydrology report is presented in its entirety as an attachment to Section IV, **Revisions to the Text of the DSEIR** of this document.

Comment 9: It is unclear on page 8 of the hydrology report how the potential cumulative increases in flowrate to Canoas Creek, 16 cfs for the 10-yr flood event and 19 cfs for the 100-year flood event, were obtained. These values appear to be lower than the increases calculated for both the Hillsdale and Narvaez watersheds, though the above values are for the entire development of Communications Hill. There is to be no net increase in the flowrate to Canoas Creek as a result of this project. The hydrology report and DEIR text should clearly state this requirement and indicate detention basins will be used as part of the project to meet this requirement.

> **Response 9:** The cumulative values were based on the hydrology model used to develop Table 2. For the 10-year event, there is an increase of 12 cfs from Subarea F North (125 minus 113) and increase of 3 cfs from Subarea F East (53 minus 50). This totals 15, but was rounded up to 16 in the model. The results for the 100-year are similar. The Hydrology Report was revised to refer to Table 2. The Hydrology Report has also been revised to state that the detention ponds are designed such that there would be no net increase in the peak flow rate to Canoas Creek as a result of this project. The text of the DSEIR has been revised accordingly. The revised text is presented in Section IV, **Revisions to the Text of the DSEIR** of this document.

Comment 10: It is unclear why the area was modeled using both the old SCVWD design hydrology procedure and the CN method. There does not appear to be any discussion relating the results of the two methods. In addition, the text of the DEIR in section C discusses the increases in runoff based on the results of the old SCVWD design hydrology procedure, though the required detention was determined using the results of the CN method. The use of these two methods should be more clearly explained in both the text of the DEIR and the hydrology report.

> **Response 10:** A section in the report has been added to discuss the reason for the different methods, and the differences in results. The text of the DSEIR has been revised accordingly. The revised text is presented in Section IV, **Revisions to the Text of the DSEIR** of this document.

Comment 11: It does not appear that the HEC-1 runs for the Narvaez watershed included both the interim detention basin and the existing Helzer Ranch detention basins. The analyses need to properly model the project conditions with the interim detention basin.

> **Response 11:** The HEC-1 runs for the Narvaez system were established for the ultimate development condition. A phased condition may be required to consider the interim detention pond in the Narvaez system, and the interim grading for the Hillsdale drainage system. This will be prepared as part of the interim grading plan.

Comment 12: In the last paragraph on page 40 and in the second paragraph on page 41 of the DEIR, there are summary statements regarding the increased flowrates in Canoas Creek due to the project

before mitigation. These numbers do not appear to be consistent with the values presented in the discussions earlier in the text of each sub-watershed impacts. This section needs to be reviewed and revised for consistency, clarity, and accuracy.

> **Response 12:** The flow rates quoted on pages 40 and 41 of the DSEIR have been updated and verified. The revised text is presented in Section IV, **Revisions to the Text of the DSEIR** of this document.

Comment 13: The final detention basin designs will need to reflect the final hydrology calculations. In addition, the December 6 revisions to the report by Schaaf & Wheeler have changed the required detention for both the Hillsdale and Narvaez watersheds, which may have altered the sizes of the basins.

> **Response 13:** The final detention basin designs will need to be updated after the final Hydrology Report to include any later modifications to the site grading, which may affect drainage areas and grading near the ponds. In addition, there may need to be an interim condition plan for the Hillsdale drainage system. The final Hydrology Report summarized in the DSEIR considers the ultimate development condition.

Comment 14: The text of the DEIR regarding the hydrology and flooding should be reviewed for consistency with the final hydrology report and revised as needed based on the December 6 Schaaf & Wheeler revisions and comments made in this letter.

> **Response 14:** The text of the DSEIR has been revised to reflect the final Hydrology Report. The revised text is presented in Section IV, **Revisions to the Text of the DSEIR** of this document.

Comment 15: The calculations, design, and operating and maintenance manual for the interim detention basin in the Narvaez watershed and the permanent basin for the Hillsdale watershed should be submitted to the District for review and comment. In addition, the calculations and design information for the detention basins at Helzer Ranch, including the modifications to the outlet for this project, need to be submitted to the District for review. Our records do not indicate that a copy of the final calculations and design and operating and maintenance manual for the Helzer Ranch detention basins was sent to the District.

> **Response 15:** The comment is hereby noted and acknowledged. The plans for the interim and permanent detention basins on the project site will be submitted to the District for review and comment.

Comment 16: The DEIR should indicate the responsible party for the maintenance and operation of the new detention basins. Mitigation for the increases in flow to Canoas Creek and the flooding cannot be properly mitigated for without having a designated party responsible for the proper maintenance and operation of the basins.

> **Response 16:** The City of San Jose is evaluating the alternatives for ownership, maintenance, and operation of the detention ponds and other community facilities in the project area. These facilities may be owned by the City, a homeowners association, or a special facilities district. It is most likely that a City Maintenance District would maintain the permanent detention basin and the temporary basin. Back-up responsibility for the temporary detention pond would be with the Home Owners Association and/or other property owners within the Specific Plan area. The underlying fee title of the permanent detention basin

would be with a Home Owners Association. The underlying fee title of the temporary basin would likely be owned by MTA Properties.

Comment 17: It is unclear on page 153 of the DEIR under Storm drainage what is meant by the statements "Runoff from developed portions of the site vicinity which are outside of the City of San Jose limits does not enter the City storm drain system. This runoff is conveyed to detention basins for evaporation and percolation into the ground." Any runoff from the project site that enters the proposed detention basin in the Hillsdale watershed will be discharged to Canoas Creek via a City storm drain. Water that enters the interim detention basin in the Narvaez watershed or the Helzer Ranch detention basins will enter Canoas Creek through an outfall from the Helzer Ranch basin. In addition, the detention basins do provide for some evaporation and percolation though the main purpose is to temporarily detain water from entering the creek to prevent flooding.

Response 17: The statement on page 153 of the DSEIR refers to the quarry area on the north side of Communications Hill, which does not drain to an existing storm drain system for small rainfall events. The text of the DSEIR has been revised to clarify the discussion. The revised text is presented in Section IV, **Revisions to the Text of the DSEIR,** of this document.

Comment 18: As noted in our October 4, 2000, letter regarding the Notice of Preparation (NOP) for this project, the stability of the hillside slopes with respect to the siting of the proposed detention basins is of concern. The document indicates that portions of the south facing slopes are located in areas subject to earthquake induced landslides and it is unclear if the detention basin for the Hillsdale watershed is located in this potential unstable area. A geologic and soils report should be prepared which evaluates the finish slopes on the site, identifies any necessary subdrains associated with the hillside grading, and addresses the stability of the slopes where the detention basins are located.

Response 18: As described in the DSEIR (pg. 34) potential impacts posed by unstable slopes and landsliding would be mitigated by incorporating standard construction measures into project grading and drainage construction. Specific measures for the proposed detention basin would be identified in the project design-level geotechnical report proposed for the project, including the potential for seismically induced landsliding. These evaluations will be performed in accordance with the CDMG Special Publication 117 (CDMG, 1997). Through the proposed measures, the potential impacts to the detention basin from landsliding would be reduced to a less than significant level.

Comment 19: As noted in our letter regarding the NOP, the project Site should include postconstruction measures to prevent pollution of the runoff from the site and to protect the water quality in the receiving streams. The document mentions as part of the mitigation monitoring plan for water quality, in the Drainage, Flooding, and Water Quality chapter, that vegetated swales and catch basin inserts are to be used where possible. Stronger language should be used in describing the mitigation measures proposed, i.e., the project *will* include vegetated swales and catch basin inserts as water quality mitigation measures. The document should clearly identify which types of postconstruction measures for water quality protection can and will be included in the project instead of only mentioning two measures that may or may not be included. A good source to reference for information regarding how to include such features in the final site design is the *Start at the Source Design Guidance Manual for Stormwater Quality Protection,* a copy of which can be obtained through the Bay Area Stormwater Management Agencies Association.

New, more stringent regulations of the Clean Water Act have recently been triggered because the National Pollution Discharge Elimination System permits program has failed to protect beneficial

uses of the County's creeks and the South San Francisco Bay, as evidenced by such observations as violations of ambient water quality criteria; high concentrations of toxic substances; and fish consumption health advisories. These new regulations require that the Total Maximum Daily Loads (TMDL) of sediment, heavy metals, exotic species, pesticides, and other pollutants are to be calculated for discharges to the Guadalupe River and/or South San Francisco Bay. Since discharges to Canoas Creek discharge to the Guadalupe River and ultimately the South San Francisco Bay, it is likely that TMDLs developed for these pollutants will establish load allocations for discharges to and from Canoas Creek. Further, because the Guadalupe River and South San Francisco Bay are identified as impaired water bodies due to these pollutants for which TMDLs will be developed, as well as other applicable water quality laws, any change of land use must have a neutral impact on the loading of these pollutants. The City should require the project proponent to develop and implement a nonpoint source treatment plan that ensures that loads of sediment, heavy metals, and pesticides are not increased, and that exotic species are not increased in number or variety, due to activities or impacts attributable to the site that occur during and after site development.

> **Response 19:** As described in the DSEIR (pgs. 12 and 15), the project will be required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) as part of the NPDES General Construction Permit. The project will also be subject to the provisions of the City's Post-Construction Urban Runoff Management Policy, to minimize storm water pollution impacts over the life of the project. The project will conform to any City requirement's to develop and implement a nonpoint source treatment plan that ensures that loads of sediment, heavy metals, and pesticides are not increased, and that exotic species are not increased in number of variety due to activities on the site that occur during or after site development.

Comment 20: District records show no wells located on the project site. In accordance with District Ordinance 90-1, the owner should show any existing well(s) on the plans. The well(s) should be properly registered with the District and either be maintained or abandoned in accordance with the District's standards. Property owners or their representative should call Mr. Mike Duffy, (408) 265-2607, extension 2743, for more information.

Please submit two copies of the final EIR and supplemental information requested that address the above comments to the District for review and comment. Reference District File Number 25960 on further correspondence regarding this project.

> **Response 20:** The comments are noted and acknowledged. The documents requested will be supplied.

I. SANTA CLARA VALLEY ROADS AND AIRPORTS DEPARTMENT, JANUARY 8, 2001

Comment 1: Extend the proposed Eastbound through lane of Capitol Expressway from Highway 87 to Vistapark Drive (See "Mitigation Measures Included in the Project", Page 115, Volume 1).

> **Response 1:** In order to mitigate project impacts, it is only necessary to add a fourth eastbound through lane on Capitol Expressway at the SR87 southbound ramps. In order to make the fourth lane functional, it will be necessary to extend it beyond the Narvaez Avenue intersection. While it may be desirable to extend the fourth lane all the way to Vistapark Drive, this is not necessary as project mitigation. The City of San Jose and County Roads

and Airports Department staff will work together to define to specific limits of the required improvement.

Comment 2: Figure 8, "Project Trip Distribution" (Appendix E, Page 31, Volume 2) shows only 5% of trips are assigned to Capitol Expressway. This number appears low. 30% would seem reasonable. Please revise this figure or show us how this number was derived.

Response 2: The trip distribution pattern assumed for the project traffic impact analysis is consistent with previous traffic studies that have been done for the area. The distribution assumed that 5% of the project traffic would use Capitol Expressway east of Monterey Road. This is a reasonable assumption, given that relatively few employment sites are accessible via Capitol Expressway to the east. All employment in downtown San Jose, north San Jose, and other communities to the north would be best accessed via SR87 or Monterey Road. Employment in Edenvale or Coyote Valley would be best accessed via SR87 to SR85. It should be noted that parts of Capitol Expressway closer to the project site would have project usage much higher than 5%. For example, the portion of Capitol Expressway just west of SR87 was assumed to be used by 13% of project trips. For the above reasons, the trip distribution used for the project traffic impact analysis is considered to be reasonable and accurate.

Comment 3: The Executive Summary (Appendix E, Page iv, Volume 2) indicates that the project will build 765 single family attached residential units. There are no definitions for this in the Trip Generation Guidelines 6th edition. If the units are single family units, the trip generation/unit would be around 10, not 7.5 as indicated on page iv.

Response 3: The trip generation rates used in the traffic study are taken from *Interim Guidelines for Traffic Impact Analysis of Land Developments*, published by the City of San Jose. This publication provides trip generation rates for different types of land uses, based on the City of San Jose's experience. The category applicable to this project is called "Single Family Attached," and it includes "duplexes, condos, townhouses, etc." The equivalent ITE categories are called "Condominium/Townhouse." The project does not include single-family detached homes; therefore, the trip generation per unit of 10, described in the comment, would not be appropriate. The trip generation estimate presented in the DSEIR is considered to be accurate.

Comment 4: Please provide level of service information for Capitol Expressway and Narvarez, a CMP intersection.

Response 4: The intersection of Capitol Expressway and Narvaez is included as a study intersection in the DSEIR. The level of service for this intersection under project conditions is described in Table 11 of the DSEIR (pg. 111).

J. SANTA CLARA VALLEY AUDUBON SOCIETY, DECEMBER 28, 2000

Comment 1: Thank you for the opportunity to comment on the Draft Supplementary Environmental Impact Report (EIR) for the Kaufman & Broad Communications Hill Residential Project (Project). As is noted in my October 27 letter to Project Manager Jodie Clark, this project raises a number of environmental concerns. Due to this area's relatively undeveloped (natural) state, the project's proximity to Canoas Creek, and the presence of serpentine soils, the land on which the project is proposed to be built is environmentally sensitive. The applicant and the City of San Jose

(City) must take greater consideration of this sensitivity and adjust the EIR to truly reflect the environmental impacts.

Response 1: The comment is acknowledged. Responses to specific comment are provided below.

Comment 2: Open Space
The EIR notes a significant loss of open space, which goes unmitigated despite the preservation of various steep slopes. The EIR should look to off-site mitigation opportunities to reduce this impact to less than significant. In particular, since serpentine habitats are impacted, the EIR should consider the acquisition of other serpentine lands in the south of San Jose or adjacent Santa Clara County for acquisition either in fee title or conservation easement. Such a mitigation measure was included in the Dow Drive project on Communications Hill, where the city found it feasible to mitigate impacts to Santa Clara Valley Dudleya through off-site acquisition. This possible mitigation measure may also be useful in mitigating impacts to serpentine outcroppings and the dudleya, thus serving a multifold purpose. We know that at least one landholder in the Diablo Range (Castle and Cooke) has sold conservation easements for this purpose, indicating that this measure is feasible.

Response 2: As described in the DSEIR, the proposed project is a second step in the implementation and approval process for the Communication Hill Specific Plan, which was approved in 1992. The Specific Plan EIR (October 1991) evaluated, at a programmatic level, the potential impacts of high density development One of the impacts identified in the Specific Plan EIR was a significant unavoidable loss of open space. The DSEIR (pg. 20) states that the proposed project would result in the same significant loss of open space as identified in the Specific Plan EIR. The DSEIR (pg. 86) does identify the purchase of a conservation easement on property with an existing Dudleya population as an alternative means to mitigate the project's impacts to Dudleya. This mitigation measure, however, is not proposed by the project.

Comment 3: It is unclear from the EIR whether the Project complies with San Jose or the Communications Hill Specific Plan standards regarding public parks. Dedication of 1.3 acres of parkland for the Project's 765 residential units would appear to be well below the city's standard. This should be analyzed as a potentially significant impact based on inconsistency with the city's General Plan and/or the Specific Plan. In addition, this same impact (lack of public park lands) should be analyzed on a cumulative basis for the area. For example, a similar lack of dedicated park acreage occurred on the Kaufman and Broad development on the Rubino site adjacent to Communications Hill. A cumulative parks analysis is needed.

Response 3: As noted in the previous response to Comment 1, the proposed project is part of a larger planned development, the Communications Hill Specific Plan. The Specific Plan identifies particular locations within the Specific Plan area to be developed for public park uses. The proposed project will dedicate 1.3 acres to the City for a public park. Buildout of the project, as well as the entire Specific Plan, would be subject to the requirements of the City's Parkland Dedication Ordinance. Buildout of the entire Specific Plan is expected to include six public parks totaling 17.8 acres, plus a 5-acre playfield next to an elementary school. This totals 22.8 acres of park and playfield uses. The combination of the proposed park and open space areas and compliance with the City's Parkland Dedication Ordinance will ensure that the proposed project and overall Specific Plan will not result in a significant cumulative impact upon parks.

99 - 083

Comment 4: **Wildlife Diversity**
The mitigation measures designed to address the loss of serpentine soils and its associated native grassland habitat are inadequate. Because of its unique ability to sustain native species, serpentine soils must be given special consideration and a greater attempt to conserve them or to mitigate for their loss must be made. The mitigation plan fails to include the land that will be lost to impervious surfaces. A proper mitigation plan would include not only measures to restore serpentine grassland habitats on-site, but also off-site easements that would compensate for the total loss of these valuable soils.

Response 4: The biological value of the serpentine grassland habitat on the site is limited, due to the fact that it is almost entirely dominated by non-native species. The most important serpentine native on the site is the Santa Clara Valley dudleya, the impacts and mitigation for which are described separately in the DSEIR. The loss of foraging opportunities available on the site is acknowledged (DSEIR pgs. 72 and 86). The disturbance to non-native grasslands on the site, some of which are on serpentine soils, are not a great impact, by itself. The mitigation measures described in the DSEIR are considered adequate to reduce the project's impact to a less than significant level, because the impacted area is dominated by introduced annual species, not native species. The text of the DSEIR (pgs. 44, 72, and 78) has been revised to clarify the value of the serpentine grassland habitat on the site, the impacts to grassland habitat, and the mitigation measures for impacts to grassland habitat. The revised text is presented in Section IV, **Revisions to the Text of the DSEIR**, of this document.

Comment 5: The EIR disregards the significance of this project's location by ignoring the United States Fish and Wildlife Service's (FWS) designation of this land as critical habitat for the Bay Checkerspot Butterfly. When considering the significance of the project's impacts, the EIR states one of its thresholds to be, "conflict with any applicable land use policy adopted for the purpose of avoiding or mitigating an environmental effect." (p.18) Clearly, the purpose of designating this area as critical habitat was to avoid negative environmental impacts and to preserve the integrity of this vital land. Because the applicant does not acknowledge the importance of this designation, the EIR fails in meeting its own threshold of significance and in including a mitigation plan for the loss of this serpentine-rich, critical habitat. Until these issues are addressed, the EIR is inadequate.

Response 5: On October 16, 2000 the USFWS released a proposed rule for designating critical habitat for the Bay checkerspot butterfly (BCB) (*Proposed Designation of Critical Habitat for the Bay Checkerspot Butterfly (Euphydryas editha bayensis)* 50 CFR Part 17:61218-61244). A total of 26,182 acres of land fall within the boundaries of what the USFWS proposes to designate as critical habitat. The proposed designation has not been finalized. If the designation is finalized and includes Communications Hill as "critical habitat" for BCB, the designation will be relevant under the Endangered Species Act, but will not constitute a "land use policy" under CEQA; the USFWS has no "land use policy" authority.

As part of its proposal, the Service has designated the 443-acre Communications Hill as Critical Habitat Unit #6. They stated "the butterfly has been documented on site in the past, but no recent comprehensive surveys for the species have been conducted in the area. Whether the unit is currently occupied is not known."

The DSEIR did not simply disregard this proposal, but instead, based its conclusion that the project would not adversely impact Bay checkerspot butterflies and/or the species' habitat on a thorough review of the best scientific and commercial data available for this species at this location. Review of all known databases, museum and private collections, and extensive

surveys of Communications Hill since the mid-1980's provide strong evidence that the BCB is absent from the Communications Hill. Aside from a possible lone transient, no life stages have ever been recorded from the Hill. Therefore, the BCB has never been recorded breeding from the Hill. This is quite notable, as the species has frequently been detected from all its known localities with rather low survey efforts. There is no reasonable basis to suspect that the species may have occurred on Communications Hill undetected during the last 50 or so years.

The Service's recent proposal to include the 443 acres of Communications Hill as Critical Habitat (Unit #6) is not supported by any empirical evidence that the butterfly ever existed on the Hill. The Service is apparently not fully aware of the level of effort that that has been expended within this Unit by several of the experts of the species, as well as the unanimous conclusion by these experts that the species is lacking from the site and there is no evidence that it ever occurred on the Hill. Furthermore, there is no evidence to suggest that Communications Hill functions as a stepping-stone to allow butterflies to immigrate/emigrate from known breeding sites (e.g., Jasper Ridge and Silver Creek Hills). Nor is there any evidence that this Hill has functioned in any known way to further the continued existence of the species. Any suggestion that this site may be beneficial for the species would necessarily be grounded on speculation.

Comment 6: The EIR acknowledges a significant, cumulative, unmitigated impact on ruderal and grasslands habitats, resulting in a significant loss of wildlife diversity in the region. Requiring the project to use only native plant materials in landscaping should be considered as a mitigation for this impact. This should include the elimination of turf grasses on public and private areas of the project site (except perhaps the public park) and requirements that public and private areas be managed for native grasses, shrubs, and trees. This is a feasible mitigation, as it could still fulfill all project objectives and has been accomplished in development projects in surrounding communities.

Response 6: The project already includes the use of native plant materials in public, non-developed areas of the site (with the exception of the public park), to reduce the project's impacts to grassland habitat to a less than significant level (refer to DSEIR page 78). Given that the project proposes a high-density, urban residential environment, it is unlikely that landscaping private areas with only native species and eliminating all turf would provide adequate mitigation for the loss of foraging habitat on the site. For this reason, the DSEIR (page 86) acknowledges that the project will result in a significant, unavoidable loss of foraging habitat on the site.

Comment 7: An Alternative should be considered which utilizes avoidance of the Santa Clara Valley dudleya habitat but does not significantly reduce the number of residential units. It is difficult from the EIR's scant discussion of alternatives to understand whether this may be feasible. Possible methods of achieving this alternative would include reducing the size of the individual units in order to place more units on a given area of land or reducing the amount of landscaping in and around the units in order to aggregate that open space as public park area.

Response 7: The alternatives described in the DSEIR (Avoidance of Dudleya Alternative and Avoidance of Sensitive Biological Areas Alternative) avoid the project's impact to Santa Clara Valley dudleya, while still conforming to the density requirements of the previously approved Communications Hill Specific Plan. Further reducing the size of the individual units or reducing the amount of landscaping, in order to increase density, as noted in the comment, would not conform to the Specific Plan.

99 - 083

Comment 8: The EIR notes that Santa Clara Valley dudleya moves from one rock outcropping to another. Elimination from one area and colonization of another appears to be part of the plant's survival mechanism in the area. Given that the Project will eliminate many of these outcroppings, will the plants have sufficient areas remaining to continue this survival mechanism?

> **Response 8:** The proposed mitigation translocation plan should ensure that an adequate area and number of available "niches" occur within the 10-acre restoration site. The experience of the consulting biologists is that restoration sites can be easily designed to comprise a dense, almost 100%, cover of serpentine boulders and rocks of varying sizes, and serpentine soil to create far more niche space than available naturally.

Comment 9: The EIR should contain a discussion of the success or failure of the Santa Clara Valley dudleya population on the Dow Drive site on Communications Hill. This is the closest mitigation site and therefore may give the best indication of whether mitigation on the Project site will be successful. A brief discussion of mitigation measures taken on the Dow Drive site and their results compared to success criterion would suffice.

> **Response 9:** The Dow Drive mitigation site was only implemented one year ago and, therefore, has not been in place long enough to accurately determine success or failure. The proposed mitigation plan has been developed by professional consulting biologists, based upon their best knowledge and experience at this time.

Comment 10: Water Issues
Due to Canoas Creek's propensity to flood, the build out of this project and the resultant the increase of 60-80% in the amount of impervious surfaces will only further exacerbate the problem. In order to best understand this project's impacts, a study should be conducted to consider the percentage increase in flooding of Canoas Creek caused by this project. While the EIR describes a temporary, local detention basin, the applicant should also consider a longer term, regional detention facility to control the cumulative increase to the creek.

> **Response 10:** The hydrology report prepared for the project analyzed the potential impact of the proposed project, as well as the impact from cumulative development on Canoas Creek and the Guadalupe River. A copy of the revised hydrology report is presented in its entirety as an attachment to Section IV, **Revisions to the Text of the DSEIR**, of this document. As described in the hydrology report, the City of San Jose has proposed permanent detention storage ponds within the Communications Hill Specific Plan to mitigate for the increased flows due to the Specific Plan development. The Specific Plan includes detention ponds in both the Narvaez and Hillsdale drainage areas. The proposed project includes both temporary and permanent detention ponds in the Hillsdale Avenue drainage system to serve the project and the future upstream development. The design criteria for the detention pond system would be to allow no net increase in the flow rate to Canoas Creek as a result of the project.

Comment 11: Stating that the Project will prepare a Storm Water Pollution Prevention Plan (SWPPP) in order to mitigate potentially significant impacts on water quality to a less that significant level is not satisfactory. Recent research by SCVAS shows that significant number of construction sites are out of compliance with their SWPPP's and that the city shows little ability or inclination to monitor these sites for compliance of enforce these permits. This fact is confirmed by the Regional Water Quality control Board in their letter dated December 2000 noting at least six sites currently in violation (see attachment). The City even failed to respond adequately to that letter by neglecting to complete all of the required site inspections. Therefore, this mitigation has proven unsuccessful and

can not be relied upon in the manner this EIR attempts. A sufficient mitigation measure would spell out the measures to be taken on the site to reduce water quality impacts, provide measurable success criteria for those measures, and ensure an adequate level of enforcement (e.g. the site will be inspected at least X times....).

> **Response 11:** The DSEIR (pg. 43) describes the specific measures that would be implemented by the project to prevent storm water pollution and minimize potential sedimentation of the Guadalupe River during construction. The intent of the City is to comply with the NPDES permit requirements and this project would be required to comply with the permit requirements. The noncompliance with other projects is not related to this project.

Comment 12: Miscellaneous
Please explain how the Communications Hill Specific Plan calls for a "pedestrian-oriented" community with mixed uses while the Project EIR states that "The Project's location in hilly terrain limits the potential for non-auto modes of travel" and notes that adoption of non-auto modes of travel would have next to no impact on traffic and air quality. Does this mean the Project is inconsistent with the Specific Plan? More likely, the Specific Plan contains the kind of language that the city likes to talk about, but not really follow up on.

By addressing the above mentioned concerns and perhaps considering greater off-site mitigation plans, the applicant can ensure the adequacy of the EIR and the overall protection of our natural resources.

> **Response 12:** The project does conform to the Specific Plan with regards to being a "pedestrian-oriented" development. Refer to the response to Comments 10 and 11 of the Santa Clara Valley Transportation Authority for further information regarding the pedestrian amenities of the project. Although the project provides for a pedestrian-oriented community, the traffic and air quality impact analyses described in the DSEIR assume standard trip generation rates in order to provide a conservative estimate of the project's impacts.

99-083

IV. REVISIONS TO THE TEXT OF THE DRAFT SEIR

The following section contains revisions to the text of the Draft Supplemental Environmental Impact Report, Communications Hill Kaufman & Broad Residential Project, dated November 2000. Revised or new language is underlined. All deletions are shown ~~with a line through the text~~.

Page vii Summary Summary Description of the Proposed Project

REVISE the third and fourth sentences of the first paragraph as follows:

The project proposes a Planned Development (PD) rezoning of the 129.2-acre site, for the purposes of developing ~~the development of~~ up to 765 multi-family residential units, consisting of townhomes, row homes, condominiums, and other medium to high-density attached dwellings on the site, which is consistent with the Communications Hill Specific Plan. Substantial grading on approximately 108 acres of the site would be required for construction of the proposed development.

Page x Summary Biological Resources

REVISE the second sentence of the first mitigation summary paragraph as follows:

All non-disturbed grassland shall be preserved and placed into a conservation easement preventing future development or active use of those areas.

Page x Summary Biological Resources

REVISE the first sentence of the second mitigation summary paragraph as follows:

To avoid the nesting season of raptors and sensitive songbirds, tree removals shall not take place between February 15 and July 31 ~~June 30~~.

Page 5 Section I, C. Description of the Proposed Project

REVISE the first sentence of the section as follows:

The project proposes a Planned Development (PD) rezoning of the 129.2 –acre site, for the purpose of developing ~~The project proposes the development of~~ up to 765 residential units, consisting of townhomes, row homes, condominiums, and other medium to high-density attached dwellings.

Page 5 Section I, C. Description of the Proposed Project

DELETE the third sentence of the second paragraph of the section, as follows:

~~In addition, the project will also dedicate the land around the AT&T communication tower to the City for park uses.~~

99-083

Page 5 Section I, C. Description of the Proposed Project

REVISE the first sentence under the subheading **Site Grading**, as follows:

Substantial grading would be required on 108.6 acres of the site for construction of the proposed development (refer to Figure 5A and Figure 5 (REVISED).

Page 7 Section I, C. Description of the Proposed Project

ADD Figure 5A, *January 2001 Limit of Grading*, to the DSEIR, and **REPLACE** Figure 5, Conceptual Grading Plan, with the Figure 5 (REVISED) presented on the following pages of this document.

Page 10 Section I, C. Description of the Proposed Project

REVISE the second paragraph under the heading **Infrastructure Improvements**

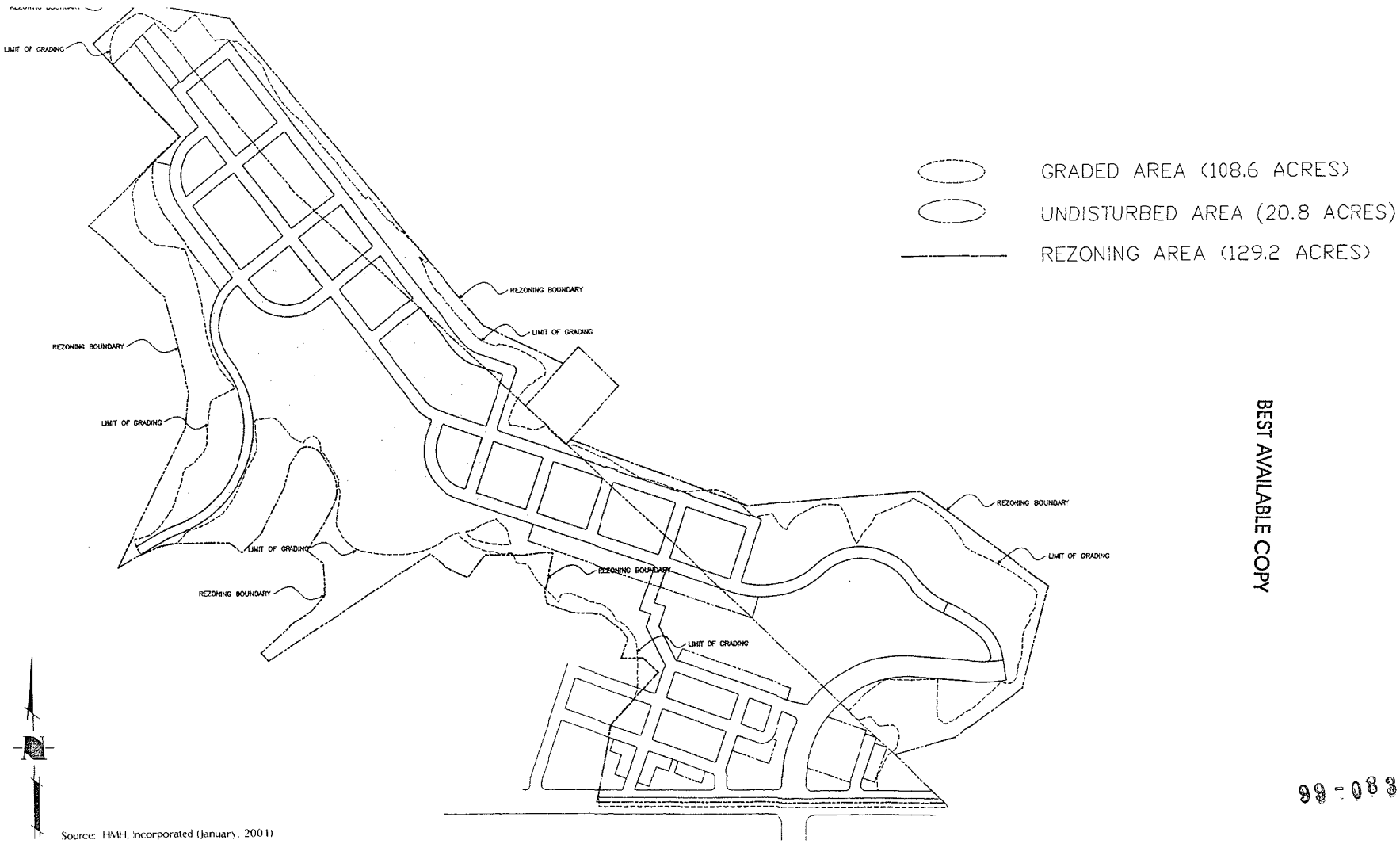
A new water system will be constructed in order to meet the demand for domestic water use and fire service on the site and the remainder of Communications Hill. Alternative studies for the water system will be evaluated, including: a below grade (or underground) tank verses an elevated tank on top of the hill~~, and a pump with a back up generator (possibly without a tank) at the foot of the hill~~. Because the type of water system is not yet determined, this EIR evaluates the potential impacts of the elevated tank on top of the site, since the elevated tank would result in greater environmental (particularly visual) impacts than the other water supply options.

The project includes construction of an electrically operated water pump station to provide water to the top of Communications Hill. The pump station will consist of an electrical room and a pump house with up to five pumps, and a diesel generator on a concrete slab above a vaulted diesel storage tank of up to 500 gallons. The pump station will be located on either the uphill side or just below the proposed detention pond at the southeast end of the project site (refer to Figure 5), which is approximately 300 feet from the closest residences. The pump station would be located within a masonry enclosure for noise insulating, aesthetic, and security purposes. The diesel generators would be operational only during maintenance periods and in the event of electrical failure to the pump station. The pump station would be maintained and operated by the San Jose Water Company.

Page 36 Section II, C. Drainage, Flooding and Water Quality

REVISE the first paragraph of the section as follows:

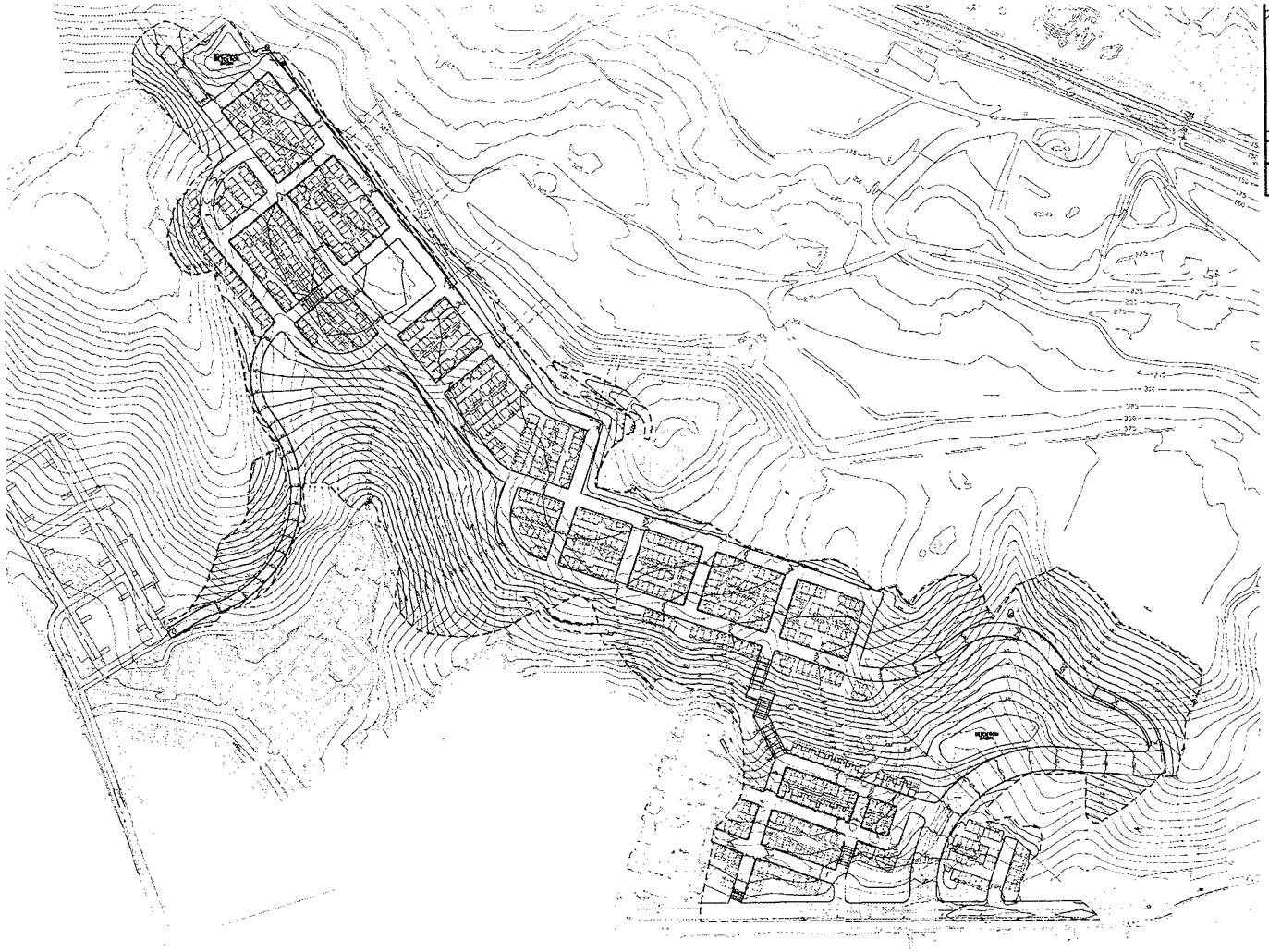
The following discussion is based upon a Hydrology Study prepared by *Schaaf & Wheeler, Consulting Civil Engineers*, for the project and revised in January 2001, as well as other available information. A copy of the final Hydrology Study is provided in Appendix B of Section IV, **Revisions to the Text of the DSEIR**, of this document. ~~this SEIR.~~

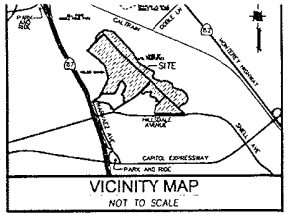


Source: HMH, Incorporated (January, 2001)

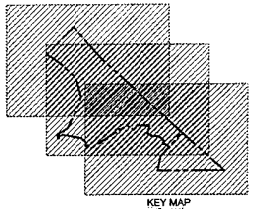
BEST AVAILABLE COPY

99-083





VICINITY MAP
NOT TO SCALE



KEY MAP
1"=1000'

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR (MAJOR)
- LIMITS OF ROUGH GRADING
- BENCH WITH SWALE
- DRAINAGE SWALE
- RETAINING WALL (5' Max Ht)
- STORM DRAIN (PROPOSED)
- STORM DRAIN MANHOLE (PROPOSED)
- CURB INLET (PROPOSED)
- STORM DRAIN (EXISTING)
- STORM DRAIN MANHOLE (EXISTING)

GENERAL NOTES

1. PROVIDED, AS NECESSARY

99-083

GRAPHIC SCALE
150 0 75 150 300 600
(In Feet)

BEST AVAILABLE COPY

Page 40 Section II, C. Drainage and Flooding Impacts

REVISE The second paragraph on the page as follows:

The 100-year peak runoff was estimated to be 187 ~~191~~ cfs for development conditions, including the proposed project, an increase of 14 ~~18~~ cfs over existing conditions. The majority of this increase in runoff within Subarea F - North would result from the proposed project. The Helzer Ranch project was estimated to contribute two (2) cfs of this increase. Therefore, the proposed project would contribute an increase of up to 12 ~~16~~ cfs to the 100-year peak runoff flow.

Page 40 Section II, C Drainage, Flooding and Water Quality

REVISE the text of the last paragraph on the page as follows:

Due to the limited capacity of the storm drain systems which drain to Canoas Creek and the large amount of storage in the watershed area, the peak flows in the channel last for a long period of time during the 100-year design storm event. The estimated 100-year peak flow rate at Capitol Expressway is 1,963 cfs, but the channel flow rate is over 1,800 cfs for more than 22 hours. Therefore, the increased runoff from Subarea F - North and Subarea F – East would contribute to the peak channel flows in Canoas Creek. ~~Subarea F would contribute an approximately 18 cfs increase in the 100-year peak flow rate in Canoas Creek at the Guadalupe River, of which approximately 16 cfs would be caused by the proposed project.~~ Due to the project ~~T~~the 100-year peak flow rate in Canoas Creek at the Guadalupe River would increase by approximately 16 ~~19~~ cfs, an increase of 0.81 ~~9~~ percent. ~~Most of this increase would be caused by the proposed project.~~

Page 44 Section II, D. Biological Resources

REVISE the second, third, and fourth paragraphs on the page as follows:

A total of 109 species of vascular plants were observed on the Communication Hill site. Of these, 69 species are native and 40 species are non-native. The classification and mapping of habitat types on the site closely follows that of H.T. Harvey and Associates (1992). The study area has been subject to disturbance through intensive grazing, quarrying, and other development activities. Four habitat types were identified within the study area: non-native grassland; Diablan sage scrub; freshwater seep; and developed/ruderal. Two distinct phases of non-native grassland are recognized: one phase on serpentine substrate, and the other phase on non-serpentine substrate. Due to the disturbance that has occurred on the site, there is very little native serpentine grassland habitat present on the site; the grassland habitat is almost entirely dominated by non-native species, predominantly introduced annual grasses. Non-native grassland occupies most of the study area. Patches of Diablan sage scrub occur at several locations within the grassland. One small area of freshwater seep habitat occurs in the southern portion of the study area. The developed/ruderal habitat type, a habitat type associated with human occupation and intensive disturbance, encompasses the area around the AT&T communications facility and the two developed areas near the southeast end of the site. Each of these habitat types is briefly described below. Figure 10 depicts the distribution of habitat types within and in the immediate vicinity of the study area.

Non-Native Grassland

Non-native grassland occupies most of the Communication Hill study area. Two phases of this habitat type are recognized: non-native grassland on non-serpentine substrate, and non-native grassland on serpentine substrate. The non-native grassland on most of the site occurs on serpentine substrate. Non-native grassland on non-serpentine substrate is restricted to a few areas along the southern and western perimeter of the site.

The non-native grassland habitat type is characterized by a generally dense cover of grasses and associated herbs. Locally, especially where the soil is thin, the vegetation cover may be relatively sparse. The non-native grassland in the study area has been subject to varying intensities of grazing in the recent past, and cattle were present east of the north-south fence crossing the site at the time of the survey. A portion of the non-native grassland at the extreme southeast end of the study area was tilled for fire suppression sometime between 28 March and 14 May. As described above, the disturbed grassland habitat on the site is almost entirely dominated by non-native species due to the grazing, quarrying, and fire suppression measures (disking) that have historically and recently occurred on the site. This is true of both the serpentine and non-serpentine substrate. The habitat value of the serpentine grassland, therefore, is very low (with the exception of the presence of Santa Clara Valley dudleya, which is discussed subsequently under special status plant species.)

Page 72 Section II, D Biological Resources

REVISE the discussion under the heading **Loss of Ruderal/Non-Native and Serpentine Grassland Habitats** as follows:

The proposed project development would result in the conversion of 129.2 ~~approximately 130~~ acres of ruderal and serpentine grassland habitat to high-density attached residential development. Of the 129.2-acre project site, 108.4 acres, or about 84% of the site, would be graded. These habitats support a variety of plant and animal species. The loss of these habitats on the site would contribute to the reduction in the overall carrying capacity of the project area for a variety of common animals like Killdeer, Western Meadowlarks, Mourning Doves, California ground squirrels, western fence lizard, Botta's pocket gopher, and others. Predators such as gopher snakes, Red-tailed Hawks and other raptors, some of which are special-status species, would also lose foraging habitat on the site.

The graded areas of the site are made up of serpentinite and non-serpentinite soils. Serpentinite soils represent 64.5 acres of the graded area and non-serpentinite soils represent 43.9 acres of the graded area.[6] Approximately one-half of the graded area on the site (54.5 acres) will remain undeveloped and will not be covered with impervious surfaces. This calculated pervious area includes the proposed parks, but does not include the yard areas of the individual units. The graded, pervious area is comprised of 31.8 acres of serpentinite soils and 22.7 acres of non-serpentinite soils.

[6] Serpentinite areas are based on digitized data from the SITE PLAN AND GEOLOGIC MAP of the soils report prepared by *Lowney Associates* for the project site.

Annual grasslands enhance the value of surrounding habitats by providing foraging and hunting opportunities for raptors that may nest in suitable tree habitat in the adjacent areas. The habitat value of the grassland area is not limited to raptors; many small birds, rodents and insects use this habitat type_The project site is dominated by disturbed non-native annual grasses, which are not considered to be sensitive habitats. This is true of both the serpentine and non-serpentine substrate. In addition, the habitat value on the site has been reduced by the grazing, quarrying, and fire suppression measures (disking) that have historically and recently occurred on the site. However, it should be noted that this habitat is declining throughout the State. The loss of 100 to 110 ~~approximately 130~~ acres of ruderal habitats as a result of the project would contribute to the reduction of such habitats in the areas, and thereby contribute to a reduction in the overall variety and diversity of wildlife species present in the project site area, including reducing foraging opportunities available to Loggerhead Shrike, Northern Harrier, and White-tailed Kite, which are special-status bird species. Biological impacts from conversion of annual grassland to residential development units and landscaping would be considered a significant impact.

Due to the disturbance that has occurred on the site, there is very little native serpentine grassland habitat present on the site; the grassland habitat is almost entirely dominated by non-native species. The habitat value of the serpentine grassland habitat, therefore, is very low (with the exception of the presence of Santa Clara Valley dudleya, impacts to which are discussed separately.) The loss of habitat value of the serpentine grassland habitat, by itself, is limited, and barely meets the criteria of a significant impact. The loss of foraging opportunities provided by the serpentine and non-serpentine non-native grassland habitat is discussed above.

The loss of ruderal and serpentine grassland habitats as a result of the project would contribute to a reduction in the availability of such habitats in the area and thereby contribute to a reduction in the diversity of wildlife species present in the project area, and would reduce foraging opportunities available on the site to special-status bird species. (Significant Impact)

Page 74 Section II, D. Biological Resources

ADD the following text before the last paragraph entitled ***Loggerhead Shrike***:

Burrowing Owl

No burrowing owl or signs of owls were detected during surveys of the project site. Potential nest sites were also lacking, due to the lack of ground squirrel burrows. The project, therefore, would not result in significant impacts to burrowing owl or their habitat.

- **The project would not result in significant impacts to burrowing owls. (Less than Significant Impact)**

Page 78 Section II, D. Biological Resources 99-083

REVISE the discussion of mitigation measures under the heading **Loss of Ruderal/Non-Native and Serpentine Grassland Habitats** as follows:

The loss of non-native ~~and~~ serpentine grassland habitats as a result of the project would contribute to a reduction in the diversity of wildlife species present in the project site area, including precluding or limiting the presence of special-status species. Mitigation measures to reduce this impact would include ~~one or more of~~ the following ~~alternatives~~:

- With the exception of the public park, the ~~N~~ non-native grassland habitat on the pervious areas shall be replanted ~~replaced~~ after grading by seeding with a mix of California native grasses and forbs, and/or planting of plugs of native grasses. Seeding/plugging shall be performed by October 30th or before the first significant winter rainfall in the year of grassland removal. The planting of natives is an effort to reintroduce native grasses and other native species to the site. Seeding with native species will ensure that the maximum number of natives that can be supported on the site without an active/ongoing intervention/maintenance program will be given a chance to establish themselves and persist there to the greatest extent possible. Replaced grassland would allow reestablishment of this habitat type on non-developed portions of Communications Hill following grading. Once established, wildlife species that utilize grassland habitats would re-colonize those areas that were restored.

- Approximately 20.8 acres of the 129.2-acre project site will not be graded by the project. The ungraded area is comprised of 13.9 acres of serpentinite soils and 6.9 areas of non-serpentinite soils. All non-disturbed grassland shall be preserved and placed into a conservation easement preventing future development or active use of those areas. This action would allow existing conditions to remain in perpetuity.

- Mowing for fire control shall be performed around the perimeter of any grassland areas, leaving as much of the internal area intact as allowable to local fire authorities, and leaving the mowed area no higher than 18 inches.

Conclusion: **Implementation of the above mitigation measures would reduce impacts to grassland habitats to a less than significant level. (Less Than Significant Impact with Mitigation)**

Page 78 Section II., D Biological Resources

REVISE the first bullet under Mitigation Measures for Loss of Nesting Habitat for Birds, Including Sensitive Species such as Raptors and Migrating Songbirds:

To avoid the nesting season of raptors and sensitive songbirds, tree removals shall not take place between February 15 and July 31 ~~June 30~~, or as determined by CDFG on a case-by-case basis. If tree removals are necessary between February 15 and July 31, then they will be preceded by a pre-construction survey by a qualified ornithologist, to ensure that no nesting raptor or chicks will be impacted by the project.

99-083

Page 82 Section II., D. Biological Resources

ADD the following text after the heading **Special Status Animal Species**:

Burrowing Owl

There are currently no burrowing owl on the site and the project is not expected to result in impacts to burrowing owl. Nevertheless, preconstruction surveys would be conducted to ensure that no burrowing owls would be impacted by the project, in the unlikely event owls moved onto the site and occupied burrows.

In conformance with federal and state regulations protecting raptors against direct "take," a qualified ornithologist would conduct pre-construction surveys for Burrowing Owls prior to any soil-altering activity, construction, or development on the site. The preconstruction surveys should be conducted per CDFG guidelines (currently no more than 30 days prior to the start of site grading), regardless of the time of year in which grading occurs. These surveys should occur on and within 250 feet of the project site. If no Burrowing Owls are found, then no further mitigation would be warranted. If owls are located on or immediately adjacent to the site, a construction-free buffer zone around the active burrow should be established by a qualified owl biologist in consultation with CDFG. No activities, including grading or other construction work, would proceed until the buffer zone is established, or a CDFG approved relocation of the birds has been performed (such relocations can occur only during the non-reproductive season (September through January).

Conclusion: **Implementation of the above mitigation measures would ensure that the project does not result in impacts to burrowing owl, in the unlikely event they move onto the site prior to construction. (Less than Significant Impact Before and After Mitigation)**

Page 84 Section II, D Biological Resources

REVISE the last sentence of the first bulleted paragraph under the heading **Loss of Ordinance Trees** as follows:

The loss of ordinance trees on the site would be mitigated by moving or replanting 24-inch box specimen trees within the new landscaped areas throughout the site at a minimum ratio of 1:1 (replaced: impacted) for ordinance size tress removed.

Page 86 Section II, D Biological Resources

ADD the following text at the top of the page, after the heading **Mitigation Measures Not Proposed by the Project**:

To provide a greater assurance that the project's impacts to dudleya will be mitigated, the following measure could be added, in combination with the proposed dudleya relocation and transplanting mitigation plan:

A greater assurance of the preservation of the species could be attained by the applicant posting a bond on an existing property with an equivalent population. If the

mitigation proves to be unsuccessful at the end of the monitoring period, the property would be retained in a permanent conservation easement and the equivalent population would be preserved in perpetuity. This measure would provide a fail-safe mitigation for the project's impacts.

Conclusion: **Implementation of the proposed measure (not currently included in the project) would ensure that the project's impacts to Santa Clara Valley dudleya are reduced to a less than significant level. (Less than Significant Impact with Mitigation)**

Page 123 Section II, G Air Quality

ADD the following text after the first paragraph:

The project includes an electrically operated water pumping station to serve the upper portions of Communications Hill. During electrical power outages, the pump station will be operated by power provided by diesel back-up generators. The pump station would be located in the vicinity of the detention pond at the southeast end of the site, approximately 300 feet from the closest residence. Diesel generators are typically tested once per month as a part of routine maintenance. The pump station will be operated and maintained by the San Jose Water Company and the diesel generator would fall under their master permit with the Bay Area Air Quality Management District. Due to the infrequent and temporary use of the generator, it would not result in a significant air quality impact.

Page 132 Section II, H Noise

ADD the following text before the section ***General Construction Phase Impacts***

Operational Noise Impacts

The project includes a water pump station that will be used to provide water to the top portion of Communication Hill. During electrical power outages, the pump station will be operated by power provided by diesel back-up generators. The pump station would be located in the vicinity of the detention pond at the southeast end of the site, approximately 300 feet from the closest residence. Diesel generators are typically tested once per month as a part of routine maintenance. The pump station will be housed within a masonry enclosure, to ensure that the noise from the generators does not exceed 60 decibels at the property line of the nearest residence. Due to the infrequent and temporary use of the generator, in addition to the provision of the masonry enclosure, it would not result in a significant noise impact.

- **The proposed emergency diesel-generated pump station would not result in a significant noise impact. (Less than Significant Impact)**

Page 153 Section II, L. Utilities

REVISE the second paragraph under **Storm Drainage** as follows:

Runoff from portions of the quarry area on the northeast side of Communications Hill (which are not within the San Jose city limits) does not drain to the City storm drain

system for small storm events. This runoff drains to detention ponds and depressions within the quarry. For small storms, the runoff evaporates or percolates into the ground. For large storms, the area may overflow into other areas served by the City storm drain systems (described above), which discharge to Coyote Creek.. ~~developed portions of the site vicinity which are outside of the City of San Jose limits does not enter the City storm drain system. This runoff is conveyed to detention basins for evaporation and percolation into the ground.~~

Page 159 Section III Availability of Public Services

REVISE the text on the second centered heading under **Fire Protection**

Project Effects ~~Affects~~ on Fire Protection Service

Page 160 Section III Parks and Recreation

DELETE the fourth sentence in the second paragraph of the section, as follows:

~~In addition, the project will also dedicate the land around the AT&T communication tower to the City for park uses.~~

Page 162 Section IV **Cumulative Loss of Open Space**

DELETE fourth sentence of the second paragraph in the section, as follows:

~~In addition, the project will dedicate the land around the AT&T communication tower to the City for park uses.~~

99-083

COMMUNICATIONS HILL
K & B RESIDENTIAL DEVELOPMENT

TRANSPORTATION IMPACT ANALYSIS

Prepared by:

Hexagon Transportation Consultants, Inc.

December 2000

99-083

Communications Hill
K&B Residential Development

Transportation Impact Analysis

Prepared for:

David J. Powers and Associates

Prepared by:

Hexagon Transportation Consultants, Inc.

December 4, 2000

99-083

Table of Contents

Executive Summary iv
1. Introduction 1
2. Existing Conditions 9
3. Background Conditions 21
4. Project Impacts and Mitigation Measures 27
5. Future Growth Conditions 42
6. Conclusions 44

Appendices

Appendix A: Traffic Counts
Appendix B: Approved Trips Inventory
Appendix C: Volume Summary Tables
Appendix D: Level of Service Calculations
Appendix E: Signal Warrant Sheets
Appendix F: Capitol Expressway Mitigation Feasibility Drawing

List of Tables

Table ES 1 Intersection Level of Service Summary viii
Table ES 2 Freeway Level of Service Summary ix

Table 1 Intersection Level of Service Definitions Based on Delay 6
Table 2 Freeway Segment Level of Service Definitions Based on Density 7
Table 3 Existing Intersection Levels of Service 17
Table 4 Existing Freeway Levels of Service 19
Table 5 Background Intersection Levels of Service 25
Table 6 Project Trip Generation Estimates 30
Table 7 Project Intersection Levels of Service 35
Table 8 Project Freeway Levels of Service 37
Table 9 Signal Warrant Analysis Summary 38
Table 10 Vehicle Queuing and Storage Capacity 39
Table 11 CMP Intersection Levels of Service Under Future Growth Conditions 43

99-083

List of Figures

Figure 1 Site Location 2
Figure 2 Site Plan 3
Figure 3 Existing Bicycle Facilities 12
Figure 4 Existing Transit Service 13
Figure 5 Existing Lane Configurations 15
Figure 6 Existing Traffic Volumes 16
Figure 7 Background Traffic Volumes 24
Figure 8 Project Trip Distribution 31
Figure 9 Project Trip Assignment 32
Figure 10 Background Plus Project Traffic Volumes 34

99-088

Executive Summary

This report presents the results of the traffic impact analysis conducted for the Communications Hill residential development in San Jose, California. The project site is located east of SR 87 along the southern portion of Communications Hill, north of Hillsdale Avenue and east of Narvaez Avenue. The site is currently vacant. The project as proposed would contain 765 single family attached residential dwelling units. Access to the site will be provided via Narvaez Avenue, a project entrance at the intersection of Vistapark Drive and Hillsdale Avenue, two right-turn only driveways on Hillsdale Avenue on either side of Vista Park Drive, and the roadway just west of Vistapark Drive via two connections to the Lancaster Gate neighborhood.

The potential impacts of the project were evaluated in accordance with the standards set forth by the City of San Jose and the Congestion Management Program (CMP) of Santa Clara County. The study included an analysis of AM and PM peak-hour traffic conditions for 16 signalized intersections, 1 unsignalized intersection, 2 intersections where signalization is planned, and 5 freeway segments.

Project Trip Generation

The magnitude of traffic generated by the proposed project was estimated by applying to the size of the development the applicable trip generation rates. On the basis of the trip generation rates recommended by the City of San Jose, it is estimated that the project would generate 5,738 daily trips, with 574 trips occurring during the AM peak hour and 574 occurring during the PM peak hour. Using the specified inbound/outbound splits, the project would produce 201 inbound trips and 373 outbound trips during the AM peak hour and 373 inbound and 201 outbound trips during the PM peak hour. The trip distribution pattern for the proposed project was estimated based on existing travel patterns in the area and the locations of complementary land uses.

99 - 083

Project Impacts

Intersection Impacts

The results of the intersection level of service analysis show that one of the signalized study intersections would be impacted by the project according to City of San Jose and CMP level of service standards. The project would have a significant impact at the following signalized intersection:

SR 87 southbound ramps and Capitol Expressway

Freeway Impacts

The results of the CMP freeway level of service analysis show that three of the freeway segments analyzed would be impacted by the project according to county CMP level of service standards for freeways. The project would have a significant impact on the following freeway segments:

SR 87 northbound, Curtner Avenue to Almaden Expressway (AM peak hour)
SR 87 northbound, Almaden Expressway to Alma Avenue (AM peak hour)
SR 87 southbound, I-280 to Alma Avenue (PM peak hour)

Mitigation Measures

Measures have been recommended that would satisfactorily mitigate the project impact described above. Presented below are the recommended mitigation measures and the impacts they would mitigate.

SR 87 southbound ramps and Capitol Expressway. Convert the eastbound exclusive right-turn lane to a shared through/right-turn lane. This improvement can be made by restriping the eastbound approach. The existing bike lane that is located between the rightmost through lane and the right-turn lane would be relocated to the outside edge of the roadway. The fourth eastbound through lane would flow into the existing curb lane under the SR 87 overcrossing, which currently transitions to an exclusive right-turn lane at Narvaez Avenue. The exclusive eastbound right-turn lane at Narvaez Avenue would be converted to a shared through/right-turn lane. This would require restriping the west approach on Capitol Expressway at Narvaez Avenue. The existing turn island located on the southeast corner of the intersection would have to be modified to accommodate the additional eastbound through lane. This will also require the signal on the south leg to be modified, possibly relocating the signal pole and mast arm. The crosswalks on the south leg will need to be relocated to line up properly with the modified turn island. The pork-chop island on the south leg would need to be cut back to accommodate the new cross walk, and the south leg of the intersection would need to be restriped. The eastbound portion of the east leg of the intersection would need to be restriped with the forth through lane flowing into the lane currently used as a receiving lane for northbound right-turns. This receiving lane currently extends approximately 350 feet beyond the intersection and acts as a merge lane for northbound right-turns to move into the eastbound traffic flow. With the proposed improvements, this merge lane may need to be extended to allow eastbound through vehicles in the new curb lane to merge to the left with other through traffic. This should be accommodated within the existing right-of-way. With the added capacity of the additional eastbound lane, the minimum green time for that eastbound approach to the SR 87 southbound ramps can be reduced from 85 second to 78 seconds

and the minimum green time for the westbound approach can be reduced to 92 seconds. The resulting level of service at the SR 87 southbound ramps/Capitol Expressway intersection, during the PM peak hour, with the improvements would be LOS E with 46.1 seconds of average delay.

Freeway Segments. It is not feasible for any single development to pay for improvements to freeway segments, such as adding additional lanes, to add capacity to accommodate additional demand generated by project traffic. There is a Measure A/B project planned for SR 87 that will add HOV lanes in each direction, upgrading the freeway to a six-lane facility (2 mixed flow lanes and 1 HOV lane in each direction). However, it is unlikely that this freeway upgrade will be completed before the project is completed, therefore, this improvement cannot be considered as mitigation.

Other Transportation Issues

Unsignalized Intersections

The results of the peak-hour volume signal warrant checks show that the Caltrans peak-hour volume signal warrant would not be satisfied under project conditions at the unsignalized study intersection

Intersection Operations

The intersection operations analysis, based on the TRAFFIX level of service methodology, indicates that the following intersections would have inadequate storage capacity to accommodate estimated maximum vehicle queues:

Almaden Expressway and Foxworthy Avenue (WBL)
Narvaez Avenue and Capitol Expressway (EBL)
Narvaez Avenue and Hillsdale Avenue (EBL)

Recommended Improvements

Almaden Expressway and Foxworthy Avenue. Extend the existing westbound left-turn pocket to the maximum available length. This improvement can be made by restriping the westbound approach and may require some curb and sidewalk removal, depending on the length of the extension. Project trips account for only a portion of the traffic added to this intersection, therefore, the project should pay a fair share toward the cost of this improvement.

Narvaez Avenue and Capitol Expressway. Extend each of the existing eastbound left-turn lanes 45 feet. This improvement will require modifications to the existing raised median island. Project trips account for only a portion of the traffic added to this intersection, therefore, the project should pay a fair share toward the cost of this improvement.

Narvaez Avenue and Hillsdale Avenue. Lengthen the future eastbound left-turn lane from 150 feet to 180 feet. Since project traffic will account for a portion of the traffic added to this intersection, the project should pay a fair share toward the cost of this improvement.

Site Access and On-Site Circulation

The evaluation of the proposed site access and circulation for the project shows that the access point on Hillsdale Avenue should be designated as the main entrance to the project, with the Narvaez Avenue access acting only as a secondary entrance. Appropriate measures should be taken to ensure that the Hillsdale access point serves as the main entrance to the project.

Horizontal and vertical sight distance issues may arise as a result of roadway alignment and the hilly terrain of the project site. Any future on-site traffic control devices should be selected and located such that sight distance problems are alleviated.

Other Transportation Modes

The evaluation of bicycle, transit, and pedestrian facilities showed that demand for such facilities would increase with the construction of the project. New and unimproved streets in the area will be designed to standard City of San Jose widths to safely accommodate bicycle traffic. Sidewalks will also be built on new and unimproved streets. Hillsdale Avenue currently has several sections where the street is not widened to the planned width and no sidewalks are available. The sections are mainly under the SR 87 overpass and east of SR 87. As part of the Rubino residential development, the section of Hillsdale Avenue from SR 87 to Canoas Creek will be widened to four lanes and sidewalks will be constructed. The remaining section along the project frontage should have sidewalks installed by the project.

Transit service exists along Hillsdale Avenue that is not within a reasonable walking distance to future housing on the project site. The project would create demand for local bus service that would not be met by existing service. Therefore, as Communications Hill builds out, it may be desired to extend a bus route into the development.

Table ES-1

Intersection Level of Service Summary

	Peak Hour	Count Date	Existing Avg. Delay	Existing LOS	Background Avg. Delay	Background LOS	Project Avg. Delay	Project LOS	Project Inc. in Crit Delay	Project Inc. in Crit. V/C	Mitigated Avg. Delay	Mitigated LOS	Future Avg. Delay	Future LOS
Capitol Expwy and Monterey Rd (N)*	AM	3/22/00	9 3	B	13.7	B	14.0	B	0 3	0.007			14.4	B
	PM	3/22/00	10.3	B	11.9	B	12.2	B	0.0	0.000			12.2	B
Capitol Expwy and Monterey Rd (S)*	AM	3/22/00	25 8	D	29.2	D	31.0	D	2.4	0.013			37.3	D
	PM	3/22/00	8.7	B	9.2	B	9.4	B	0.2	0.002			9.5	B
Pearl Ave and Capitol Expwy*	AM	5/10/00	46.4	E	34 2	D	34.3	D	0.1	0.009			35.3	D
	PM	5/11/00	25.8	D	25.5	D	25.5	D	0.0	0.010			25 9	D
SR 85 SB off-ramp and Almaden Plaza	AM	5/25/00	4.6	A	4.6	A	4.6	A	0 0	0.000			4.6	A
	PM	5/25/00	8.5	B	8.7	B	8.7	B	0.0	0.001			8.8	B
Narvaez Ave and SR 87 NB ramps	AM	5/31/00	9.5	B	11.8	B	12.5	B	5.1	0.219			12.6	B
	PM	5/31/00	9.4	B	9.7	B	10 7	B	1.5	0.038			10.9	B
Pearl Ave and Hillsdale Ave	AM	6/1/00	18.6	C	18.4	C	18.7	C	0.5	0.005			18.8	C
	PM	6/1/00	14.5	B	17.5	C	17.8	C	0.7	0.045			17 9	C
Almaden Expwy and Foxworthy Ave/a/	AM	5/23/00	15.2	C	25.3	D	29.6	D	5.7	0.041			32 2	D
	PM	5/23/00	16.9	C	21.1	C	22.6	C	1.0	0.011			22.9	C
Almaden Expwy and Branham Ln*	AM	6/14/00	75.3	F	76.9	F	77.7	F	1.8	0 003			94.5	F
	PM	3/14/00	42.7	E	43.9	E	43.9	E	0.0	0.002			46.0	E
Almaden Expwy and Blossom Hill Rd*	AM	6/15/00	42.6	E	43.7	E	43.8	E	0.4	0.003			47.3	E
	PM	3/15/00	122.6	F	145.5	F	146.4	F	-0.3	0.002			168.9	F
Almaden Expwy and Cherry Ave	AM	5/24/00	18.6	C	19.0	C	19.0	C	0.1	0.002			19 6	C
	PM	5/24/00	24.5	C	33.0	D	33.1	D	0.1	0 002			101.9	F
Almaden Expwy and SR 85 (N)*	AM	6/15/00	5.4	B	5.7	B	5 7	B	0.0	0 002			5 8	B
	PM	10/1/98	18 2	C	20 4	C	20.4	C	0.1	0.007			23.0	C
Almaden Exwpy and SR 85 (S)*	AM	6/14/00	14 2	C	14 9	B	14.8	B	-0.1	0.003			15.1	C
	PM	10/1/98	167.5	F	173.1	F	172.5	F	-0.5	0.001			198.7	F
Copperfield Dr and Capitol Expwy	AM	5/18/00	7.0	B	7.7	B	7.7	B	0.0	0.000			7.8	B
	PM	5/18/00	9.5	B	10.0	B	10.0	B	0.0	0.001			10.1	B
Narvaez Ave and Capitol Expwy	AM	6/9/00	25.2	D	25.5	D	29.9	D	5.2	0.088	29.9	D	30.7	D
	PM	3/8/00	28.0	D	28.3	D	30.0	D	5.2	0.051	29.5	D	30.4	D
Vista Park Dr and Capitol Expwy	AM	5/23/00	16.7	C	17.5	C	17.6	C	0.0	0.000			18.0	C
	PM	5/23/00	18.0	C	20.2	C	20.5	C	0.7	0.011			21 0	C
SR 87 SB ramps and Capitol Expwy*/b/	AM	5/11/00	22.4	C	23.4	C	25.1	D	25.4	0.032	25.3	D	25 3	D
	PM	3/21/00	35.5	D	47.8	E	71.7	F	**33.5**	**0.052**	46.1	E	82.3	F
Snell Ave and Capitol Expwy*	AM	6/8/00	32.5	D	33.9	D	33.9	D	0.0	0 006			34 5	D
	PM	3/21/00	27.1	D	25.7	D	25.7	D	0.0	0.006			26.1	D
Hillsdale Avenue and Narvez Avenue/a/	AM	8/26/99	--	--	21.2	C	24.2	C	1.5	0.194			24.3	C
	PM	8/26/99	--	--	21.5	C	24.4	C	2.6	0.176			24.4	C
Old Almaden Rd and Foxworthy Avenue/a/	AM	12/18/96	--	--	16.2	C	16.8	C	0.0	0.000			17.2	C
	PM	12/18/96	--	--	10.8	B	9.9	B	-0.8	0.030			10.3	B

/a/ Background and project conditions include planned improvements.
/b/ The PM TRAFFIX coding was adjusted to get TRAFFIX to calculate an accurate level of service and intersection delay value.
Shading indicates significant impact
* Denotes CMP intersection

Table ES-2
Freeway Segment Levels of Service - Project Conditions

				Existing + Project Trips					Project Trips	
Freeway	Segment	Direction	Peak Hour	Ave. Speed/a/	# of Lanes	Volume/a/	Density	LOS	Volume	% Capacity
SR 87	SR 85 to Capitol Expwy	NB	AM	65	2	2,155	16.6	C	25	0.5%
			PM	60	2	3,677	30.6	D	47	1.0%
SR 87	Capitol Expwy to Curtner Avenue	NB	AM	60	2	3,373	28.1	D	113	2.5%
			PM	60	2	3,000	25.0	D	60	1.3%
SR 87	Curtner Avenue to Almaden Expwy	NB	AM	25	2	3,503	70.1	**F**	**113**	**2.5%**
			PM	60	2	2,770	23.1	C	60	1.3%
SR 87	Almaden Expwy to Alma Av	NB	AM	25	2	3,263	65.3	**F**	**113**	**2.5%**
			PM	50	2	4,410	44.1	D	60	1.3%
SR 87	Alma Av to I-280	NB	AM	60	2	4,243	35.4	D	113	2.5%
			PM	60	2	3,530	29.4	D	60	1.3%
SR 87	I-280 to Alma Avenue	SB	AM	65	2	2,520	19.4	C	60	1.4%
			PM	10	2	2,583	129.2	**F**	**113**	**2.6%**
SR 87	Alma Avenue to Almaden Expwy	SB	AM	65	2	2,230	17.2	C	60	1.4%
			PM	60	2	4,113	34.3	D	113	2.6%
SR 87	Almaden Expwy to Curtner Avenue	SB	AM	65	2	950	7.3	A	60	1.4%
			PM	60	2	2,663	22.2	C	113	2.6%
SR 87	Curtner Avenue to Capitol Exwpy	SB	AM	65	2	1,760	13.5	B	60	1.4%
			PM	60	2	3,293	27.4	D	113	2.5%
SR 87	Capitol Expwy to SR 85	SB	AM	65	2	827	6.4	A	47	1.0%
			PM	60	2	2,215	18.5	C	25	0.5%

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 1998.

99-083

1. Introduction

This report presents the results of the traffic impact analysis conducted for the Communications Hill residential development in San Jose, California. The project site is located east of SR 87 along the southern portion of Communications Hill, north of Hillsdale Avenue and east of Narvaez Avenue. The site is currently vacant. The project as proposed would contain 765 single family attached residential dwelling units. Access to the site will be provided via Narvaez Avenue, a project entrance at the intersection of Vistapark Drive and Hillsdale Avenue, two right-turn only driveways on Hillsdale Avenue on either side of Vista Park Drive, and the roadway just west of Vistapark Drive via two connections to the Lancaster Gate neighborhood. The project site and the surrounding study area are shown on Figure 1. The project site plan is shown on Figure 2.

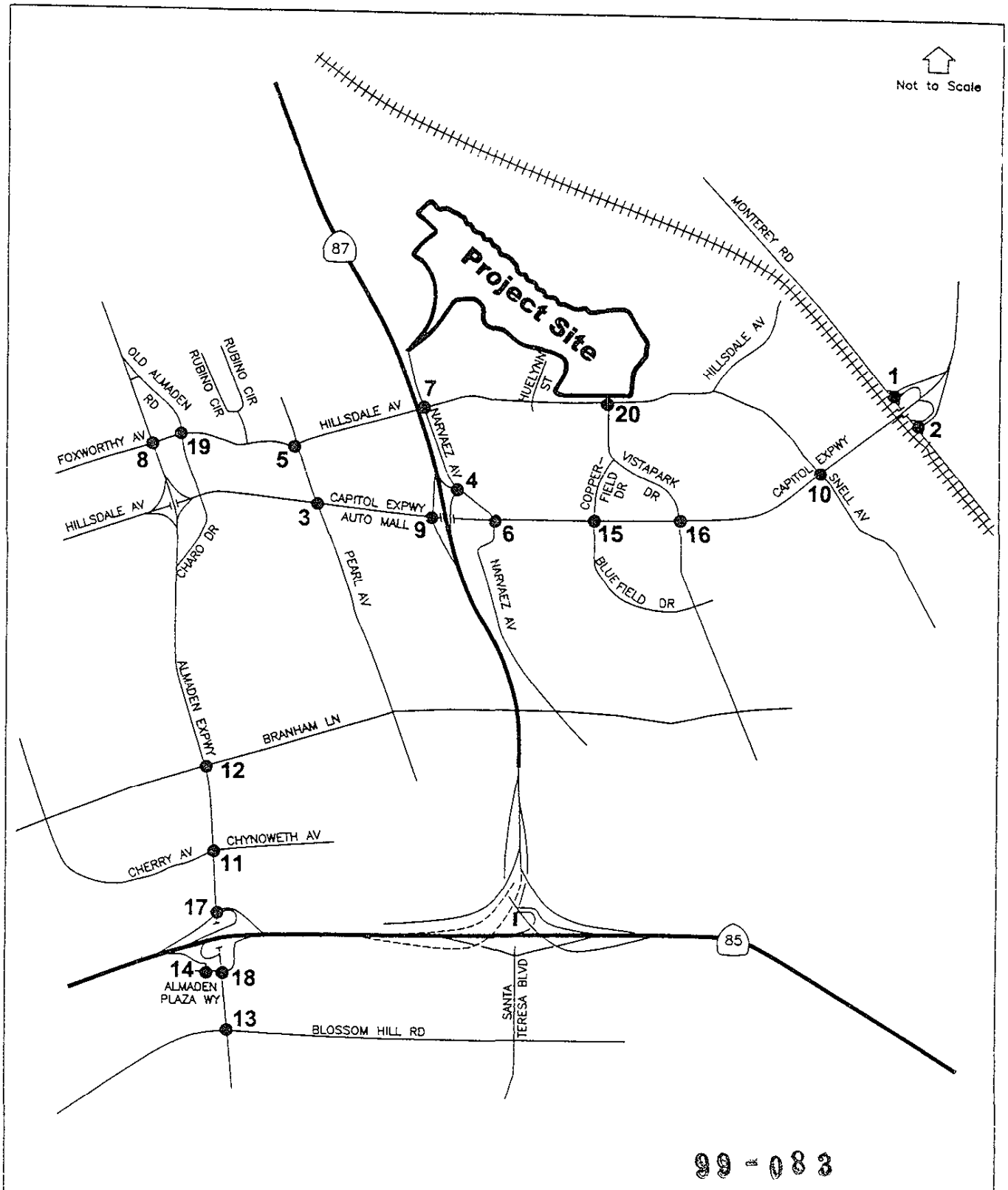
Scope of Study

This study was conducted for the purpose of identifying the potential traffic impacts related to the proposed development. The impacts of the project were evaluated following the standards and methodologies set forth by the City of San Jose and the Santa Clara Valley Transportation Authority (VTA). The VTA administers the county Congestion Management Program (CMP). The traffic analysis is based on peak-hour levels of service for signalized intersections and freeway segments. The traffic analysis also includes an evaluation of peak-hour signal warrants for unsignalized intersections and a peak-hour vehicle queuing analysis for selected locations. The study intersections and freeway segments are identified below.

Study Intersections

Capitol Expressway and Monterey Road (N)*
Capitol Expressway and Monterey Road (S)*
Pearl Avenue and Capitol Expressway*
Narvaez Avenue and Capitol Expressway
Pearl Avenue/Foxworthy Avenue and Hillsdale Avenue

99-083



99-083

Figure 1

SITE LOCATION AND STUDY INTERSECTIONS

Communications Hill

Hexagon Transportation Consultants, Inc.

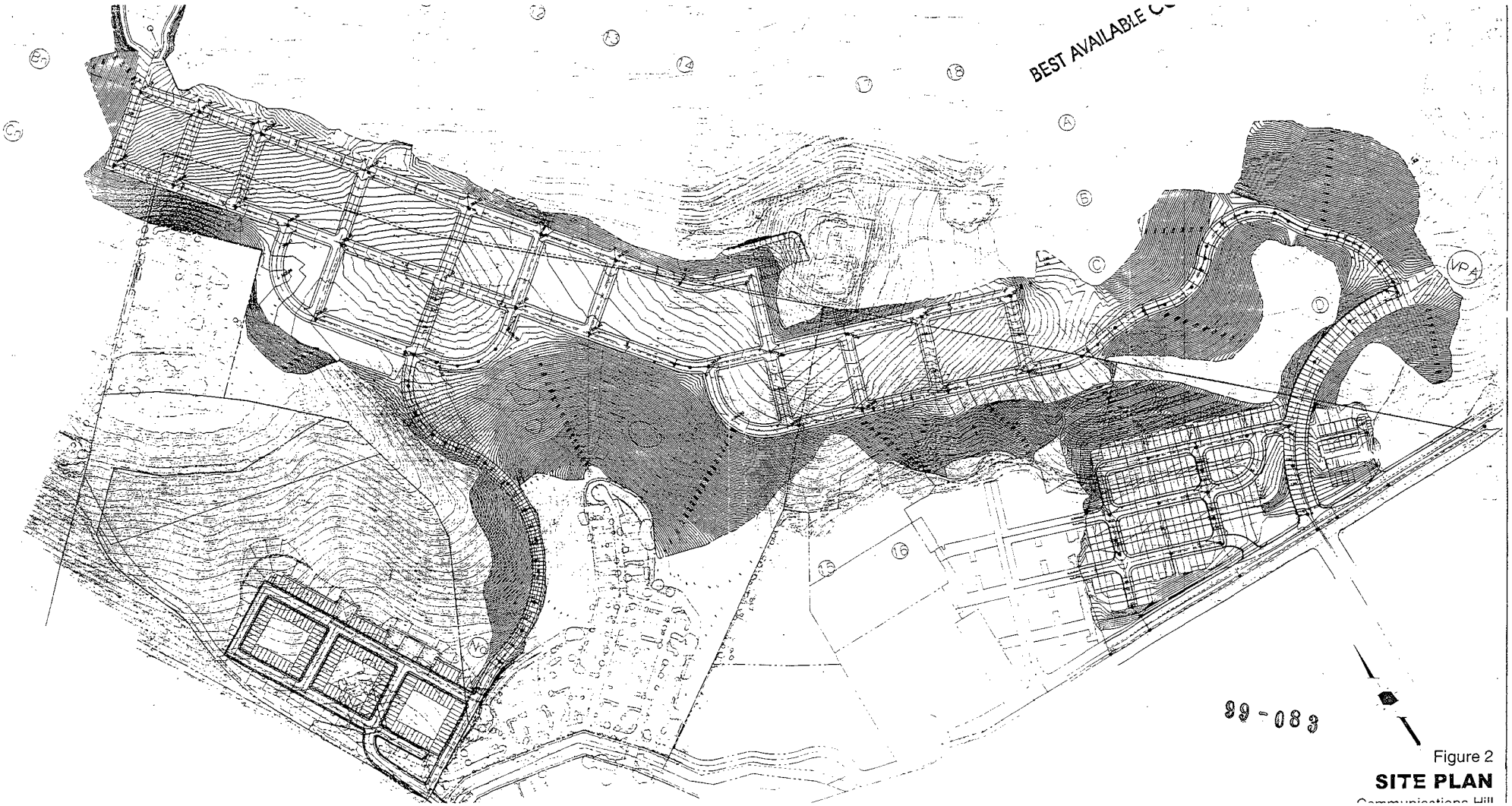


Figure 2
SITE PLAN
Communications Hill

Narvaez Avenue and Hillsdale Avenue (signalization planned)
Almaden Expressway and Foxworthy Avenue
Narvaez Avenue and SR 87 northbound ramps
SR 87 southbound ramps and Capitol Expressway*
Snell Avenue and Capitol Expressway*
Almaden Expressway and Cherry Avenue
Almaden Expressway and Branham Lane*
Almaden Expressway and Blossom Hill Road*
SR 85 southbound off-ramp and Almaden Plaza Way
Copperfield Drive and Capitol Expressway
Vistapark Drive and Capitol Expressway
Almaden Expressway and SR 85 northbound ramps*
Almaden Expressway and SR 85 southbound on-ramp/Almaden Plaza Way*
Old Almaden Road and Foxworthy Avenue (signalization planned)
Vistapark Drive/Future Project Entrance and Hillsdale Avenue (unsignalized)

CMP intersections are denoted with an asterisk (*).

Study Freeway Segments

SR 87, from SR 85 to Capitol Expressway
SR 87, from Capitol Expressway to Curtner Avenue
SR 87, from Curtner Avenue to Almaden Expressway
SR 87, from Almaden Expressway to Alma Avenue
SR 87, from Alma Avenue to I-280

In summary, the study includes an analysis of 16 signalized intersections, 1 unsignalized intersection, 2 intersections were signalization is planned, and 5 freeway segments in the vicinity of the project site. The nine CMP intersections were evaluated against the standards of both the City of San Jose and the County CMP. The intersections of Narvaez Avenue and Hillsdale Avenue and Old Almaden Road and Foxworthy Avenue were analyzed as signalized intersections. Peak-hour signal warrants were examined for the one unsignalized intersection.

Traffic conditions at the intersections and on the freeway segments 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.

Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing traffic volumes were obtained from recent traffic counts.

Scenario 2 *Background Conditions.* Background traffic volumes were estimated by adding to existing peak-hour volumes the projected volumes from approved but not yet completed developments. The latter component is contained in the City of San Jose Approved Trips Inventory (ATI). Background conditions include a reassignment of existing traffic due to the completion of the Foxworthy Avenue bridge.

Scenario 3 *Project Conditions.* Future traffic volumes with the project (hereafter called *project traffic volumes*) were estimated by adding to background traffic volumes the additional

traffic generated by the project. Project conditions were evaluated relative to background conditions in order to determine potential project impacts.

Scenario 4 *Future Growth Conditions.* Traffic volumes under future growth conditions were estimated by applying a growth factor to existing volumes, adding trips from approved developments, and adding project trips. This scenario is evaluated in fulfillment of CMP requirements.

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.

Data Requirements

The data required for the analysis were obtained from new traffic counts, previous traffic studies, the City of San Jose, and the CMP annual Monitoring Report. The following data were collected from these sources:

- existing traffic volumes
- lane configurations
- signal timing and phasing (for signalized intersections only)
- average speed (for freeway segments only)

Analysis Methodologies and Level of Service Standards

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The various analysis methods are described below.

City of San Jose Signalized Intersections

All of the signalized study intersections are located in the City of San Jose and are therefore subject to the City of San Jose Level of Service standards. The City of San Jose level of service methodology is TRAFFIX, which is based on the *Highway Capacity Manual* (HCM) method for signalized intersections. TRAFFIX evaluates signalized intersection operations on the basis of average delay time for all vehicles at the intersection. Since TRAFFIX is also the CMP-designated intersection level of service methodology, 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 is LOS D or better. The correlation between average delay and level of service is shown in Table 1.

99-083

CMP Intersections

Since TRAFFIX is the designated level of service methodology for both the CMP and the City of San Jose, the CMP study intersections are not analyzed separately, but rather are among the City of San Jose signalized study intersections analyzed using TRAFFIX. 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.

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.

99-083

Freeway Segments

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 requires that mixed-flow lanes and auxiliary lanes be analyzed separately from HOV (carpool) lanes. The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for segments six lanes or wider in both directions and a capacity of 2,200 vphpl be used for segments four lanes wide in both directions. 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

Unsignalized Intersections

For unsignalized intersections an assessment is made of the need for signalization of the intersection. This assessment is made on the basis of the Peak-hour Volume Signal Warrant, Warrant #11 described in the Caltrans *Traffic Manual*. This method makes no evaluation of intersection level of service, but simply provides an indication whether peak-hour traffic volumes are, or would be, sufficient to justify installation of a traffic signal.

Intersection Operations

99-088

The operations analysis is based on vehicle queuing for high-demand turning movements at intersections. The basis of the analysis is as follows: (1) the TRAFFIX intersection analysis software is used to estimate

the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 20 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement. This analysis thus provides a basis for estimating future storage requirements at intersections.

Report Organization

The remainder of this report is divided into five chapters. Chapter 2 describes existing conditions in terms of the existing roadway network, transit service, and existing bicycle and pedestrian facilities. Chapter 3 presents the intersection and freeway operations under background conditions. Chapter 4 describes the method used to estimate project traffic and its impact on the transportation system and describes the recommended mitigation measures. Chapter 5 discusses the traffic conditions resulting from additional future growth. Chapter 6 presents the conclusions of the traffic impact analysis.

99-083

2.
Existing Conditions

This chapter describes the existing conditions for all the major transportation facilities in the vicinity of the site, including the roadway network, transit service, and bicycle and pedestrian facilities.

Existing Roadway Network

Regional access to the project site is provided via SR 87 and Monterey Road (SR 82). These facilities are described below.

SR 87 is a four-lane freeway that is aligned in a north-south orientation. SR 87 begins at its interchange with SR 85 and extends northward to Taylor Street where it becomes a non-grade separated facility and changes designation to Guadalupe Expressway. Access to the project site is provided by ramps at Capitol Expressway and at Narvaez Avenue.

Monterey Road (SR 82) is a six-lane major arterial that is oriented in a north-south direction. Monterey Road extends southward into Morgan Hill and northward into San Francisco. Access to the site is provided via Capitol Expressway.

Local access to the site is provided by Almaden Expressway, Capitol Expressway, Foxworthy Avenue, Hillsdale Avenue, Narvaez Avenue, Pearl Avenue, and Snell Avenue. These roadways are described below.

Almaden Expressway is a six-lane north-south major arterial. Almaden Expressway begins just south of downtown San Jose and extends southward into the Almaden Valley where it terminates at Harry Road. Access to the site is provided via Foxworthy Avenue.

Capitol Expressway is a six-lane major arterial that is aligned in an east-west orientation. Capitol Expressway begins at its interchange with I-680 in east San Jose, where it changes designation from San Antonio Street, and extends to the south and west where it changes designation to Hillsdale Avenue at

Almaden Expressway. Access to the site is provided via Vistapark Drive, Narvaez Avenue, and Pearl Avenue.

Foxworthy Avenue is a two-lane collector that begins at Bascom Avenue and extends eastward to Old Almaden Road where it currently terminates. Foxworthy Avenue begins again at Guadalupe River and extends to Pearl Avenue. A bridge on Foxworthy Avenue spanning the Guadalupe River is currently under construction. Access to the site is provided via Hillsdale Avenue.

Hillsdale Avenue is currently a two-lane local street that is aligned in an east-west orientation. Hillsdale Avenue begins at Pearl Avenue and extends eastward beyond Snell Avenue terminating just west of the railroad tracks. Access to Hillsdale Avenue is provided via Narvaez Avenue and direct access to the site will be provided by project entrances at the intersection of Vistapark Drive and Hillsdale Avenue, on Hillsdale Avenue on either side of Vista Park Drive, and on Hillsdale Avenue west of Vistapark Drive via the Lancaster Gate neighborhood connection. Hillsdale Avenue is designated in the City of San Jose General Plan to be a four-lane arterial.

Narvaez Avenue is a two-lane collector that begins at the Helzer residential development east of SR 87 and extends southward beyond Branham Lane where it terminates at Calpella Drive. Direct access to the site is provided via a project entrance at the termination point of Narvaez Avenue.

Pearl Avenue is a four-lane north-south collector that begins at Hillsdale Avenue and extends southward to Chynoweth Avenue where it terminates. Access to the site is provided via Hillsdale Avenue.

Snell Avenue is a four-lane collector that begins south of Santa Teresa Boulevard and extends northward to Hillsdale Avenue where it terminates. Access to the site is provided via Capitol Expressway and Hillsdale Avenue.

Existing Bicycle and Pedestrian Facilities

There are a number of county-designated bikeways within the vicinity of the project site. Bike lanes are provided on Cherry Avenue (between Curtner Avenue and Almaden Expressway), on Capitol Expressway (between Pearl Avenue and US 101), and on Narvaez Avenue (north of Branham Lane).

A bike path is provided along the east side of SR 87 between Oakdridge Mall and the Tamien CalTrain/Light Rail Station. The bike lanes on Narvaez Avenue are part of this bike path. This bike path is also available for use by pedestrians. Bike lockers and bike racks are provided at the Curtner, Capitol, and Branham LRT stations. The existing bicycle facilities within the study area are shown on Figure 3.

Pedestrian facilities in the project area consist primarily of sidewalks along the streets in most residential and commercial areas, as well as the aforementioned bike/pedestrian path. Sidewalks are found along virtually all previously-described local roadways in the study area and along the local residential streets and collectors near the site, with the exception of portions of Hillsdale Avenue. The portions of Hillsdale Avenue without existing sidewalks are along the project frontage, under the SR 87 overpass, and just east of SR 87 on the south side. However, sidewalks are currently being constructed from the SR 87 overpass to Canoas Creek as part of the Rubino project's conditioned improvements.

99-088

Existing Transit Service

Existing transit service to the study area is provided by the VTA. These are described below and shown on Figure 4.

VTA Transit Service

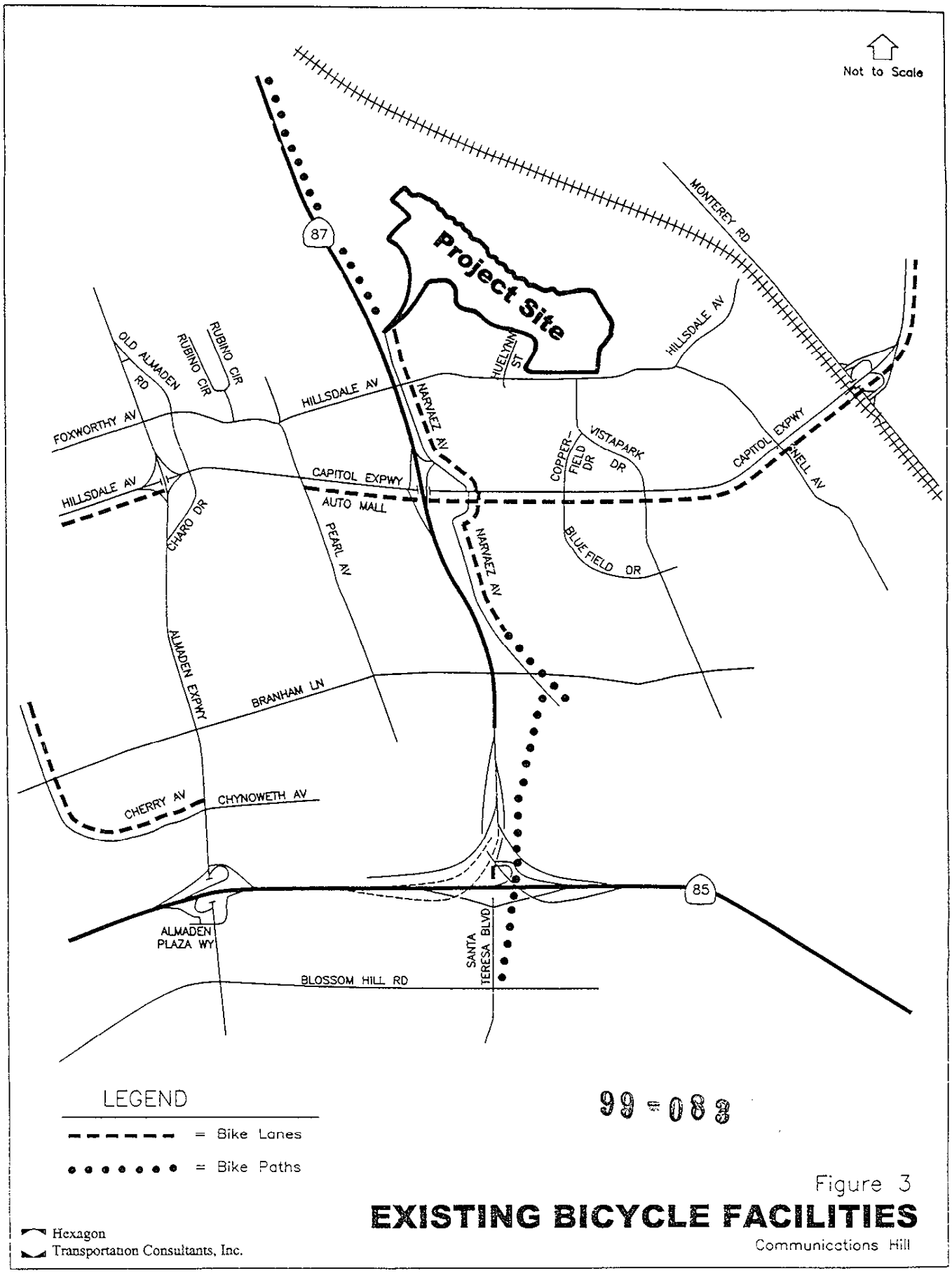
Bus Service

The study area is served directly by two local buses. The 37 line provides service between Monterey Road & Senter Road and Bascom Avenue & Camden Avenue via Monterey Road, Capitol Expressway, Narvaez Avenue, Hillsdale Avenue, and Pearl Avenue, with 30-minute headways during commute hours. The 70 line provides service between the Capitol LRT Station and Milpitas via Capitol Expressway, with 15-minute headways during commute hours. The nearest bus stop to the project site is on the 37 line and is located on Hillsdale Avenue just west of SR 87.

Light Rail Transit (LRT) Service

There is one LRT station located near the project site. The Capitol LRT station is situated on the Guadalupe Corridor LRT line and is located near the SR 87/Capitol Expressway interchange. The Capitol LRT station Park & Ride lots are accessible from Narvaez Avenue both north and south of Capitol Expressway. The Guadalupe Corridor LRT line provides service on 10-minute headways during commute and midday hours. It provides service between the Santa Teresa LRT station and the Baypointe LRT station, where transfers to Mountain View are available.

99-083



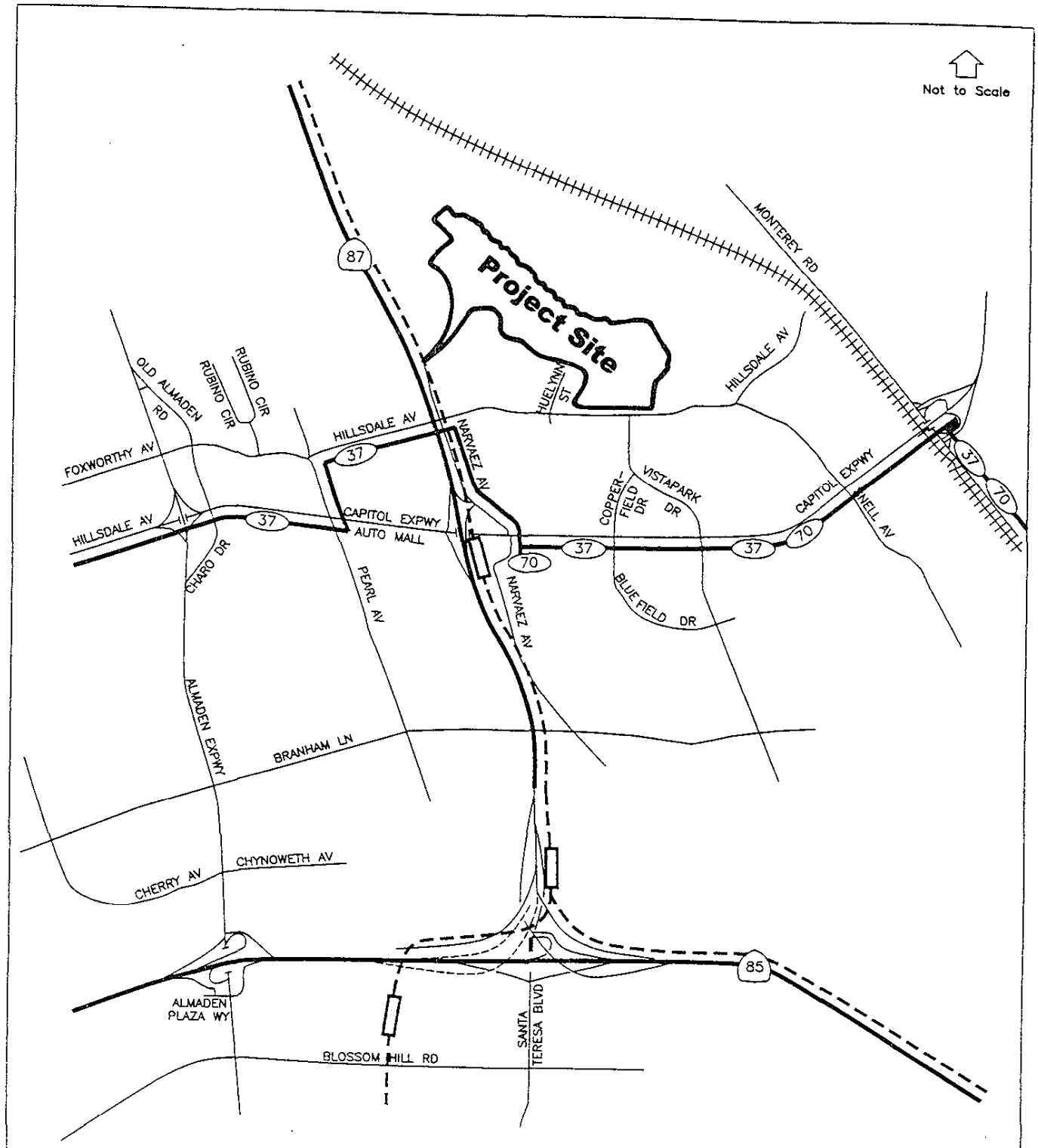
99-083

Figure 3

EXISTING BICYCLE FACILITIES

Communications Hill

Hexagon Transportation Consultants, Inc.



99-083

LEGEND

XX = Bus Route

= LRT Station

Figure 4

EXISTING TRANSIT SERVICE

Communications Hill

Hexagon Transportation Consultants, Inc.

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were provided by city staff and confirmed by observations in the field. The existing intersection lane configurations are shown on Figure 5.

Existing Traffic Volumes

Existing peak-hour traffic volumes were obtained from the City of San Jose and supplemented with manual turning-movement counts at intersections where counts were either unavailable or outdated (more than one year old). The existing peak-hour intersection volumes are shown on Figure 6. The traffic count data are included in Appendix A.

Existing Intersection Levels of Service

City of San Jose Intersection Analysis

The results of the level of service analysis under existing conditions are summarized in Table 3. The results show that four of the signalized study intersections currently operate at an unacceptable LOS E or F.

Pearl Avenue and Capitol Expressway
Almaden Expressway and Branham Lane
Almaden Expressway and Blossom Hill Road
Almaden Expressway and SR 85 (S)/Almaden Plaza Way

All other signalized study intersections currently operate at an acceptable LOS D or better, according to City of San Jose standards. The level of service calculation sheets are included in Appendix D.

99-083

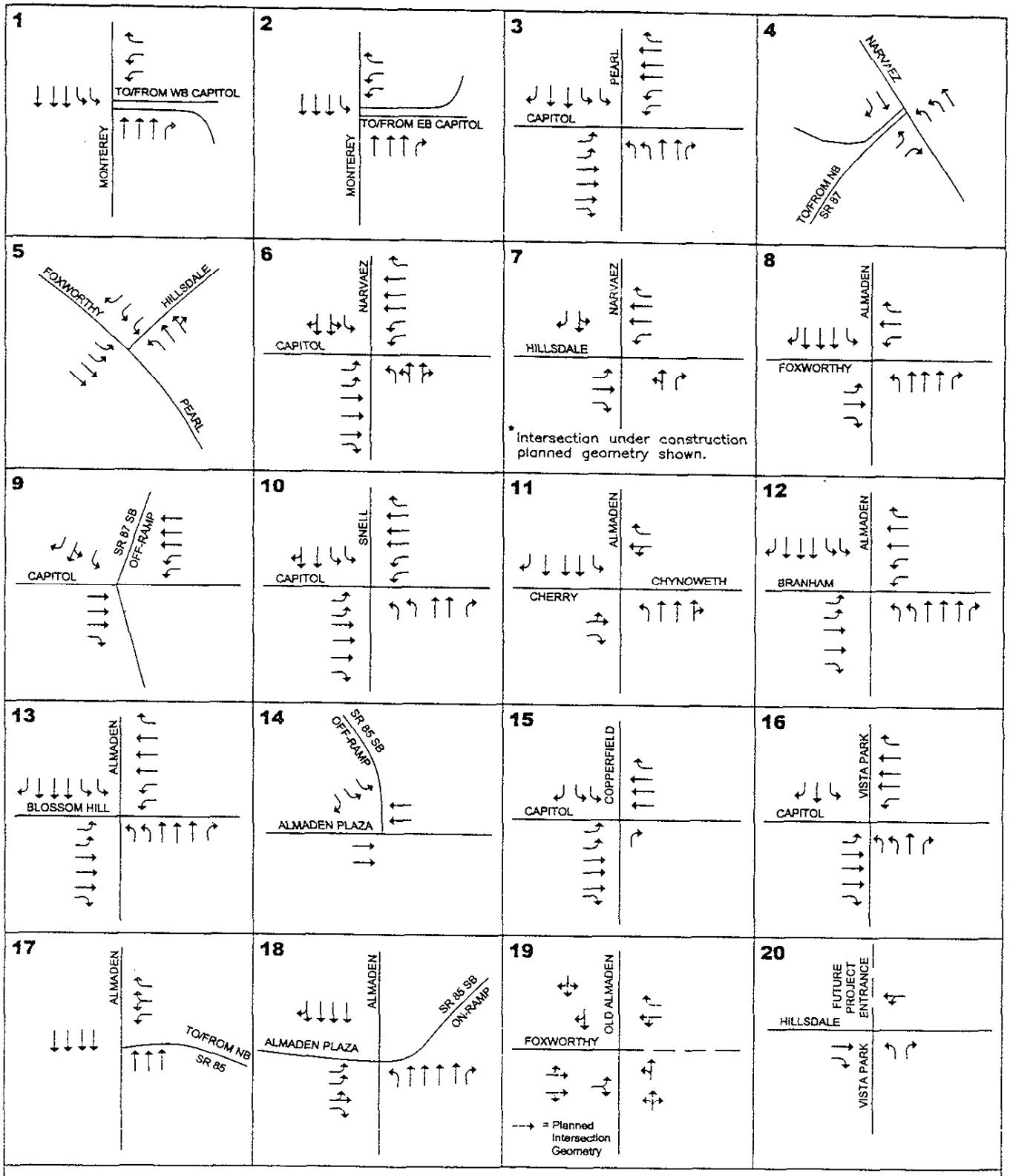


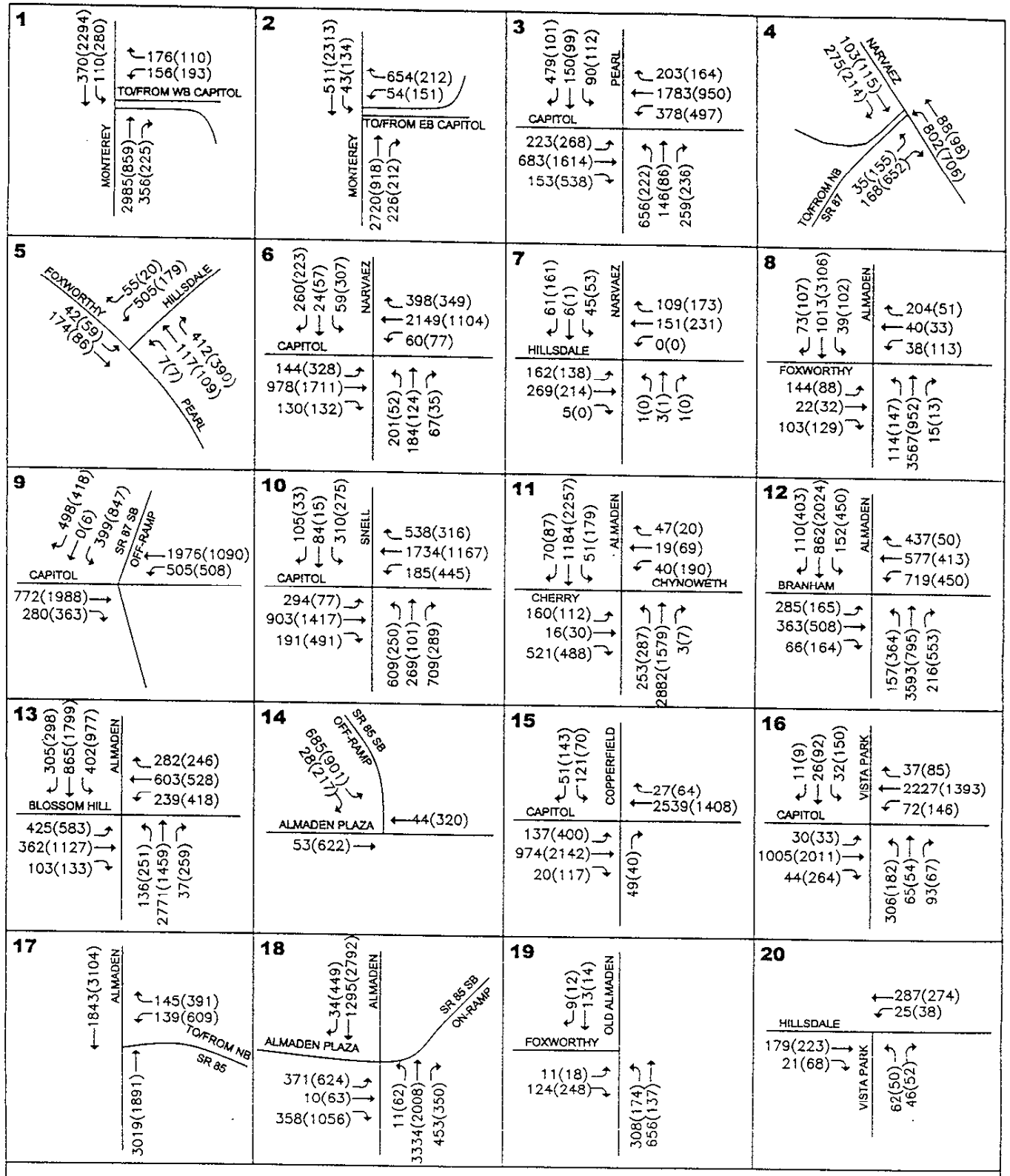
Figure 5

99-083

EXISTING LANE GEOMETRY

Hexagon Transportation Consultants, Inc.

Communications Hill



Legend

XX(XX) = AM(PM) peak hour volumes

Hexagon
Transportation Consultants, Inc.

99-083

Figure 6

EXISTING TRAFFIC VOLUMES

Communications Hill

Table 3
Existing Intersection Levels of Service

Intersection	Peak Hour	Count Date	Avg. Delay	LOS
Capitol Expwy and Monterey Rd (N)*	AM	3/22/00	9.3	B
	PM	3/22/00	10.3	B
Capitol Expwy and Monterey Rd (S)*	AM	3/22/00	25.8	D
	PM	3/22/00	8.7	B
Pearl Ave and Capitol Expwy*	AM	5/10/00	46.4	E
	PM	5/11/00	25.8	D
SR 85 SB off-ramp and Almaden Plaza	AM	5/25/00	4.6	A
	PM	5/25/00	8.5	B
Narvaez Ave and SR 87 NB ramps	AM	5/31/00	9.5	B
	PM	5/31/00	9.4	B
Pearl Ave and Hillsdale Ave	AM	6/1/00	18.6	C
	PM	6/1/00	14.5	B
Almaden Expwy and Foxworthy Ave/a/	AM	5/23/00	15.2	C
	PM	5/23/00	16.9	C
Almaden Expwy and Branham Ln*	AM	6/14/00	75.3	F
	PM	3/14/00	42.7	E
Almaden Expwy and Blossom Hill Rd*	AM	6/15/00	42.6	E
	PM	3/15/00	122.6	F
Almaden Expwy and Cherry Ave	AM	5/24/00	18.6	C
	PM	5/24/00	24.5	C
Almaden Expwy and SR 85 (N)*	AM	6/15/00	5.4	B
	PM	10/1/98	18.2	C
Almaden Exwpy and SR 85 (S)*	AM	6/14/00	14.2	C
	PM	10/1/98	167.5	F
Copperfield Dr and Capitol Expwy	AM	5/18/00	7.0	B
	PM	5/18/00	9.5	B
Narvaez Ave and Capitol Expwy	AM	6/9/00	25.2	D
	PM	3/8/00	28.0	D
Vista Park Dr and Capitol Expwy	AM	5/23/00	16.7	C
	PM	5/23/00	18.0	C
SR 87 SB ramps and Capitol Expwy*/b/	AM	5/11/00	22.4	C
	PM	3/21/00	35.5	D
Snell Ave and Capitol Expwy*	AM	6/8/00	32.5	D
	PM	3/21/00	27.1	D
Hillsdale Avenue and Narvez Avenue	AM	8/26/99	14.6	B
	PM	8/26/99	15.0	B

/a/ Background and project conditions include planned improvements.
/b/ The PM TRAFFIX coding was adjusted to get TRAFFIX to calculate an accurate level of service and intersection delay value.
* Denotes CMP intersection

99-083

CMP Intersection Analysis

The level of service results for the CMP intersections under existing conditions are summarized in Table 3. The results show that three of the CMP study intersections currently operate at an unacceptable LOS F during at least one of the peak hours.

Almaden Expressway and Branham Lane
Almaden Expressway and Blossom Hill Road
Almaden Expressway and SR 85 (S)/Almaden Plaza Way

Existing Signal Warrants

Peak-hour signal warrants (*Caltrans Traffic Manual*, Chapter 9, Warrant 11) were checked for the one currently unsignalized intersections to determine whether signalization would be justified on the basis of existing peak-hour volumes. The analysis showed that the unsignalized study intersection does not meet the peak-hour volume warrant. This is mainly due to the fact that the roadway network in the area is not completely built as ultimately planned by the City. Therefore, this intersection will have low traffic volumes until the improvements to the roadway network are completed. The signal warrant analysis sheets are included in Appendix E.

Existing Freeway Levels of Service

Traffic volumes for the subject freeway segments were obtained from the CMP Annual Monitoring Report.

The results of the freeway level of service analysis are summarized in Table 4. The results show that three of the directional freeway segments analyzed currently operate at an unacceptable LOS F during at least one of the peak hours:

SR 87 northbound, Curtner Avenue to Almaden Expressway (AM peak hour)
SR 87 northbound, Almaden Expressway to Alma Avenue (AM peak hour)
SR 87 southbound, I-280 to Alma Avenue (PM peak hour)

All other analyzed freeway segments operate at LOS E or better during the AM and PM peak hours.

Observed Existing Traffic Conditions

Traffic conditions were observed in the field in order to identify existing operational deficiencies and to confirm the accuracy of calculated levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to intersection level of service, and (2) to identify any locations where the level of service calculation does not accurately reflect level of service in the field.

The key field observation results are discussed below. The following intersections were judged to be operating at LOS D during the PM peak hour, which by definition means that the critical movements

Table 4
Freeway Segment Levels of Service - Existing Conditions

Freeway	Segment	Direction	Peak Hour	Ave. Speed/a/	# of Lanes	Volume/a/	Density	LOS
SR 87	SR 85 to Capitol Expwy	NB	AM	65	2	2,130	16.4	C
			PM	60	2	3,630	30.3	D
SR 87	Capitol Expwy to Curtner Avenue	NB	AM	60	2	3,260	27.2	D
			PM	60	2	2,940	24.5	D
SR 87	Curtner Avenue to Almaden Expwy	NB	AM	25	2	3,390	67.8	F
			PM	60	2	2,710	22.6	C
SR 87	Almaden Expwy to Alma Av	NB	AM	25	2	3,150	63.0	F
			PM	50	2	4,350	43.5	D
SR 87	Alma Av to I-280	NB	AM	60	2	4,130	34.4	D
			PM	60	2	3,470	28.9	D
SR 87	I-280 to Alma Avenue	SB	AM	65	2	2,460	18.9	C
			PM	10	2	2,470	123.5	F
SR 87	Alma Avenue to Almaden Expwy	SB	AM	65	2	2,170	16.7	C
			PM	60	2	4,000	33.3	D
SR 87	Almaden Expwy to Curtner Avenue	SB	AM	65	2	890	6.8	A
			PM	60	2	2,550	21.3	C
SR 87	Curtner Avenue to Capitol Exwpy	SB	AM	65	2	1,700	13.1	B
			PM	60	2	3,180	26.5	D
SR 87	Capitol Expwy to SR 85	SB	AM	65	2	780	6.0	A
			PM	60	2	2,190	18.3	C

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 1998.

99-083

consistently had a fairly dense traffic stream: Almaden Expressway/Cherry Avenue and Almaden Expressway/Blossom Hill Road.

There were some operational problems observed at these intersections, not related to the observed LOS. At Almaden Expressway/Cherry Avenue, the split phase operation on Cherry Avenue was seen to be inefficient. Most cars turned left. Also, the free-right from eastbound Cherry Avenue to southbound Almaden Expressway seemed dangerous. There are driveways immediately past the intersection, and cars southbound on Almaden must make a very fast lane change to access the driveways.

At Almaden Expressway/Blossom Hill Road it appeared that Blossom Hill was not synchronized with the signal at the entrance to the Almaden Plaza shopping center. During the PM peak hour, there were several instances when the westbound approach had a green light at Almaden but a red light at the shopping center, which reduced the through traffic flow on Blossom Hill Road. Also, there were times when the eastbound approach had a green light at Blossom Hill but no traffic went through because of a red light at the shopping center.

The intersection of Narvaez Avenue and Capitol Expressway experiences significant congestion during the AM peak hour due to the metering light on the northbound 87 on-ramp from Narvaez Avenue. The metering light causes a northbound queue on Narvaez Avenue that backs up to Capitol Expressway. As a result, westbound traffic (specifically the rightmost lanes) and eastbound left-turns on Capitol Expressway have their flow restricted, which causes long queues to form on Capitol Expressway.

The intersection of Narvaez Avenue and SR 87 northbound ramps experiences significant congestion during the AM peak hour due to the metering light on the northbound 87 on-ramp, as discussed above. The calculated level of service for this intersection during the AM peak hour is LOS B. However, due to the ramp metering, actual vehicle delays are much higher than those associated with LOS B conditions, and the northbound queue does not clear on every cycle.

TRAFFIX level of service calculations for the intersection of SR 87 southbound ramps and Capitol Expressway during the PM peak hour show that this intersection operates at LOS F with 81.9 seconds of average delay and a volume-to-capacity (V/C) ratio of 0.887. However, field observations revealed that this intersection operates at LOS D or better. The discrepancy in calculated versus actual level of service is mainly due to the coding in the TRAFFIX database for this intersection. The default saturation flows cause TRAFFIX to calculate worse delays than are actually present. Furthermore, the arrival type for the off-ramp traffic is incorrectly specified, which results in an overestimate of the delay. The average delay during the PM peak hour was measured in the field as a means for calibrating the TRAFFIX database. The average stopped delay was calculated based on the procedure described in the *Highway Capacity Manual*. The result of the field calculation is an average intersection stopped delay of 33.6 seconds per vehicle. This delay was measured in late June 2000. To compensate for possible reduced traffic volumes in the summer, coding in the TRAFFIX network (PM only) for this intersection was adjusted to yield an average delay of 35.5 seconds per vehicle, rather than the 33.6 seconds that was measured.

The signal timing was observed to be quite inefficient. Long queues were observed every cycle on the SR 87 southbound off-ramp while westbound Capitol Expressway had no queues. Also, Capitol Expressway receives 100 seconds of green time every cycle, however, only 80 seconds is usable. For 20 seconds, there is no traffic moving on westbound Capitol because traffic is stopped by a red signal at Narvaez Avenue. If the 20 seconds were reallocated to the southbound off-ramp, the queue on the off-ramp would be significantly reduced, and the signal progression on Capitol Expressway would be unaffected. Alternately, the cycle length could be reduced by 20 seconds while still maintaining the same amount of green time for the southbound off-ramp. This would make the intersection cycle faster and would benefit Capitol Expressway.

3.
Background Conditions

This chapter describes background traffic conditions. Background conditions are defined as conditions just prior to completion of the proposed development. Traffic volumes for background conditions comprise volumes from existing traffic counts plus traffic generated by other approved developments in the vicinity of the site. This chapter describes the planned intersection and roadway improvements, the procedure used to determine background traffic volumes and the resulting traffic conditions.

Background Roadway Network

There are several intersection and roadway improvements that are assumed under background conditions. The intersection improvements are either part of the City of San Jose Capital Improvement Program (CIP) or have been mandated by the city as a condition of future development to be funded by the developer. The improvements are described below.

Intersection Improvements

Narvaez Avenue and Hillsdale Avenue. The improvements at this intersection consist of signalizing the intersection and building it out to include lanes for all movements. The planned lane geometry is as follows. Northbound: one right-turn lane and one shared through/left-turn lane. Eastbound: One shared through/right-turn lane, one through lane, and one left-turn lane. Southbound: One shared right/through/left-turn lane. Westbound: One right-turn lane, two through lanes, and one left-turn lane. These improvements include adding curb, gutter, and sidewalk on Hillsdale Avenue under SR 87. (Developer funded).

Old Almaden Road and Foxworthy Avenue. The improvement at this intersection consists of signalizing the intersection and adding a fourth leg (east approach) with the construction of the Foxworthy bridge over Guadalupe River. The planned lane geometry for the east approach is one right-turn lane and one shared through/left-turn lane. The planned lane geometry for the west approach is one shared

99-083

through/right-turn lane and one shared through/left-turn lane. (Improvements funded by Rubino, under construction by City of San Jose).

Almaden Expressway and Foxworthy Avenue. The improvements at this intersection consist of modifying the east approach to include one left-turn lane and one right-turn lane and removing the westbound through lane. Furthermore, a second eastbound departing lane will be added to the east approach. These improvements will involve modifications to the existing raised right-turn islands on the east leg of the intersection. Foxworthy Avenue, east of Almaden Expressway, will have one westbound and two eastbound travel lanes. The north and south legs of the intersections will also be modified. A second southbound left-turn lane will be added and the existing southbound exclusive right-turn lane will be converted to a shared through/right-turn lane. The rightmost northbound travel lane and the northbound exclusive right-turn lane will be converted into a single shared through/right-turn lane. (Developer funded, to be built by the City of San Jose).

Roadway Improvements

Foxworthy Avenue Bridge. A bridge over Guadalupe River will connect the portion of Foxworthy Avenue west of the river to the section on the east side of the river. With this roadway network change, the travel patterns in the area will change slightly. For this reason, background traffic was reassigned as discussed below. This improvement is currently under construction by the City of San Jose.

Hillsdale Avenue. When the Foxworthy Avenue bridge is constructed, Hillsdale Avenue will be widened to four lanes, as specified in the City of San Jose General Plan, from the SR 87 overcrossing to Canoas Creek. This improvement is currently under construction.

Background Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities under background conditions were assumed to remain unchanged from existing conditions.

Background Transit Service

Transit service under background conditions was assumed to remain unchanged from existing conditions.

Background Intersection Lane Configurations

The intersection lane configurations under background conditions were assumed to be the same as described under existing conditions except with the addition of the planned improvements described above.

Background Traffic Volumes

Background peak-hour traffic volumes were calculated by adding to existing volumes the estimated traffic from approved but not yet constructed developments. The added traffic from approved but not yet constructed developments were provided by the city in the form of the Approved Trips Inventory (ATI).

99-083

Foxworthy Bridge Reassignment

With the construction of the Foxworthy Avenue bridge over Guadalupe River, traffic patterns in the area will change slightly. The primary change will result from a new link to Almaden Expressway from the developed areas on Hillsdale Avenue east of SR 87. The Foxworthy Avenue extension (from Guadalupe River to Pearl Avenue) was built with the Rubino residential development. Also part of the Rubino development was the removal of Hillsdale Avenue between Old Almaden Road and Pearl Avenue. This section of Hillsdale Avenue was used, in the past, as the primary connecting link between Almaden Expressway and the developed areas on Hillsdale Avenue east of SR 87. With the Foxworthy Avenue bridge in place, the link will be reestablished.

The reassignment is based on traffic patterns that existed when Hillsdale Avenue was still connected to Old Almaden Road. The primary intersection affected by the reassignment is Pearl Avenue/Foxworthy Avenue and Hillsdale Avenue. The volume shown for this intersection under background conditions is based on a December 1996 count (when Hillsdale was still connected to Old Almaden) with the addition of approved trips, including all Rubino traffic. Also affected by the reassignment is the southbound right-turn at Pearl Avenue and Capitol Expressway. This volume was reduced because traffic from Hillsdale Avenue will no longer have to use Capitol Expressway to access Almaden Expressway when the Foxworthy Bridge is in place. The volume summary tables contained in Appendix C list all reassignments of existing traffic due to the Foxworthy Bridge on the "Redist. of Existing" line.

Background traffic volumes are shown on Figure 7. The ATI are included in Appendix B.

Background Intersection Levels of Service

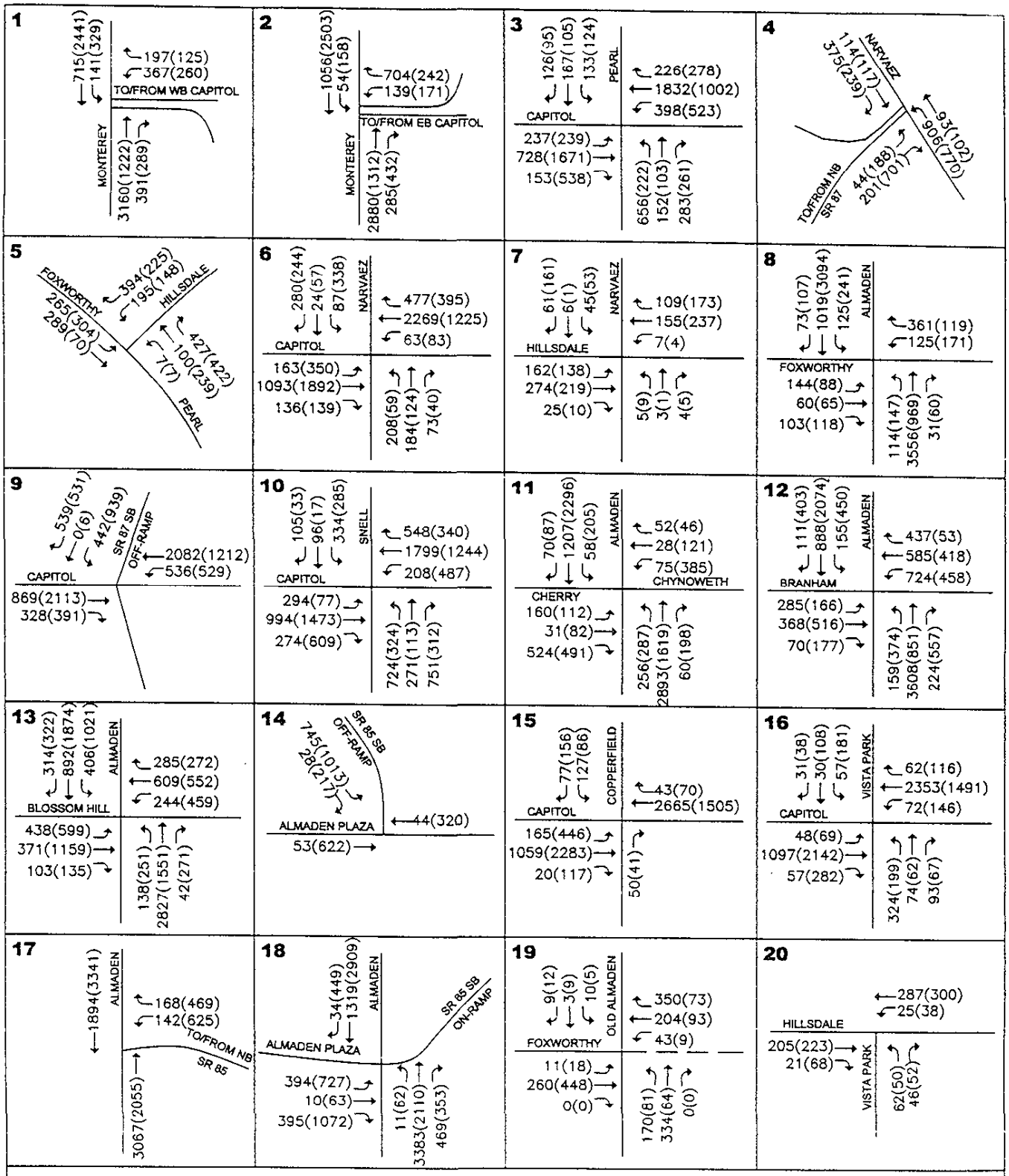
City of San Jose Intersection Analysis

The results of the intersection level of service analysis under background conditions are summarized in Table 5. The results show that the same four intersections that operate at LOS E or F under existing conditions would also operate at LOS E or F under background conditions.

Almaden Expressway and Branham Lane
Almaden Expressway and Blossom Hill Road
Almaden Expressway and SR 85 (S)/Almaden Plaza Way
SR 87 southbound ramps and Capitol Expressway

The level of service calculation sheets are included in Appendix D.

99-088



Legend

XX(XX) = AM(PM) peak hour volumes

Figure 7

BACKGROUND TRAFFIC VOLUMES

Hexagon
Transportation Consultants, Inc.

Communications Hill

99-083

Table 5
Background Intersection Levels of Service

Intersection	Peak Hour	Count Date	Existing Avg. Delay	Existing LOS	Background Avg. Delay	Background LOS
Capitol Expwy and Monterey Rd (N)*	AM	3/22/00	9.3	B	13.7	B
	PM	3/22/00	10.3	B	11.9	B
Capitol Expwy and Monterey Rd (S)*	AM	3/22/00	25.8	D	29.2	D
	PM	3/22/00	8.7	B	9.2	B
Pearl Ave and Capitol Expwy*	AM	5/10/00	46.4	E	34.2	D
	PM	5/11/00	25.8	D	25.5	D
SR 85 SB off-ramp and Almaden Plaza	AM	5/25/00	4.6	A	4.6	A
	PM	5/25/00	8.5	B	8.7	B
Narvaez Ave and SR 87 NB ramps	AM	5/31/00	9.5	B	11.8	B
	PM	5/31/00	9.4	B	9.7	B
Pearl Ave and Hillsdale Ave	AM	6/1/00	18.6	C	18.4	C
	PM	6/1/00	14.5	B	17.5	C
Almaden Expwy and Foxworthy Ave/a/	AM	5/23/00	15.2	C	25.3	D
	PM	5/23/00	16.9	C	21.1	C
Almaden Expwy and Branham Ln*	AM	6/14/00	75.3	F	76.9	F
	PM	3/14/00	42.7	E	43.9	E
Almaden Expwy and Blossom Hill Rd*	AM	6/15/00	42.6	E	43.7	E
	PM	3/15/00	122.6	F	145.5	F
Almaden Expwy and Cherry Ave	AM	5/24/00	18.6	C	19.0	C
	PM	5/24/00	24.5	C	33.0	D
Almaden Expwy and SR 85 (N)*	AM	6/15/00	5.4	B	5.7	B
	PM	10/1/98	18.2	C	20.4	C
Almaden Exwpy and SR 85 (S)*	AM	6/14/00	14.2	C	14.9	B
	PM	10/1/98	167.5	F	173.1	F
Copperfield Dr and Capitol Expwy	AM	5/18/00	7.0	B	7.7	B
	PM	5/18/00	9.5	B	10.0	B
Narvaez Ave and Capitol Expwy	AM	6/9/00	25.2	D	25.5	D
	PM	3/8/00	28.0	D	28.3	D
Vista Park Dr and Capitol Expwy	AM	5/23/00	16.7	C	17.5	C
	PM	5/23/00	18.0	C	20.2	C
SR 87 SB ramps and Capitol Expwy*/b/	AM	5/11/00	22.4	C	23.4	C
	PM	3/21/00	35.5	D	47.8	E
Snell Ave and Capitol Expwy*	AM	6/8/00	32.5	D	33.9	D
	PM	3/21/00	27.1	D	25.7	D
Hillsdale Avenue and Narvez Avenue	AM	8/26/99	--	--	21.2	C
	PM	8/26/99	--	--	21.5	C
Old Almaden Rd and Foxworthy Avenue/a/	PM	12/18/96	--	--	16.2	C
	PM	12/18/96	--	--	10.8	B

/a/ Background and project conditions include planned improvements.
/b/ The PM TRAFFIX coding was adjusted to get TRAFFIX to calculate an accurate level of service and intersection delay value.
* Denotes CMP intersection

99-083

CMP Intersection Analysis

The level of service results for the CMP intersections under background conditions are summarized in Table 5. The results show that the same three CMP intersections that operate at LOS F under existing conditions would also operate at LOS F under background conditions.

Almaden Expressway and Branham Lane
Almaden Expressway and Blossom Hill Road
Almaden Expressway and SR 85 (S)/Almaden Plaza Way

Background Signal Warrants

Peak-hour signal warrants were checked for the one unsignalized intersection to determine whether signalization would be justified on the basis of background peak-hour volumes. The analysis showed that the peak-hour volume warrant would not be satisfied at the unsignalized study intersection. The signal warrant analysis sheets are included in Appendix E.

Background Freeway Segment Levels of Service

The analysis of freeway segment level of service is not required for background conditions, per the City of San Jose and CMP requirements.

99-083

4.
Project Impacts and Mitigation Measures

This chapter describes project traffic conditions, significant project impacts, and measures that are recommended to mitigate project impacts. Included are descriptions of the significance criteria that define an impact, estimates of project-generated traffic, identification of the impacts, and descriptions of the mitigation measures. Project conditions are represented by background traffic conditions with the addition of project-related transportation improvements and traffic generated by the project.

Significant Impact Criteria

Significance criteria are used to establish what constitutes an impact. For this analysis there are two sets of relevant criteria for impacts on intersections and freeways. These are based on: (1) the City of San Jose (CSJ) Level of Service standards and (2) the CMP Level of Service standards.

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 if for either peak-hour:

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

2. The level of service at the intersection is an unacceptable LOS E or F under background 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.

99-083

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 background 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.

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, <u>and</u>

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

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.

Future Roadway Network Under Project Conditions

With the exception of project-sponsored roadway and intersection improvements, it is assumed in this analysis that the future near-term roadway network under project conditions would be the same as described under future background conditions. The project-sponsored improvements are described below.

Vistapark Drive and Hillsdale Avenue. The north leg of this intersection will be constructed to serve as an entrance point to the project site.

Project Entrance on Narvaez Avenue. A second project entrance will be constructed at Narvaez Avenue just south of the Helzer residential development.

Connection to the Lancaster Gate Neighborhood. Two connections will be made to the Lancaster Gate neighborhood from the project area west of Vistapark Drive fronting Hillsdale Avenue. This will allow for an alternate access point to the group of units at the base of the hill west of Vistapark Drive. These units also will have access to the main entrance off Vistapark Drive and via a right-turn only driveway to Hillsdale Avenue.

99-083

Intersection Lane Configurations Under Project Conditions

The intersection lane configurations under project conditions were assumed to be the same as described under future background conditions except with the addition of the project-sponsored improvements described above.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described further in the following sections.

Trip Generation

Through empirical research, data have been collected that correlate to common land uses their propensity for producing traffic. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development.

The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates to the size of the development. The recommended trip generation rates for use in the City of San Jose are detailed in *Interim Guidelines for Traffic Impact Analysis of Land Use Developments*, 1994. On the basis of these rates, it is estimated that the project would generate 5,738 daily trips, with 574 trips occurring during the AM peak hour and 574 occurring during the PM peak hour. Using the specified inbound/outbound splits, the project would produce 201 inbound trips and 373 outbound trips during the AM peak hour and 373 inbound and 201 outbound trips during the PM peak hour. The project trip generation estimates are presented in Table 6.

Trip Distribution

The trip distribution pattern for the proposed project was estimated based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses. The trip distribution pattern is shown graphically on Figure 8.

Trip Assignment

The peak-hour trips generated by the proposed development were assigned to the roadway system in accordance with the trip distribution pattern discussed above. Figure 9 shows the project trip assignment.

99-083

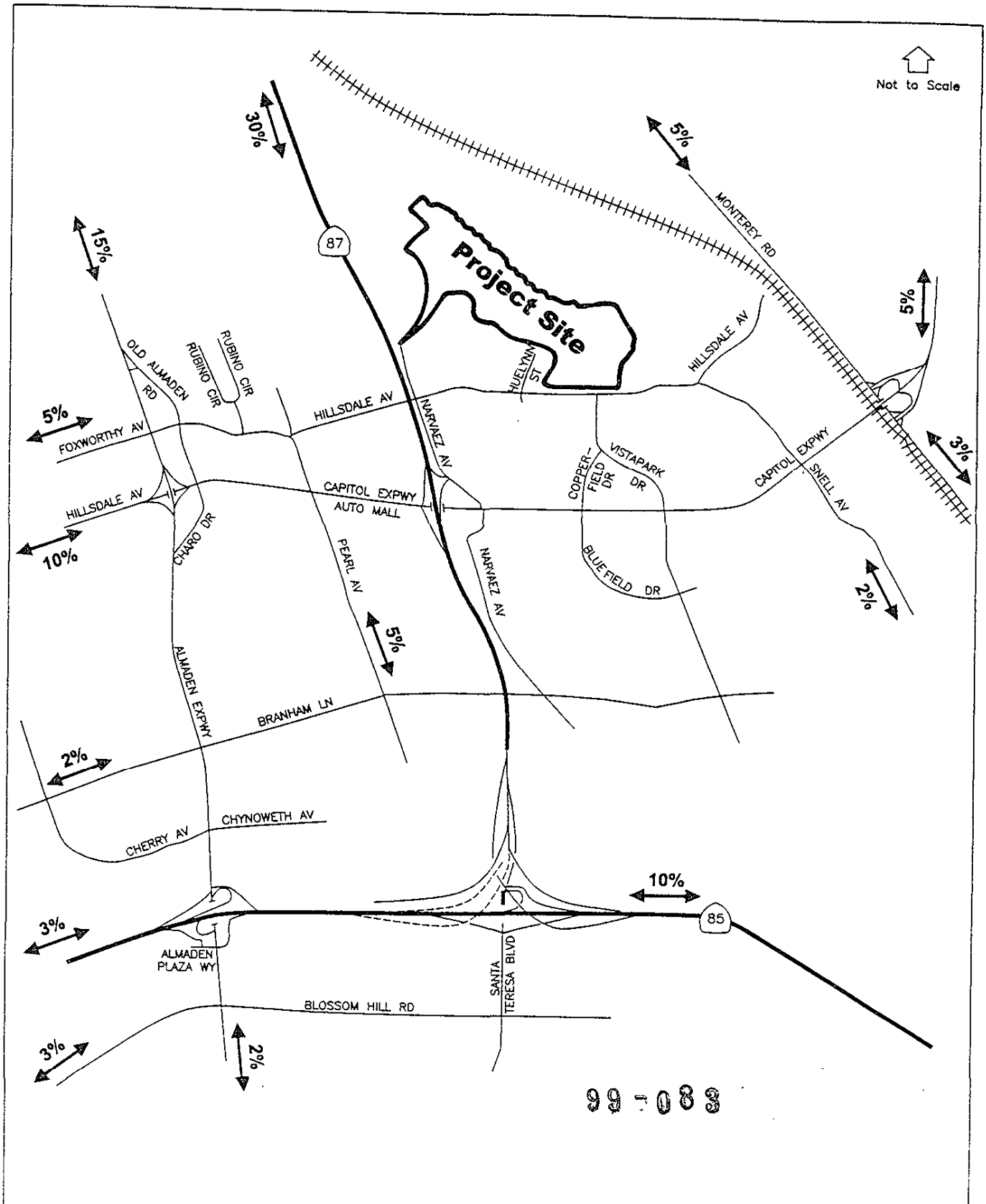
Table 6

Trip Generation Estimates for Communications Hill Residential Development

Land Use	Size	Daily Rate/a/	Daily Trips	AM Peak Hour Peak-Hour Rate	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour Peak-Hour Rate	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Single Family Attached	765 units	7.5	5,738	0.10	201	373	574	0.10	373	201	574

/a/ Per Unit

Source: City of San Jose Interim Guidelines for Traffic Impact Analysis for Land Developments, "Common Vehicular Trip Generation rates for the San Jose Area," March 1994



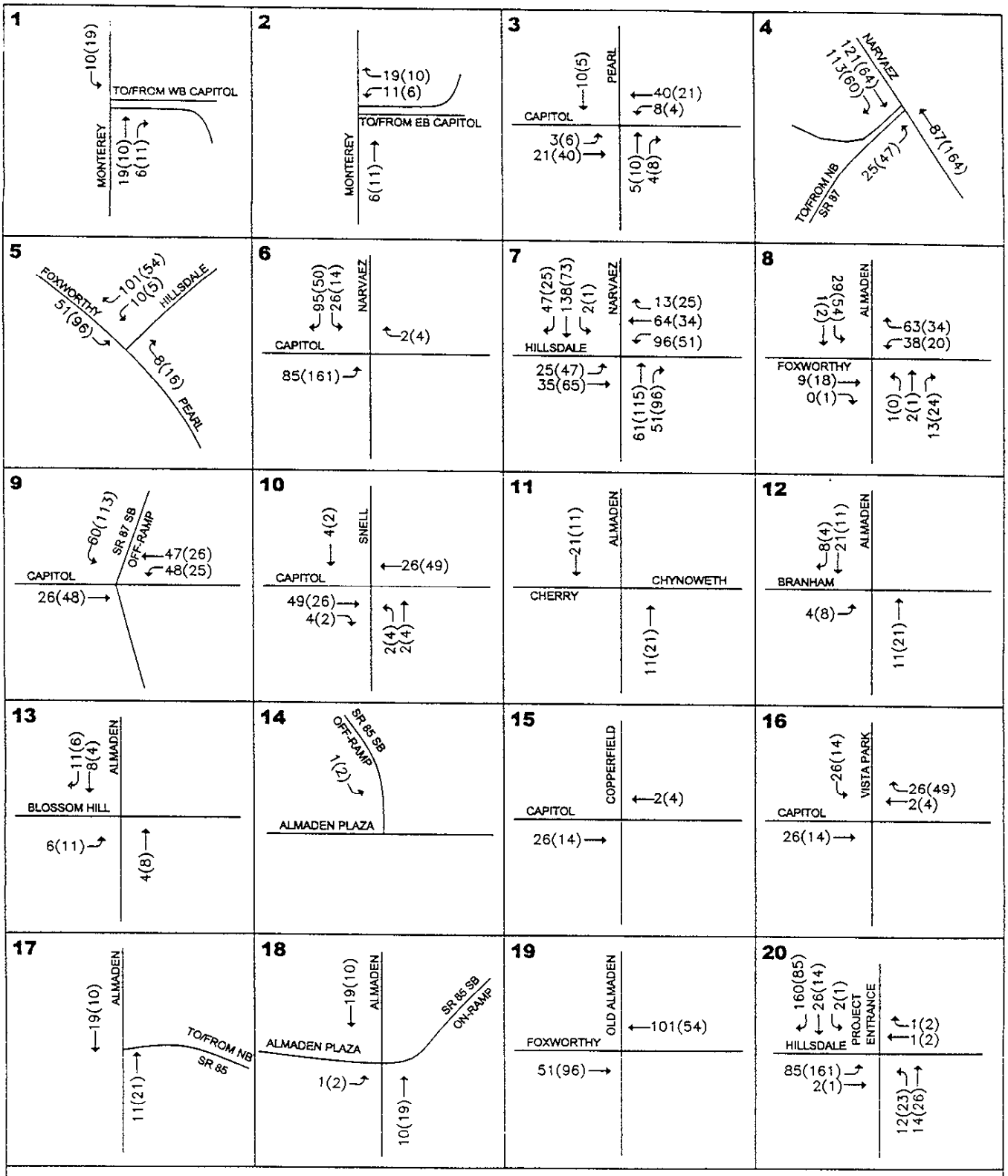
99-083

Figure 8

PROJECT TRIP DISTRIBUTION

Communications Hill

Hexagon Transportation Consultants, Inc.



Legend

XX(XX) = AM(PM) peak hour volumes

Hexagon
Transportation Consultants, Inc.

99-083

Figure 9

PROJECT TRIP ASSIGNMENT

Communications Hill

Project Traffic Volumes

Project trips, as represented in the above project trip assignment, were added to future background traffic volumes to obtain background plus project traffic volumes. Background traffic volumes plus project trips are typically referred to simply as *project traffic volumes*; this is contrasted with the term *project trips*, which is used to signify the traffic that is produced specifically by the project. The project traffic volumes are shown graphically on Figure 10. Traffic volumes for all components of traffic are tabulated in Appendix C.

Project Intersection Analysis

The results of the level of service analysis under project conditions are summarized in Table 7. The results show that of the four signalized intersections projected to operate at LOS E or F, the following intersection would be significantly impacted by the project according to the City of San Jose definition of impacts:

SR 87 southbound ramps and Capitol Expressway

This intersection also would be impacted according to the CMP definition of significant impacts.

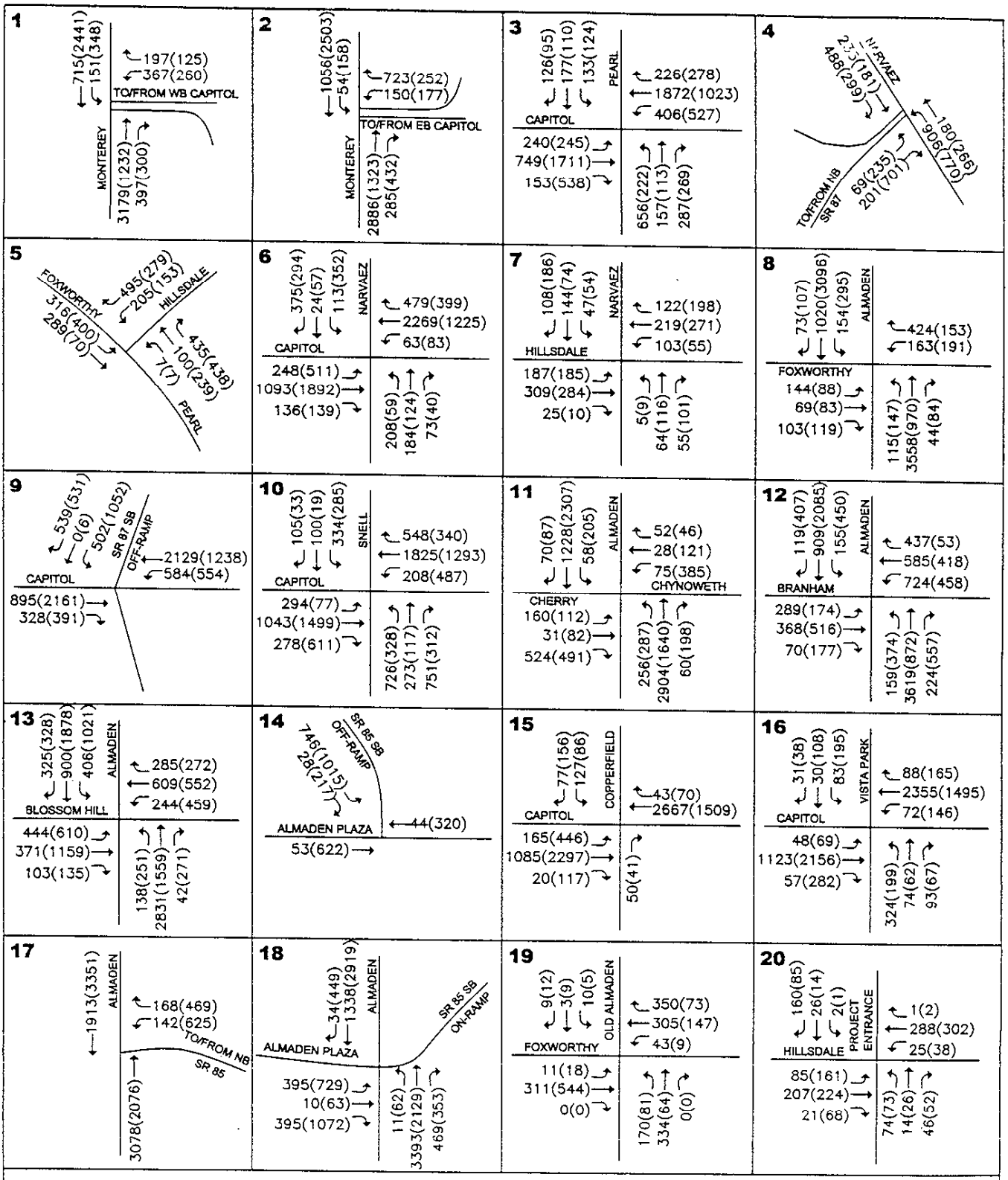
Intersection Impacts and Mitigation Measures

Described below is the intersection impact and recommended mitigation measures.

SR 87 southbound ramps and Capitol Expressway

Impact: Level of service would be LOS E under background conditions and the addition of project traffic would cause the level of service to degrade to LOS F. This constitutes a significant impact by CSJ and CMP standards.

Mitigation Measure. Convert the eastbound exclusive right-turn lane to a shared through/right-turn lane. This improvement can be made by restriping the eastbound approach. The existing bike lane that is located between the rightmost through lane and the right-turn lane would be relocated to the outside edge of the roadway. The fourth eastbound through lane would flow into the existing curb lane under the SR 87 overcrossing, which currently transitions to an exclusive right-turn lane at Narvaez Avenue. The exclusive eastbound right-turn lane at Narvaez Avenue would be converted to a shared through/right-turn lane. This would require restriping the west approach on Capitol Expressway at Narvaez Avenue. The existing turn island located on the southeast corner of the intersection would have to be modified to accommodate the additional eastbound through lane. This will also require the signal on the south leg to be modified, possibly relocating the signal pole and mast arm. The crosswalks on the south leg will need to be relocated to line up properly with the modified turn island. The pork-chop island on the south leg would need to be cut back to accommodate the new cross walk, and the south leg of the intersection would need to be restriped. The eastbound portion of the east leg of the intersection would need to be restriped with the forth through lane flowing into the lane currently used as a receiving lane for northbound right-turns. This receiving lane currently extends approximately 350 feet beyond the



Legend

XX(XX) = AM(PM) peak hour volumes

Hexagon
Transportation Consultants, Inc.

Figure 10

PROJECT TRAFFIC VOLUMES

Communications Hill

99-083

Table 7
Project Intersection Levels of Service

			Background		Project				Mitigated	
Intersection	Peak Hour	Peak Hour	Avg. Delay	LOS	Avg. Delay	LOS	Inc. in Cnt. Delay	Inc. in Cnt. V/C	Avg. Delay	LOS
Capitol Expwy and Monterey Rd (N)*	AM	3/22/00	13.7	B	14.0	B	0.3	0.007		
	PM	3/22/00	11.9	B	12.2	B	0.0	0.000		
Capitol Expwy and Monterey Rd (S)*	AM	3/22/00	29.2	D	31.0	D	2.4	0.013		
	PM	3/22/00	9.2	B	9.4	B	0.2	0.002		
Pearl Ave and Capitol Expwy*	AM	5/10/00	34.2	D	34.3	D	0.1	0.009		
	PM	5/11/00	25.5	D	25.5	D	0.0	0.010		
SR 85 SB off-ramp and Almaden Plaza	AM	5/25/00	4.6	A	4.6	A	0.0	0.000		
	PM	5/25/00	8.7	B	8.7	B	0.0	0.001		
Narvaez Ave and SR 87 NB ramps	AM	5/31/00	11.8	B	12.5	B	5.1	0.219		
	PM	5/31/00	9.7	B	10.7	B	1.5	0.038		
Pearl Ave and Hillsdale Ave	AM	6/1/00	18.4	C	18.7	C	0.5	0.005		
	PM	6/1/00	17.5	C	17.8	C	0.7	0.045		
Almaden Expwy and Foxworthy Ave/a/	AM	5/23/00	25.3	D	29.6	D	5.7	0.041		
	PM	5/23/00	21.1	C	22.6	C	1.0	0.011		
Almaden Expwy and Branham Ln*	AM	6/14/00	76.9	F	77.7	F	1.8	0.003		
	PM	3/14/00	43.9	E	43.9	E	0.0	0.002		
Almaden Expwy and Blossom Hill Rd*	AM	6/15/00	43.7	E	43.8	E	0.4	0.003		
	PM	3/15/00	145.5	F	146.4	F	-0.3	0.002		
Almaden Expwy and Cherry Ave	AM	5/24/00	19.0	C	19.0	C	0.1	0.002		
	PM	5/24/00	33.0	D	33.1	D	0.1	0.002		
Almaden Expwy and SR 85 (N)*	AM	6/15/00	5.7	B	5.7	B	0.0	0.002		
	PM	10/1/98	20.4	C	20.4	C	0.1	0.007		
Almaden Exwpy and SR 85 (S)*	AM	6/14/00	14.9	B	14.8	B	-0.1	0.003		
	PM	10/1/98	173.1	F	172.5	F	-0.5	0.001		
Copperfield Dr and Capitol Expwy	AM	5/18/00	7.7	B	7.7	B	0.0	0.000		
	PM	5/18/00	10.0	B	10.0	B	0.0	0.001		
Narvaez Ave and Capitol Expwy	AM	6/9/00	25.5	D	29.9	D	5.2	0.088	29.9	D
	PM	3/8/00	28.3	D	30.0	D	5.2	0.051	29.5	D
Vista Park Dr and Capitol Expwy	AM	5/23/00	17.5	C	17.6	C	0.0	0.000		
	PM	5/23/00	20.2	C	20.5	C	0.7	0.011		
SR 87 SB ramps and Capitol Expwy*/b/	AM	5/11/00	23.4	C	25.1	D	25.4	0.032	25.3	D
	PM	3/21/00	47.8	E	**71.7**	**F**	**33.5**	**0.052**	46.1	E
Snell Ave and Capitol Expwy*	AM	6/8/00	33.9	D	33.9	D	0.0	0.006		
	PM	3/21/00	25.7	D	25.7	D	0.0	0.006		
Hillsdale Avenue and Narvez Avenue/a/	AM	8/26/99	21.2	C	24.2	C	1.5	0.194		
	PM	8/26/99	21.5	C	24.4	C	2.6	0.176		
Old Almaden Rd and Foxworthy Avenue/a/	AM	12/18/96	16.2	C	16.8	C	0.0	0.000		
	PM	12/18/96	10.8	B	9.9	B	-0.8	0.030		

/a/ Background and project conditions include planned improvements.
/b/ The PM TRAFFIX coding was adjusted to get TRAFFIX to calculate an accurate level of service and intersection delay value.
Bold denotes significant impact
* Denotes CMP intersection

99 - 083

intersection and acts as a merge lane for northbound right-turns to move into the eastbound traffic flow. With the proposed improvements, this merge lane may need to be extended to allow eastbound through vehicles in the new curb lane to merge to the left with other through traffic. This should be accommodated within the existing right-of-way. With the added capacity of the additional eastbound lane, the minimum green time for that eastbound approach to the SR 87 southbound ramps can be reduced from 85 second to 78 seconds and the minimum green time for the westbound approach can be reduced to 92 seconds. With the implementation of these improvements, level of service at the SR 87 southbound ramps/Capitol Expressway intersection would be improved to better than background conditions (LOS E with 46.1 seconds of average delay). The feasibility drawing for these improvements is included in Appendix F.

Project Freeway Segment Analysis

Project traffic volumes on freeway segments were calculated by adding to existing freeway volumes the estimated project trips on freeway segments. The results of the analysis are summarized in Table 8. The results show that of the three directional freeway segments projected to operate at LOS F, all would be impacted by the project according to the CMP definition of freeway impacts:

SR 87 northbound, Curtner Avenue to Almaden Expressway (AM peak hour)
SR 87 northbound, Almaden Expressway to Alma Avenue (AM peak hour)
SR 87 southbound, I-280 to Alma Avenue (PM peak hour)

The ramp meter on the northbound SR 87 on-ramp from Narvaez Avenue causes excessive queues to back up onto Narvaez Avenue that extend as far back as Capitol Expressway. This in mainly due to insufficient capacity on the freeway to accommodate existing traffic demand. The project will add traffic to this ramp during the AM peak hour, which will likely increase the length of the queue on Narvaez Avenue. However, all of the project traffic will be coming from the north, whereas, the existing queue extends to the south. Furthermore, motorist will only tolerate a certain level of delay, at which point, they will find alternate routes to the freeway or travel at different times. This means that the queue length on Narvaez will not extend much further than it already does under existing conditions.

This impact could be mitigated by constructing additional lanes on SR 87. The project could widen the freeway segments of SR 87 by adding lanes to provide additional capacity in the vicinity of the impacted freeway segments. However, due to the extensive cost of such widening and the regional nature of freeway planning, this mitigation could not reasonably be implemented by a single development, and therefore, is considered infeasible. There is a Measure A/B project planned for SR 87 that will add HOV lanes in each direction, upgrading the freeway to a six-lane facility (2 mixed flow lanes and 1 HOV lane in each direction). While the addition of HOV lanes on SR 87 will help alleviate traffic congestion on SR 87, including increased congestion resulting from the project, it is unlikely that this freeway upgrade will be completed before the project is completed. Furthermore, because the addition of HOV lanes on SR 87 is a regional transportation project, the City of San Jose cannot ensure that these freeway improvements will be implemented. For these reasons, this is considered a significant unavoidable impact.

99-083

Table 8
Freeway Segment Levels of Service - Project Conditions

				Existing + Project Trips					Project Trips	
Freeway	Segment	Direction	Peak Hour	Ave. Speed/a/	# of Lanes	Volume/a/	Density	LOS	Volume	% Capacity
SR 87	SR 85 to Capitol Expwy	NB	AM	65	2	2,155	16.6	C	25	0.5%
			PM	60	2	3,677	30.6	D	47	1.0%
SR 87	Capitol Expwy to Curtner Avenue	NB	AM	60	2	3,373	28.1	D	113	2.5%
			PM	60	2	3,000	25.0	D	60	1.3%
SR 87	Curtner Avenue to Almaden Expwy	NB	AM	25	2	3,503	70.1	**F**	**113**	**2.5%**
			PM	60	2	2,770	23.1	C	60	1.3%
SR 87	Almaden Expwy to Alma Av	NB	AM	25	2	3,263	65.3	**F**	**113**	**2.5%**
			PM	50	2	4,410	44.1	D	60	1.3%
SR 87	Alma Av to I-280	NB	AM	60	2	4,243	35.4	D	113	2.5%
			PM	60	2	3,530	29.4	D	60	1.3%
SR 87	I-280 to Alma Avenue	SB	AM	65	2	2,520	19.4	C	60	1.4%
			PM	10	2	2,583	129.2	**F**	**113**	**2.6%**
SR 87	Alma Avenue to Almaden Expwy	SB	AM	65	2	2,230	17.2	C	60	1.4%
			PM	60	2	4,113	34.3	D	113	2.6%
SR 87	Almaden Expwy to Curtner Avenue	SB	AM	65	2	950	7.3	A	60	1.4%
			PM	60	2	2,663	22.2	C	113	2.6%
SR 87	Curtner Avenue to Capitol Exwpy	SB	AM	65	2	1,760	13.5	B	60	1.4%
			PM	60	2	3,293	27.4	D	113	2.5%
SR 87	Capitol Expwy to SR 85	SB	AM	65	2	827	6.4	A	47	1.0%
			PM	60	2	2,215	18.5	C	25	0.5%

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 1998.

Other Transportation Issues

Signal Warrant Analysis

Peak-hour signal warrants were checked for the one unsignalized intersection to determine whether signalization would be justified on the basis of project peak-hour volumes. The analysis showed that the peak-hour volume warrant would not be satisfied at the unsignalized study intersection. The results of the signal warrant analysis are summarized in Table 9. The signal warrant analysis sheets are included in Appendix E.

Table 9
Signal Warrant Analysis Summary

			Existing	Background	Project Conditions	
	Peak Hour	Count Date	Warrant Met?	Warrant Met?	Warrant Met?	LOS
Vistapark Dr/Proj. Ent. and Hillsdale Ave	AM	6/20/00	NO	NO	NO	C
	PM	6/20/00	NO	NO	NO	C

Note: Reported LOS is based on existing or planned intersection geometry with signalization.

Intersection Operations Analysis

The analysis of project intersection level of service was supplemented with an analysis of intersection *operations* for selected unsignalized and signalized intersections. The operations analysis is based on vehicle queuing for high-demand turning movements at intersections. The basis of the analysis is as follows: (1) the TRAFFIX intersection analysis software is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 20 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement. This analysis thus provides a basis for estimating future storage requirements at intersections.

The analysis indicated that the estimated maximum vehicle queues for some of the high-demand movements would exceed the existing or planned vehicle storage capacity under project conditions. The following intersections would have inadequate storage capacity under project conditions:

Almaden Expressway and Foxworthy Avenue (WBL)
Narvaez Avenue and Capitol Expressway (EBL)
Narvaez Avenue and Hillsdale Avenue (EBL)

The intersection of Narvaez Avenue and Hillsdale Avenue is currently under construction. The planned length of the eastbound left-turn pocket is 150 feet. The operational analysis indicates that the eastbound left-turn lane should be designed to be at least 180 feet long.

The TRAFFIX queue estimates and a tabulated summary of the findings are provided in Table 10.

Table 10

Turn-Pocket Storage Analysis

Intersection	Peak Hour	Mvmt.	Project Conditions: Existing # Lanes	Project Conditions: Total Existing Storage ft.	Project Conditions: Vehicle Queue[1]	Project Conditions: Total Required Storage ft.[2]	Comments
Almaden Expwy and Foxworthy Ave	PM	WBL	1	155	16	320	Lengthen pocket to 320'.
	PM	SBL	1	550	23	460	Adequate storage provided.
Pearl Ave and Hillsdale Ave/Foxworthy Ave	AM	WBL	2	305	8	160	Adequate storage provided.
	PM	SBL	2	410	16	320	Adequate storage provided.
Narvaez Ave and Hillsdale Ave	PM	EBL	1	150	9	180	Lengthen pocket to 180'.
Vistapark Dr/Proj. Ent. And Hillsdale Ave	PM	EBL	--	--	7	140	Design pocket to provide at least 140 feet of storage.
	PM	NBL	1	395	4	80	Adequate storage provided.
Pearl Ave and Capitol Expwy	AM	EBL	2	380	19	380	Adequate storage provided.
SR 87 NB ramps and Narvaez Ave	PM	EBL	1	275	8	160	Adequate storage provided.
Narvaez Ave and Capitol Expwy	PM	SBL	2	380	27	540	Shared though/left can queue back to 87 off-ramp
	PM	EBL	2	595	34	680	Lengthen each pocket 45 feet.
Vistapark Dr and Capitol Expwy	PM	SBL	1	300	14	280	Adequate storage provided.
	PM	EBL	1	135	6	120	Adequate storage provided.

Note: Vehicle queue calculations based on signalized intersection conditions.
1 'In # of vehicles, based on design vehicle queue calculated by TRAFFIX.
2 Calculated based on TRAFFIX output as follows: ((Design Veh. Queue x Ave length of veh. (20')/number of lanes).

Field observations revealed that the TRAFFIX software overestimates the queue lengths at the intersection of SR 87 southbound ramps and Capitol Expressway. The queue lengths observed in the field are well below the capacity of each of the movements. The additional vehicles in queue added by the project would not cause the queues to grow beyond the capacity of the movements. Therefore, the project would not cause any operational problems at this intersection.

Recommended Improvements

Almaden Expressway and Foxworthy Avenue. Extend the existing westbound left-turn pocket to the maximum available length. This improvement can be made by restriping the westbound approach and may require some curb and sidewalk removal, depending on the length of the extension. Project trips account for only a portion of the traffic added to this intersection, therefore, the project should pay a fair share toward the cost of this improvement.

Narvaez Avenue and Capitol Expressway. Extend each of the existing eastbound left-turn lanes 45 feet. This improvement will require modifications to the existing raised median island. Project trips account for only a portion of the traffic added to this intersection, therefore, the project should pay a fair share toward the cost of this improvement.

Narvaez Avenue and Hillsdale Avenue. Lengthen the future eastbound left-turn lane from 150 feet to 180 feet. Since project traffic will account for a portion of the traffic added to this intersection, the project should pay a fair share toward the cost of this improvement.

Site Access and On-Site Circulation

The site plan shows two access roads leading to the project site, one from Narvaez Avenue and the other from Hillsdale Avenue. In addition, there will be two right-turn only driveways on Hillsdale Avenue: one just east of Vistapark Drive that serves the small group of units at the base of the hill (east of Vistapark Drive) and one to serve the larger group of units at the base of the hill (west of Vistapark Drive). This group of units also will have access to the road intersecting Hillsdale Avenue west of Vistapark Drive via two connections to the existing Lancaster Gate neighborhood. Both groups of units at the base of the hill will also have access to the main project access road (Vistapark Drive). The Narvaez Avenue access road has a right-of-way (ROW) of approximately 45 feet and leads through the southern portion of the Helzer residential development fronting a row of houses. This access road is narrow and has a steep grade (approximately 14% at the steepest point) and should be designated as a secondary entrance to the project.

The main access road has a 90-foot ROW and begins at the intersection of Vistapark Drive and Hillsdale Avenue and leads up the hill making a 90-degree turn where it becomes a narrower road (50-foot ROW) leading to the project. The main (90-foot ROW) access road will eventually continue from where it terminates, at the 90-degree bend, and lead over the hill eventually connecting to Curtner Avenue as Communications Hill builds out. With the extension of the main access road, the 90-degree bend will become a "T" intersection. The main access road has a grade of 12% at the steepest point. The access on Hillsdale Avenue should be designated as the primary access point to the project site. Appropriate measures should be taken to ensure that the Hillsdale Avenue access point serves as the main project entrance.

99-083

5.
Future Growth Conditions

This chapter presents a summary of the traffic conditions that would occur under future growth conditions. The purpose of analyzing future growth conditions is to assess the traffic conditions that would occur at the time that the proposed development becomes occupied. For this analysis, the assumed occupancy date is June 2002. The analysis of future growth conditions is required by the CMP and includes an analysis of level of service for CMP intersections only.

Roadway Network Under Future Growth Conditions

All of the roadway improvements that were assumed to be completed under project conditions were also included under future growth conditions. However, future growth conditions do not include implementation of the project mitigation measures. Thus, the intersection lane configurations under future growth conditions were assumed to be the same as described under project conditions.

Future Growth Traffic Volumes

Traffic volumes under future growth conditions were estimated by applying to the existing volumes an annual growth rate of two percent, then adding the trips from approved developments and the project trips.

99-083

3

Intersection Levels of Service Under Future Growth Conditions

CMP Intersection Analysis

The level of service results for the CMP intersections under future growth conditions are summarized in Table 11. The results show that four of the CMP study intersections would operate at LOS F during at least one of the peak hours under future growth conditions. The future growth traffic volumes and the intersection level of service calculations are included in Appendix D.

Table 11
CMP Intersection Levels of Service Under Future Growth Conditions

Intersection	Peak Hour	Count Date	Avg. Delay	LOS
Capitol Expwy and Monterey Rd (N)*	AM	36607	14.4	B
	PM	36607	12.2	B
Capitol Expwy and Monterey Rd (S)*	AM	3/22/00	37.3	D
	PM	3/22/00	9.5	B
Pearl Ave and Capitol Expwy*	AM	5/10/00	35.3	D
	PM	5/11/00	25.9	D
Almaden Expwy and Branham Ln*	AM	5/25/00	94.5	F
	PM	5/25/00	46.0	E
Almaden Expwy and Blossom Hill Rd*	AM	5/31/00	47.3	E
	PM	5/31/00	168.9	F
Almaden Expwy and SR 85 (N)*	AM	6/15/00	5.8	B
	PM	10/1/98	23.0	C
Almaden Exwpy and SR 85 (S)*	AM	6/14/00	15.1	C
	PM	10/1/98	198.7	F
SR 87 SB ramps and Capitol Expwy*/b/	AM	5/11/00	25.3	D
	PM	3/21/00	82.3	F
Snell Ave and Capitol Expwy*	AM	6/8/00	34.5	D
	PM	3/21/00	26.1	D

/a/ Background and project conditions include planned improvements.
/b/ The PM TRAFFIX coding was adjusted to get TRAFFIX to calculate an accurate level of service and intersection delay value.
* Denotes CMP intersection

99-083

6. Conclusions

The potential impacts of the project were evaluated in accordance with the standards set forth by the City of San Jose and the Congestion Management Program (CMP) of Santa Clara County. The study included the analysis of AM and PM peak-hour traffic conditions for 16 signalized intersections, 1 unsignalized intersection, 2 intersections were signalization is planned, and 5 freeway segments.

The impacts of the project on intersections and freeways were identified on the basis of the City of San Jose (CSJ) Level of Service standards and the CMP Level of Service standards.

Project Impacts

Listed below are the transportation facilities that would be impacted by the project and the criteria by which the impacts were determined to occur:

SR 87 southbound ramps and Capitol Expressway – CSJ LOS, CMP LOS
SR 87 northbound, Curtner Avenue to Almaden Expressway – CMP LOS
SR 87 northbound, Almaden Expressway to Alma Avenue – CMP FWY LOS
SR 87 southbound, I-280 to Alma Avenue – CMP FWY LOS

99-083

Mitigation Measures

The following measures have been recommended to mitigate the project impacts:

SR 87 southbound ramps and Capitol Expressway. Convert the eastbound exclusive right-turn lane to a shared through/right-turn lane. This improvement can be made by restriping the eastbound approach. The existing bike lane that is located between the rightmost through lane and the right-turn lane would be relocated to the outside edge of the roadway. The fourth eastbound through lane would flow into the existing curb lane under the SR 87 overcrossing, which currently transitions to an exclusive right-turn lane at Narvaez Avenue. The exclusive eastbound right-turn lane at Narvaez Avenue would be converted to a shared through/right-turn lane. This would require restriping the west approach on Capitol Expressway at Narvaez Avenue. The existing turn island located on the southeast corner of the intersection would have to be modified to accommodate the additional eastbound through lane. This will also require the signal on the south leg to be modified, possibly relocating the signal pole and mast arm. The crosswalks on the south leg will need to be relocated to line up properly with the modified turn island. The pork-chop island on the south leg would need to be cut back to accommodate the new cross walk, and the south leg of the intersection would need to be restriped. The eastbound portion of the east leg of the intersection would need to be restriped with the forth through lane flowing into the lane currently used as a receiving lane for northbound right-turns. This receiving lane currently extends approximately 350 feet beyond the intersection and acts as a merge lane for northbound right-turns to move into the eastbound traffic flow. With the proposed improvements, this merge lane may need to be extended to allow eastbound through vehicles in the new curb lane to merge to the left with other through traffic. This should be accommodated within the existing right-of-way. With the added capacity of the additional eastbound lane, the minimum green time for that eastbound approach to the SR 87 southbound ramps can be reduced from 85 second to 78 seconds and the minimum green time for the westbound approach can be reduced to 92 seconds. With the implementation of these improvements, level of service at the SR 87 southbound ramps/Capitol Expressway intersection would be improved to better than background conditions (LOS E with 46.1 seconds of average delay).

Freeway Segments. It is not feasible for any single development to pay for improvements to freeway segments, such as adding additional lanes, to add capacity to accommodate additional demand generated by project traffic. There is a Measure A/B project planned for SR 87 that will add HOV lanes in each direction, upgrading the freeway to a six-lane facility (2 mixed flow lanes and 1 HOV lane in each direction). However, it is unlikely that this freeway upgrade will be completed before the project is completed, therefore, this improvement cannot be considered as mitigation.

Other Transportation Issues and Recommended Improvements

In addition to the improvements listed above to mitigate project impacts, several operational improvements are recommended to remedy operational deficiencies. The operational deficiencies and recommended improvements are listed below.

99-083

Almaden Expressway and Foxworthy Avenue. Extend the existing westbound left-turn pocket to the maximum available length. This improvement can be made by restriping the westbound approach and may require some curb and sidewalk removal, depending on the length of the extension. Project trips account for only a portion of the traffic added to this intersection, therefore, the project should pay a fair share toward the cost of this improvement.

Narvaez Avenue and Capitol Expressway. Extend each of the existing eastbound left-turn lanes 45 feet. This improvement will require modifications to the existing raised median island. Project trips account for only a portion of the traffic added to this intersection, therefore, the project should pay a fair share toward the cost of this improvement.

Narvaez Avenue and Hillsdale Avenue. Lengthen the future eastbound left-turn lane from 150 feet to 180 feet. Since project traffic will account for a portion of the traffic added to this intersection, the project should pay a fair share toward the cost of this improvement.

Site Design Issues. The evaluation of the proposed site access and circulation for the project shows that the access point on Hillsdale Avenue should be designated as the main entrance to the project, with the Narvaez Avenue access acting only as a secondary entrance. Appropriate measures should be taken to ensure that the Hillsdale access point serves as the main entrance to the project. Furthermore, horizontal and vertical sight distance issues may arise as a result of roadway alignment and the hilly terrain of the project site. Any future on-site traffic control devices should be selected and located such that sight distance problems are alleviated.

Bicycle and Pedestrian Facilities. The evaluation of bicycle, transit, and pedestrian facilities showed that demand for such facilities would increase with the construction of the project. New and unimproved streets in the area will be designed to standard City of San Jose widths to safely accommodate bicycle traffic. Sidewalks will also be built on new and unimproved streets. Hillsdale Avenue currently has several sections where the street is not widened to the planned width and no sidewalks are available. The sections are mainly under the SR 87 overpass and east of SR 87. As part of the Rubino residential development, the section of Hillsdale Avenue from SR 87 to Canoas Creek will be widened to four lanes and sidewalks will be constructed. The remaining section along the project frontage should have sidewalks installed by the project.

Transit Service. Transit service exists along Hillsdale Avenue that is not within a reasonable walking distance to future housing on the project site. The project would create demand for local bus service that would not be met by existing service. Therefore, as Communications Hill builds out, it may be desired to extend a bus route into the development.

99-083

Communications Hill
Residential Development
Technical Appendices

December 4, 2000

99-083

Appendix A

Traffic Counts

99-083

MARKS TRAFFIC DATA SERVICE

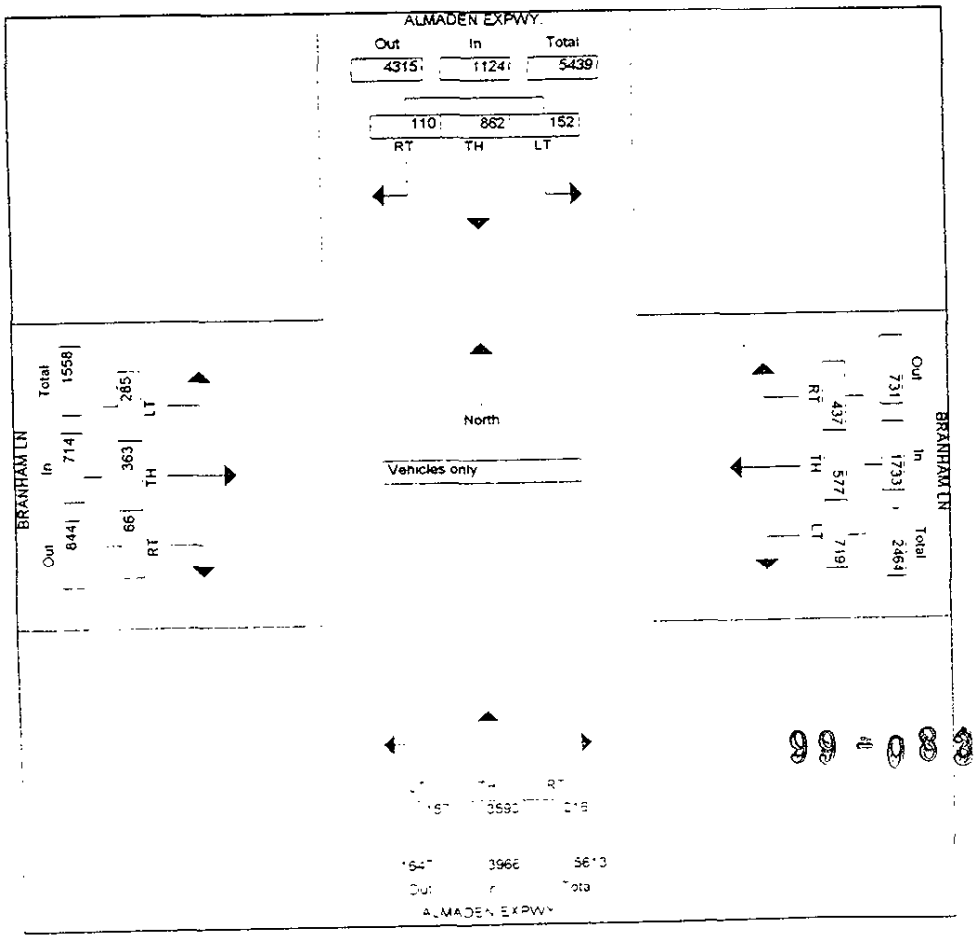
CITY OF SAN JOSE

File Name : almaden_branham-a
Site Code 00000000
Start Date : 06/14/2000
Page : 1

Groups Printed: Vehicles only

	ALMADEN EXPWY Southbound				BRANHAM LN. Westbound				ALMADEN EXPWY Northbound				BRANHAM LN Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App. Total	Int. Total
07:00	20	139	19	178	85	72	100	257	33	577	19	629	13	44	70	127	1191
07:15	36	161	24	221	114	133	129	376	40	785	28	853	10	65	67	142	1592
07:30	18	202	28	248	121	170	169	460	43	928	26	997	23	148	88	259	1964
07:45	[illegible]	[illegible]	35	313	128	164	172	464	69	953	29	966	12	95	50	157	1900
Total	108	746	106	960	448	539	570	1557	185	3158	102	3445	58	352	275	685	6647
08:00	27	198	33	258	104	121	147	372	58	844	56	958	16	58	78	152	1740
08:15	31	218	56	305	84	122	231	437	46	953	46	1045	15	62	69	146	1933
08:30	24	240	72	336	65	110	148	323	48	573	48	669	14	72	59	145	1473
08:45	51	252	78	381	62	116	188	366	58	538	59	655	17	157	51	225	1627
Total	133	908	239	1280	315	469	714	1498	210	2908	209	3327	62	349	257	668	6773
Grand Total	241	1654	345	2240	763	1008	1284	3055	395	6066	311	6772	120	701	532	1353	13420
Apprch %	10.8	73.8	15.4		25.0	33.0	42.0		5.8	89.6	4.6		8.9	51.8	39.3		
Total %	1.8	12.3	2.6	16.7	5.7	7.5	9.6	22.8	2.9	45.2	2.3	50.5	0.9	5.2	4.0	10.1	

	ALMADEN EXPWY. Southbound				BRANHAM LN. Westbound				ALMADEN EXPWY Northbound				BRANHAM LN. Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App. Total	RT	TH	LT	App Total	RT	TH	LT	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	07:30																
Volume	110	862	152	1124	437	577	719	1733	216	3593	157	3966	66	363	285	714	7537
Percent	9.8	76.7	13.5		25.2	33.3	41.5		5.4	90.6	4.0		9.2	50.8	39.9		
High Int.	07:45				07:45				08:15				07:30				07:30
Volume	34	244	56	313	128	170	231	464	69	953	56	1045	23	148	88	259	1964
Peak Factor				0.898				0.934				0.949				0.689	0.959



99-083

CITY OF SAN JOSE

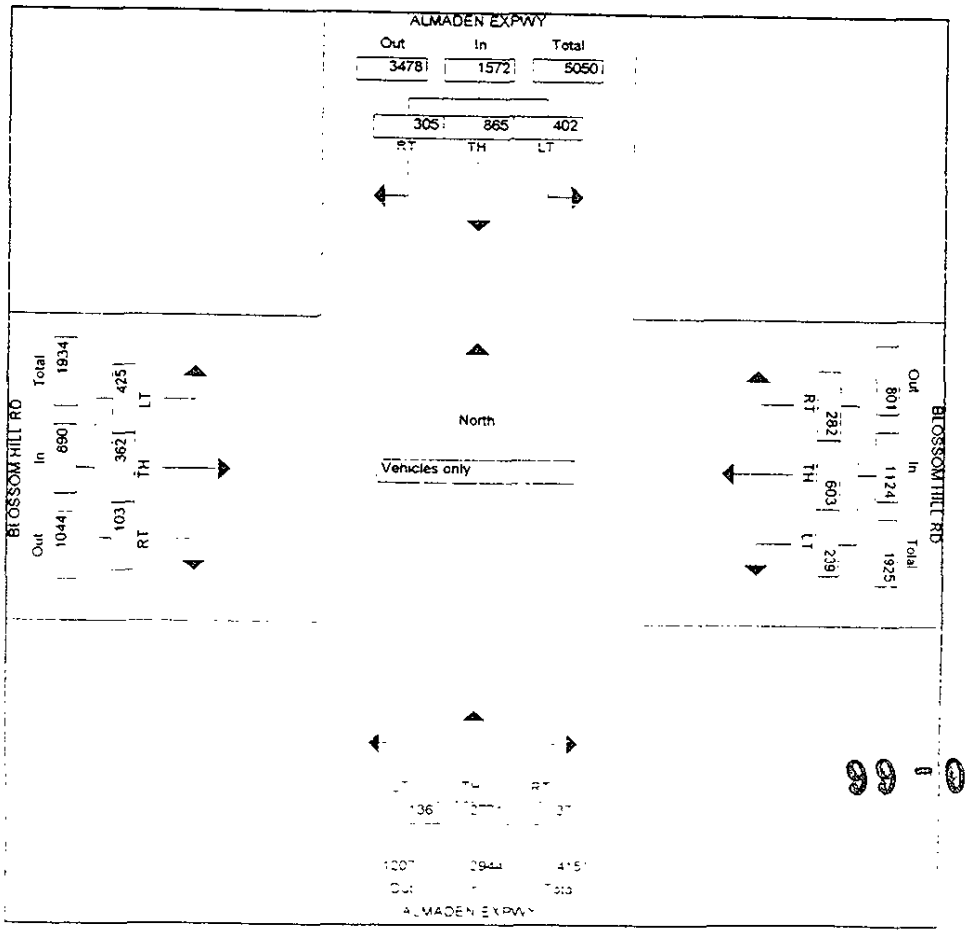
MARKS TRAFFIC DATA SERVICE

File Name : almaden_blossom-a
Site Code : 00000000
Start Date : 06/15/2000
Page : 1

Groups Printed Vehicles only

	ALMADEN EXPWY Southbound				BLOSSOM HILL RD Westbound				ALMADEN EXPWY Northbound				BLOSSOM HILL RD Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App. Total	RT	TH	LT	App Total	Int. Total
07 00	50	144	27	221	91	84	17	192	1	698	22	721	14	36	111	161	1295
07 15	85	183	58	326	92	114	25	231	4	722	19	745	13	55	103	171	1473
07 30	137	240	56	433	74	153	43	270	5	722	35	762	21	49	117	187	1652
07 45	116	204	81	401	83	200	61	344	14	722	26	762	52	98	134	284	1791
Total	388	771	222	1381	340	551	146	1037	24	2864	102	2990	100	238	465	803	6211
08 00	66	228	100	394	69	149	79	297	10	513	43	566	27	67	104	198	1455
08 15	53	195	67	315	70	121	41	232	5	767	27	799	13	108	93	214	1560
08 30	70	238	154	462	60	133	58	251	8	769	40	817	11	89	94	194	1724
08 45	96	287	110	493	65	109	44	218	10	515	43	568	16	88	100	204	1483
Total	285	948	431	1664	264	512	222	998	33	2564	153	2750	67	352	391	810	6222
Grand Total	673	1719	653	3045	604	1063	368	2035	57	5428	255	5740	167	590	856	1613	12433
Apprch %	22 1	56 5	21 4		29 7	52.2	18 1		1 0	94 6	4.4		10 4	36 6	53 1		
Total %	5 4	13.8	5 3	24 5	4 9	8.5	3.0	16.4	0 5	43 7	2.1	46.2	1.3	4 7	6 9	13.0	

	ALMADEN EXPWY. Southbound				BLOSSOM HILL RD. Westbound				ALMADEN EXPWY Northbound				BLOSSOM HILL RD Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App Total	Int. Total
Peak Hour From 07 00 to 08 45 - Peak 1 of 1																	
Intersection	07 45																
Volume	305	865	402	1572	282	603	239	1124	37	2771	136	2944	103	362	425	890	6530
Percent	19 4	55 0	25.6		25 1	53.6	21 3		1 3	94 1	4 6		11.6	40.7	47.8		
High Int.	08 30				07 45				08 30				07 45				07 45
Volume	116	238	154	462	83	200	79	344	14	769	43	817	52	108	134	284	1791
Peak Factor				0.851				0 817				0 901				0 783	0.912



99-083

MARKS TRAFFIC DATA SERVICE

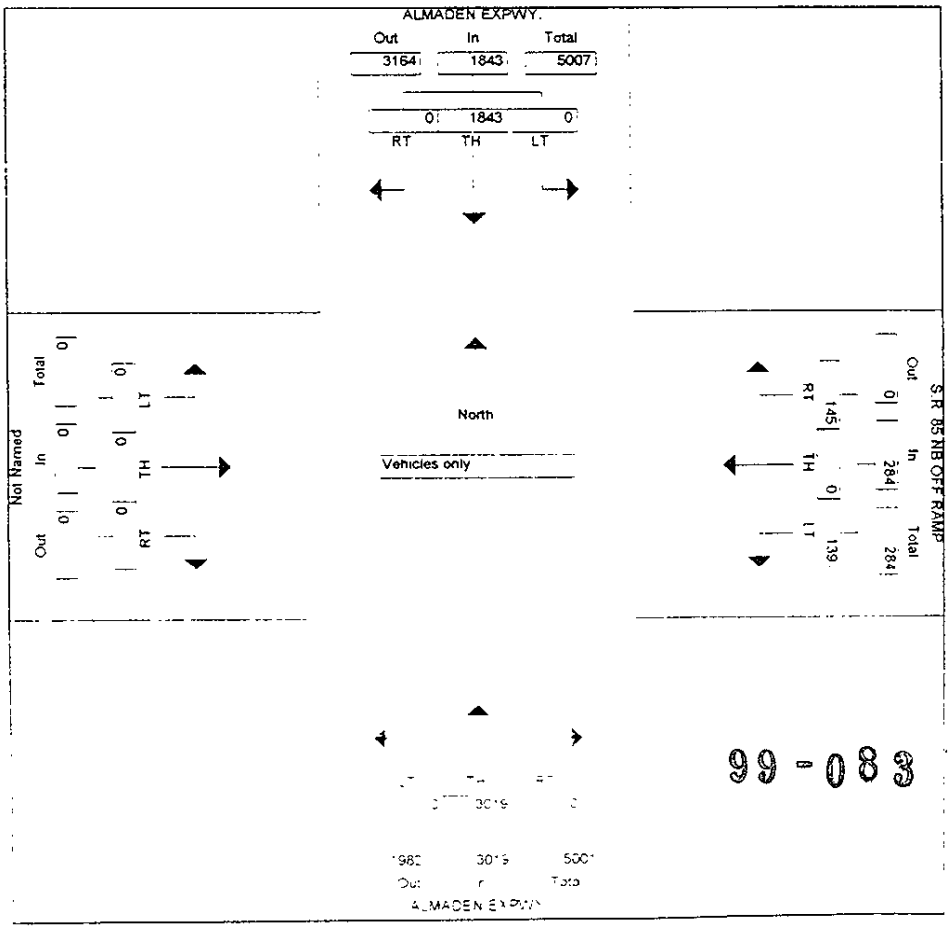
CITY OF SAN JOSE

File Name : almaden_85nb-a
Site Code : 00000000
Start Date : 06/15/2000
Page : 1

Groups Printed: Vehicles only

	ALMADEN EXPWY Southbound				S.R. 85 NB OFF RAMP Westbound				ALMADEN EXPWY Northbound				Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App Total	Int. Total
07:00	0	291	0	291	26	0	35	61	0	626	0	626	0	0	0	0	978
07:15	0	374	0	374	35	0	40	75	0	717	0	717	0	0	0	0	1166
07:30	0	515	0	515	38	0	35	73	0	737	0	737	0	0	0	0	1325
07:45	0	481	0	481	36	0	40	76	0	777	0	777	0	0	0	0	1334
Total	0	1661	0	1661	135	0	150	285	0	2857	0	2857	0	0	0	0	4803
08:00	0	459	0	459	36	0	32	68	0	789	0	789	0	0	0	0	1316
08:15	0	388	0	388	35	0	32	67	0	716	0	716	0	0	0	0	1171
08:30	0	457	0	457	33	0	38	71	0	633	0	633	0	0	0	0	1161
08:45	0	471	0	471	40	0	42	82	0	556	0	556	0	0	0	0	1109
Total	0	1775	0	1775	144	0	144	288	0	2694	0	2694	0	0	0	0	4757
Grand Total	0	3436	0	3436	279	0	294	573	0	5551	0	5551	0	0	0	0	9560
Apprch %	0.0	100.0	0.0		48.7	0.0	51.3		0.0	100.0	0.0		0.0	0.0	0.0		
Total %	0.0	35.9	0.0	35.9	2.9	0.0	3.1	6.0	0.0	58.1	0.0	58.1	0.0	0.0	0.0	0.0	

	ALMADEN EXPWY. Southbound				S.R. 85 NB OFF RAMP Westbound				ALMADEN EXPWY. Northbound				Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	07:30																
Volume	0	1843	0	1843	145	0	139	284	0	3019	0	3019	0	0	0	0	5146
Percent	0.0	100.0	0.0		51.1	0.0	48.9		0.0	100.0	0.0		0.0	0.0	0.0		
High Int.	07:30				07:45				08:00				6:45:00 AM				07:45
Volume	0	515	0	515	38	0	40	76	0	789	0	789	0	0	0	0	1334
Peak Factor				0.895				0.934				0.957					0.964



MARKS TRAFFIC DATA SERVICE

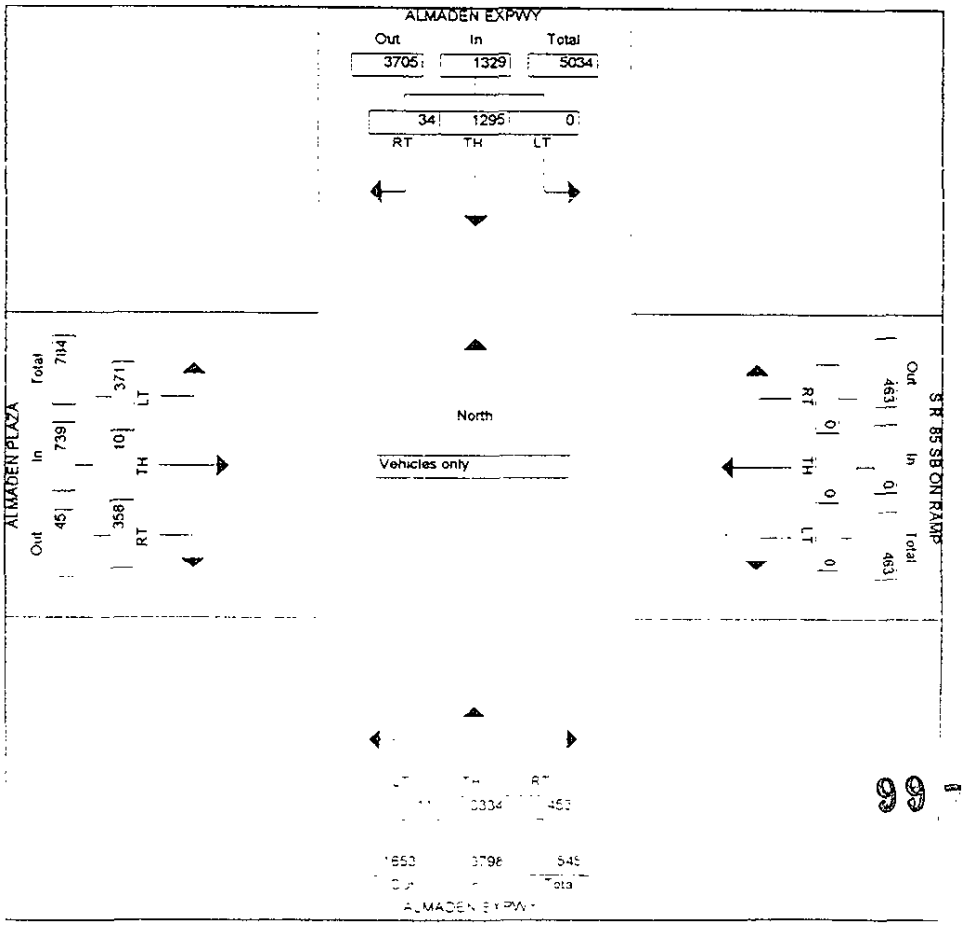
CITY OF SAN JOSE

File Name : almaden_85sb-a
Site Code : 00000000
Start Date : 06/14/2000
Page : 1

Groups Printed: Vehicles only

	ALMADEN EXPWY Southbound				S.R. 85 SB ON RAMP Westbound				ALMADEN EXPWY Northbound				ALMADEN PLAZA Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App Total	Int. Total
07:00	8	215	0	223	0	0	0	0	77	793	1	871	66	2	53	121	1215
07:15	13	237	0	250	0	0	0	0	86	837	0	923	70	0	66	136	1309
07:30	5	325	0	330	0	0	0	0	89	869	4	962	92	4	90	186	1478
07:45	13	375	0	388	0	0	0	0	113	853	3	969	93	1	78	172	1529
Total	39	1152	0	1191	0	0	0	0	365	3352	8	3725	321	7	287	615	5531
08:00	9	297	0	306	0	0	0	0	115	824	2	941	79	3	97	179	1426
08:15	7	298	0	305	0	0	0	0	136	788	2	926	94	2	106	202	1433
08:30	7	292	0	299	0	0	0	0	135	681	3	819	69	7	86	162	1280
08:45	17	330	0	347	0	0	0	0	108	657	6	771	119	4	76	199	1317
Total	40	1217	0	1257	0	0	0	0	494	2950	13	3457	361	16	365	742	5456
Grand Total	79	2369	0	2448	0	0	0	0	859	6302	21	7182	682	23	652	1357	10987
Apprch %	3.2	96.8	0.0		0.0	0.0	0.0		12.0	87.7	0.3		50.3	1.7	48.0		
Total %	0.7	21.6	0.0	22.3	0.0	0.0	0.0	0.0	7.8	57.4	0.2	65.4	6.2	0.2	5.9	12.4	

	ALMADEN EXPWY Southbound				S.R. 85 SB ON RAMP Westbound				ALMADEN EXPWY Northbound				ALMADEN PLAZA Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	07:30																
Volume	34	1295	0	1329	0	0	0	0	453	3334	11	3798	358	10	371	739	5866
Percent	2.6	97.4	0.0		0.0	0.0	0.0		11.9	87.8	0.3		48.4	1.4	50.2		
High Int.	07:45				6:45:00 AM				07:45				08:15				07:45
Volume	13	375	0	388	0	0	0	0	136	869	4	969	94	4	106	202	1529
Peak Factor				0.856								0.980				0.915	0.959



99-083

MARKS TRAFFIC DATA SERVICE

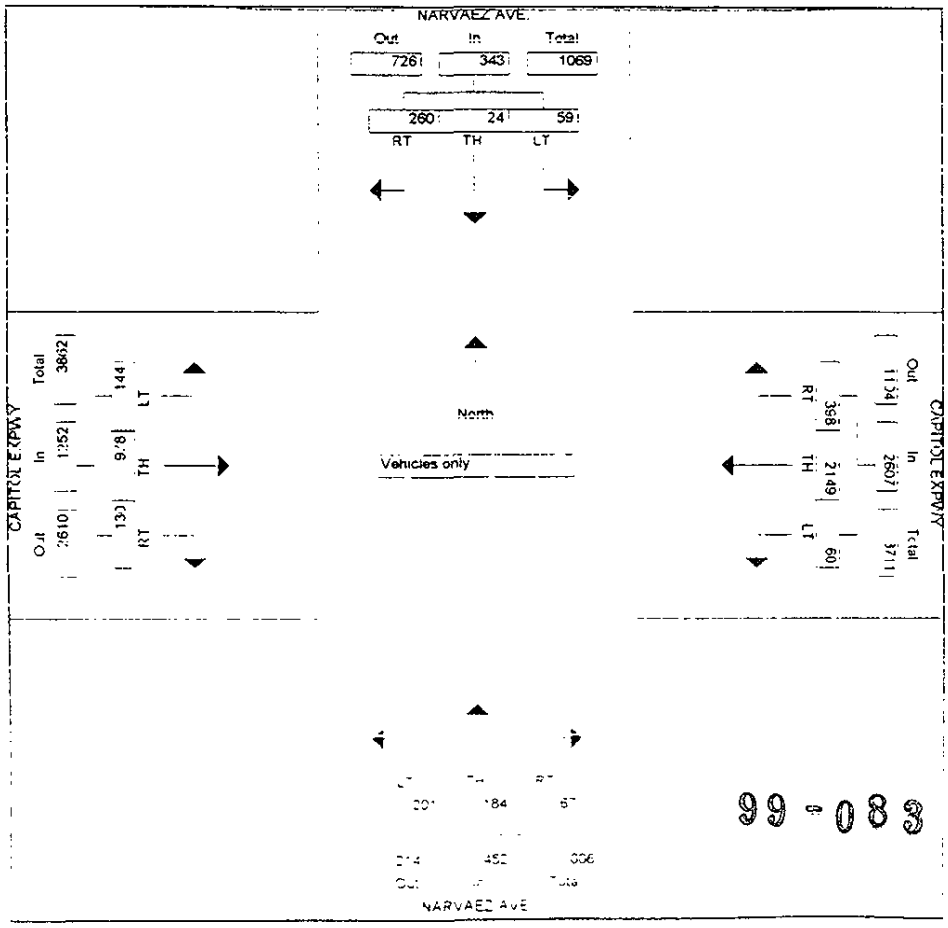
CITY OF SAN JOSE

File Name : narvaez_capitol-a
Site Code : 00000000
Start Date : 06/09/2000
Page : 1

Groups Printed: Vehicles only

	NARVAEZ AVE. Southbound				CAPITOL EXPWY Westbound				NARVAEZ AVE. Northbound				CAPITOL EXPWY Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App Total	Int Total
07:00	37	5	13	55	69	458	12	539	11	37	33	81	33	272	33	338	1013
07:15	44	2	11	57	68	436	8	512	8	51	46	105	42	278	42	362	1036
07:30	45	6	16	67	81	526	18	625	13	55	53	121	47	276	36	359	1172
07:45	36	4	14	54	93	541	15	649	17	46	58	121	39	268	41	348	1172
Total	162	17	54	233	311	1961	53	2325	49	189	190	428	161	1094	152	1407	4393
08:00	68	6	11	85	106	533	11	650	21	45	51	117	36	228	29	293	1145
08:15	111	8	18	137	118	549	16	683	16	38	39	93	8	206	38	252	1165
08:30	118	5	13	136	106	565	19	690	13	43	22	78	12	181	41	234	1138
08:45	103	13	29	145	86	533	12	631	9	37	19	65	13	187	58	258	1099
Total	400	32	71	503	416	2180	58	2654	59	163	131	353	69	802	166	1037	4547
Grand Total	562	49	125	736	727	4141	111	4979	108	352	321	781	230	1896	318	2444	8940
Approch %	76.4	6.7	17.0		14.6	83.2	2.2		13.8	45.1	41.1		9.4	77.6	13.0		
Total %	6.3	0.5	1.4	8.2	8.1	46.3	1.2	55.7	1.2	3.9	3.6	8.7	2.6	21.2	3.6	27.3	

	NARVAEZ AVE. Southbound				CAPITOL EXPWY Westbound				NARVAEZ AVE. Northbound				CAPITOL EXPWY Eastbound				
Start Time	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	07:30																
Volume	260	24	59	343	398	2149	60	2607	67	184	201	452	130	978	144	1252	4654
Percent	75.8	7.0	17.2		15.3	82.4	2.3		14.8	40.7	44.5		10.4	78.1	11.5		
High Int.	08:15				08:15				07:30				07:30				07:30
Volume	111	8	18	137	118	549	18	683	21	55	58	121	47	276	41	359	1172
Peak Factor				0.920				0.954				0.934				0.872	0.993



99-083

CITY OF SARATOGA

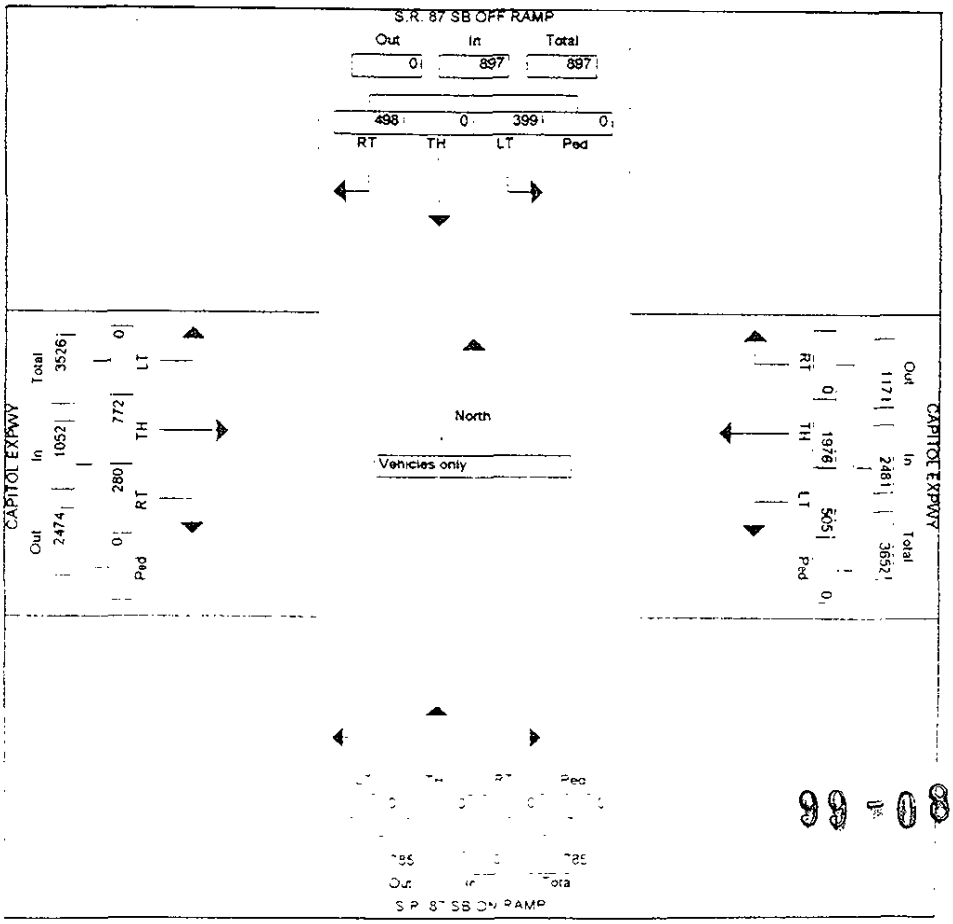
MARKS TRAFFIC DATA SERVICE

File Name : 87sb_capitol-a
Site Code : 00000000
Start Date : 05/11/2000
Page : 1

Groups Printed: Vehicles only

	S.R. 87 SB OFF RAMP Southbound				CAPITOL EXPWY Westbound				S.R. 87 SB ON RAMP Northbound				CAPITOL EXPWY Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App. Total	RT	TH	LT	App Total	Int. Total
07:00	58	0	98	156	0	375	106	481	0	0	0	0	32	78	0	110	747
07:15	157	0	98	255	0	475	118	593	0	0	0	0	54	176	0	230	1078
07:30	134	0	97	231	0	550	143	693	0	0	0	0	62	173	0	235	1159
07:45	131	0	100	231	0	490	128	618	0	0	0	0	88	228	0	316	1165
Total	480	0	393	873	0	1890	495	2385	0	0	0	0	236	655	0	891	4149
08:00	76	0	104	180	0	461	116	577	0	0	0	0	76	195	0	271	1028
08:15	99	0	96	195	0	404	126	530	0	0	0	0	66	192	0	258	983
08:30	100	0	93	193	0	394	115	509	0	0	0	0	65	203	0	268	970
08:45	88	0	91	179	0	349	120	469	0	0	0	0	47	231	0	278	926
Total	363	0	384	747	0	1608	477	2085	0	0	0	0	254	821	0	1075	3907
Grand Total	843	0	777	1620	0	3498	972	4470	0	0	0	0	490	1476	0	1966	8056
Apprch %	52.0	0.0	48.0		0.0	78.3	21.7		0.0	0.0	0.0		24.9	75.1	0.0		
Total %	10.5	0.0	9.6	20.1	0.0	43.4	12.1	55.5	0.0	0.0	0.0	0.0	6.1	18.3	0.0	24.4	

	S.R. 87 SB OFF RAMP Southbound				CAPITOL EXPWY Westbound				S.R. 87 SB ON RAMP Northbound				CAPITOL EXPWY Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App. Total	RT	TH	LT	App Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	07:15																
Volume	498	0	399	897	0	1976	505	2481	0	0	0	0	280	772	0	1052	4430
Percent	55.5	0.0	44.5		0.0	79.6	20.4		0.0	0.0	0.0		26.6	73.4	0.0		
High Int.	07:15				07:30				6:45:00 AM				07:45				07:45
Volume	157	0	104	255	0	550	143	693	0	0	0	0	88	228	0	316	1165
Peak Factor				0.879				0.895								0.832	0.951



99-083

MARKS TRAFFIC DATA SERVICE

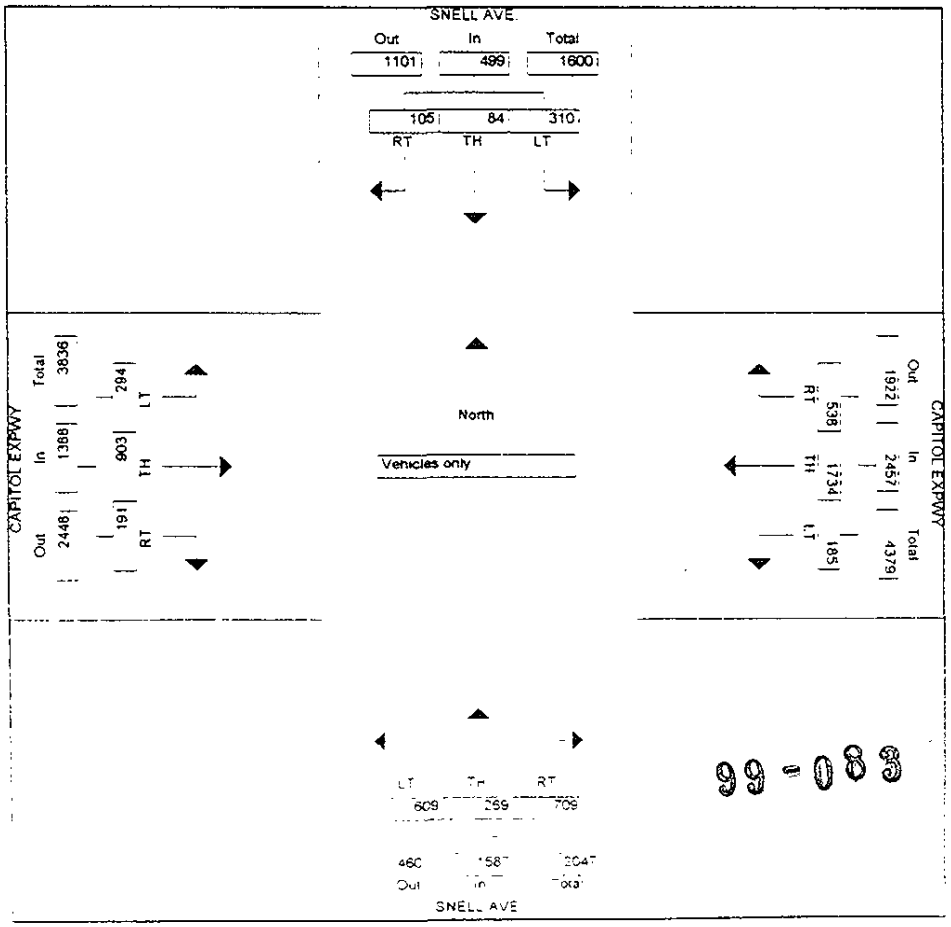
CITY OF SAN JOSE

File Name : snell_capitol-a
Site Code : 00000000
Start Date : 06/08/2000
Page : 1

Groups Printed: Vehicles only

	SNELL AVE. Southbound				CAPITOL EXPWY Westbound				SNELL AVE. Northbound				CAPITOL EXPWY Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App Total	RT	TH	LT	App. Total	Int. Total
07:00	21	14	64	99	144	324	43	511	160	39	118	317	42	179	46	267	1194
07:15	36	15	71	122	150	346	46	542	212	90	155	457	31	208	55	294	1415
07:30	22	22	86	130	130	454	37	621	232	85	158	475	30	251	68	349	1575
07:45	32	21	74	127	109	452	55	616	207	76	155	438	74	215	55	344	1525
Total	111	72	295	478	533	1576	181	2290	811	290	586	1687	177	853	224	1254	5709
08:00	24	25	79	128	148	428	50	626	154	50	134	338	48	207	57	312	1404
08:15	27	16	71	114	151	400	43	594	116	58	162	336	39	230	114	383	1427
08:30	26	23	79	128	162	375	28	565	113	48	107	268	37	195	92	324	1285
08:45	37	16	57	110	110	311	63	484	82	42	120	244	28	193	46	267	1105
Total	114	80	286	480	571	1514	184	2269	465	198	523	1186	152	825	309	1286	5221
Grand Total	225	152	581	958	1104	3090	365	4559	1276	488	1109	2873	329	1678	533	2540	10930
Apprch %	23.5	15.9	60.6		24.2	67.8	8.0		44.4	17.0	38.6		13.0	66.1	21.0		
Total %	2.1	1.4	5.3	8.8	10.1	28.3	3.3	41.7	11.7	4.5	10.1	26.3	3.0	15.4	4.9	23.2	

	SNELL AVE. Southbound				CAPITOL EXPWY. Westbound				SNELL AVE. Northbound				CAPITOL EXPWY Eastbound				
Start Time	RT	TH	LT	App Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	RT	TH	LT	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	07:30																
Volume	105	84	310	499	538	1734	185	2457	709	269	609	1587	191	903	294	1388	5931
Percent	21.0	16.8	62.1		21.9	70.6	7.5		44.7	17.0	38.4		13.8	65.1	21.2		
High Int.	07:30				08:00				07:30				08:15				07:30
Volume	32	25	86	130	151	454	55	626	232	85	162	475	74	251	114	383	1575
Peak Factor				0.960				0.981				0.835				0.906	0.941



99-083

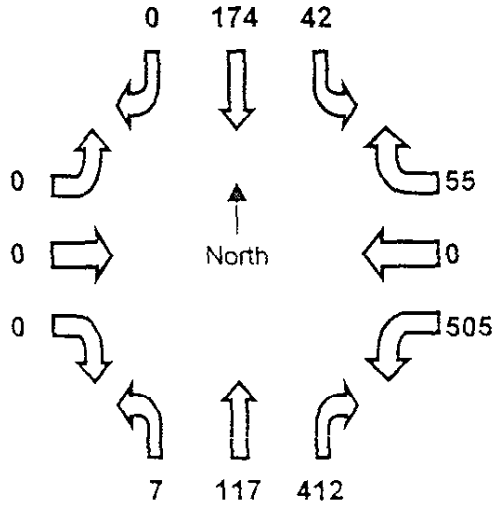
Project	COMMUNICATIONS HILL
Date Time - weather	6/01/00 - CLEAR
Name	D.COOMBS / E.SPARGUR
Intersection name	PEARL / HILLSDALE

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
700	0	0	0	0	0	0	0	0	0	0	0	0
715	0	34	9	13	0	81	68	33	1	0	0	0
730	0	73	15	20	0	168	171	64	2	0	0	0
745	0	123	27	37	0	349	287	85	3	0	0	0
800	0	157	43	58	0	464	385	121	6	0	0	0
815	0	208	51	68	0	586	480	150	8	0	0	0
830	0	251	67	76	0	673	568	170	10	0	0	0
845	0	297	74	90	0	718	623	190	12	0	0	0
900	0	338	92	105	0	796	674	210	14	0	0	0

Totals

700	0	157	43	58	0	464	385	121	6	0	0	0	1234
715	0	174	42	55	0	505	412	117	7	0	0	0	1312
730	0	178	52	56	0	505	397	106	8	0	0	0	1302
745	0	174	47	53	0	369	336	105	9	0	0	0	1093
800	0	181	49	47	0	332	289	89	8	0	0	0	995
Peak	**0**	**174**	**42**	**55**	**0**	**505**	**412**	**117**	**7**	**0**	**0**	**0**	**1312**

AM Peak Hour Volumes



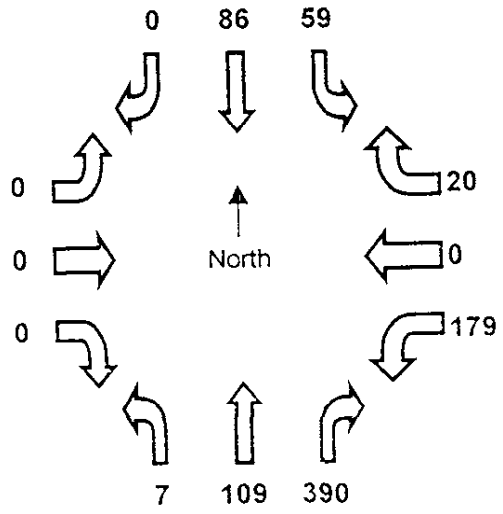
99-083

Project	COMMUNICATIONS HILL
Date Time - weather	6/01/00 - CLEAR
Name	D.COOMBS / E.SPARGUR
Intersection name	PEARL / HILLSDALE

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
400	0	0	0	0	0	0	0	0	0	0	0	0
415	0	26	12	11	0	35	75	29	2	0	0	0
430	0	64	23	20	0	65	157	43	3	0	0	0
445	0	92	43	31	0	106	207	65	6	0	0	0
500	0	110	54	37	0	158	283	82	7	0	0	0
515	0	133	75	41	0	198	395	105	8	0	0	0
530	0	153	87	45	0	238	466	127	10	0	0	0
545	0	176	106	49	0	297	572	151	14	0	0	0
600	0	196	113	57	0	337	673	191	14	0	0	0

Totals													
400	0	110	54	37	0	158	283	82	7	0	0	0	731
415	0	107	63	30	0	163	320	76	6	0	0	0	765
430	0	89	64	25	0	173	309	84	7	0	0	0	751
445	0	84	63	18	0	191	365	86	8	0	0	0	815
500	0	86	59	20	0	179	390	109	7	0	0	0	850
Peak	**0**	**86**	**59**	**20**	**0**	**179**	**390**	**109**	**7**	**0**	**0**	**0**	**850**

PM Peak Hour Volumes



99-083

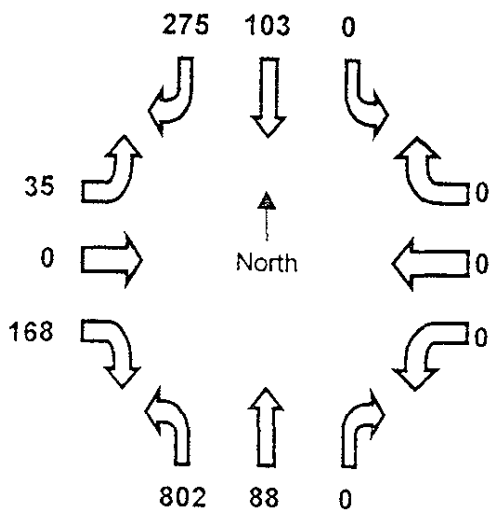
Project	COMMUNICATIONS HILL
Date Time - weather	5/31/00 - CLEAR
Name	D.COOMBS / D.HOLMES
Intersection name	NARVAEZ / 87 RAMPS

Start Time	North Right	North Thru	North Left	East Right	East Thru	East Left	South Right	South Thru	South Left	West Right	West Thru	West Left
700	0	0	0	0	0	0	0	0	0	0	0	0
715	79	24	0	0	0	0	0	29	199	50	0	12
730	144	53	0	0	0	0	0	51	415	88	0	23
745	216	84	0	0	0	0	0	66	613	122	0	29
800	275	103	0	0	0	0	0	88	802	168	0	35
815	337	121	0	0	0	0	0	106	987	214	0	43
830	390	149	0	0	0	0	0	118	1191	260	0	49
845	452	168	0	0	0	0	0	140	1377	310	0	63
900	500	197	0	0	0	0	0	160	1581	370	0	74

Totals

700	275	103	0	0	0	0	0	88	802	168	0	35	1471
715	258	97	0	0	0	0	0	77	788	164	0	31	1415
730	246	96	0	0	0	0	0	67	776	172	0	26	1383
745	236	84	0	0	0	0	0	74	764	188	0	34	1380
800	225	94	0	0	0	0	0	72	779	202	0	39	1411
Peak	**275**	**103**	**0**	**0**	**0**	**0**	**0**	**88**	**802**	**168**	**0**	**35**	**1471**

AM Peak Hour Volumes



99-083

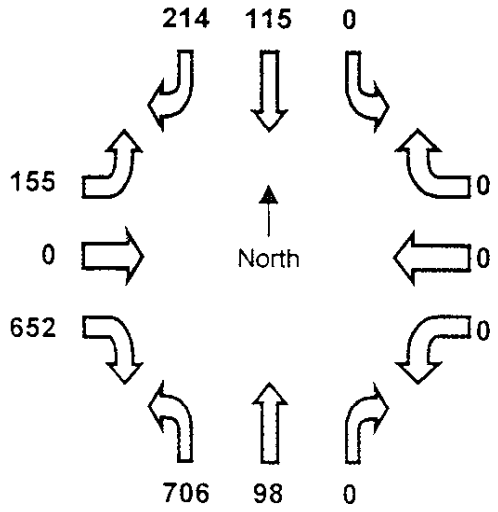
Project	COMMUNICATIONS HILL
Date Time - weather	5/31/00 - CLEAR
Name	D.COOMBS / D.HOLMES
Intersection name	NARVAEZ / 87 RAMPS

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
400	0	0	0	0	0	0	0	0	0	0	0	0
415	75	24	0	0	0	0	0	36	184	141	0	28
430	130	47	0	0	0	0	0	67	346	293	0	60
445	188	61	0	0	0	0	0	90	496	432	0	91
500	240	86	0	0	0	0	0	117	663	583	0	124
515	303	119	0	0	0	0	0	138	845	722	0	168
530	362	148	0	0	0	0	0	166	1019	899	0	209
545	411	178	0	0	0	0	0	189	1193	1073	0	239
600	454	201	0	0	0	0	0	215	1369	1235	0	279

Totals

400	240	86	0	0	0	0	0	117	663	583	0	124	1813
415	228	95	0	0	0	0	0	102	661	581	0	140	1807
430	232	101	0	0	0	0	0	99	673	606	0	149	1860
445	223	117	0	0	0	0	0	99	697	641	0	148	1925
500	214	115	0	0	0	0	0	98	706	652	0	155	1940
Peak	**214**	**115**	**0**	**0**	**0**	**0**	**0**	**98**	**706**	**652**	**0**	**155**	**1940**

PM Peak Hour Volumes



99-083

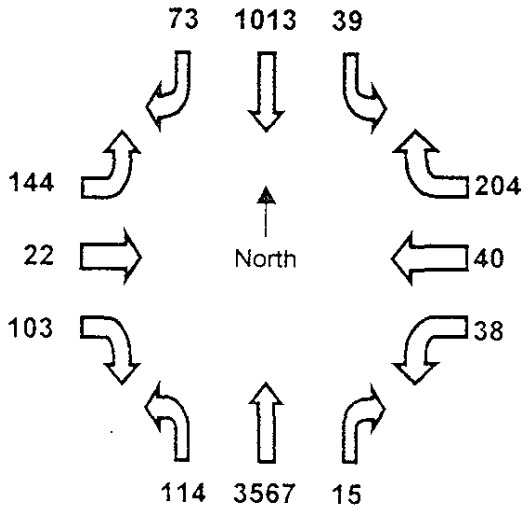
Project	COMMUNICATIONS HILL
Date Time - weather	5/23/00 - OVERCAST
Name	D.COOMBS / D.HOLMES
Intersection name	ALMADEN / FOXWORTHY

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
700	0	0	0	0	0	0	0	0	0	0	0	0
715	12	195	11	37	5	3	5	723	16	19	6	31
730	28	453	22	86	15	15	10	1617	40	45	13	62
745	49	708	34	136	25	22	17	2545	63	66	17	102
800	69	994	44	185	35	36	19	3466	93	91	24	138
815	85	1208	50	241	45	41	20	4290	130	122	28	175
830	104	1475	61	285	48	48	21	5105	155	149	31	211
845	119	1738	73	325	56	61	23	5770	181	170	40	242
900	134	2004	93	364	66	71	25	6339	203	192	51	277

Totals

700	69	994	44	185	35	36	19	3466	93	91	24	138	5194
715	73	1013	39	204	40	38	15	3567	114	103	22	144	5372
730	76	1022	39	199	33	33	11	3488	115	104	18	149	5287
745	70	1030	39	189	31	39	6	3225	118	104	23	140	5014
800	65	1010	49	179	31	35	6	2873	110	101	27	139	4625
Peak	**73**	**1013**	**39**	**204**	**40**	**38**	**15**	**3567**	**114**	**103**	**22**	**144**	**5372**

AM Peak Hour Volumes



99-083

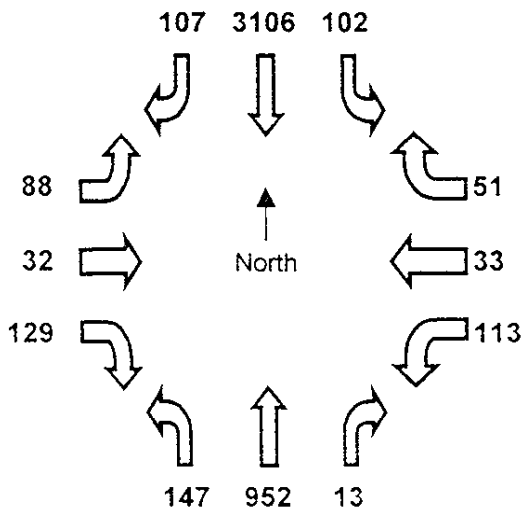
Project	COMMUNICATIONS HILL
Date Time - weather	5/23/00 - OVERCAST
Name	D.COOMBS / D.HOLMES
Intersection name	ALMADEN / FOXWORTHY

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
400	0	0	0	0	0	0	0	0	0	0	0	0
415	24	481	18	14	7	19	3	219	27	26	6	25
430	45	1014	38	21	9	34	14	448	54	39	14	44
445	80	1595	58	38	23	59	20	699	96	72	20	57
500	102	2208	79	58	36	72	24	917	135	103	24	79
515	123	2938	108	71	42	92	29	1135	176	132	30	100
530	149	3706	129	86	46	128	33	1385	212	161	42	134
545	181	4525	166	99	61	166	35	1623	245	193	49	149
600	209	5314	181	109	69	185	37	1869	282	232	56	167

Totals

400	102	2208	79	58	36	72	24	917	135	103	24	79	3837
415	99	2457	90	57	35	73	26	916	149	106	24	75	4107
430	104	2692	91	65	37	94	19	937	158	122	28	90	4437
445	101	2930	108	61	38	107	15	924	149	121	29	92	4675
500	107	3106	102	51	33	113	13	952	147	129	32	88	4873
Peak	**107**	**3106**	**102**	**51**	**33**	**113**	**13**	**952**	**147**	**129**	**32**	**88**	**4873**

PM Peak Hour Volumes



99-083

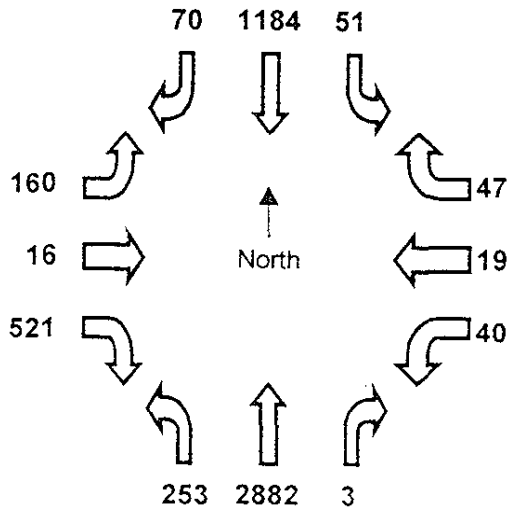
Project	COMMUNICATIONS HILL
Date Time - weather	5/24/00 - OVERCAST
Name	D.COOMBS / D.HOLMES
Intersection name	ALMADEN / CHERRY

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
700	0	0	0	0	0	0	0	0	0	0	0	0
715	5	261	12	13	3	7	0	641	52	98	2	26
730	19	533	26	30	5	13	0	1425	109	220	8	75
745	36	837	38	46	9	20	1	2142	183	360	13	117
800	60	1122	47	51	14	38	3	2824	248	479	17	157
815	75	1445	63	60	22	47	3	3523	305	619	18	186
830	87	1764	77	64	23	59	5	4194	358	731	19	210
845	96	2075	100	71	24	76	7	4746	407	842	23	226
900	111	2414	118	84	30	89	8	5256	461	939	25	256

Totals

700	60	1122	47	51	14	38	3	2824	248	479	17	157	5060
715	70	1184	51	47	19	40	3	2882	253	521	16	160	5246
730	68	1231	51	34	18	46	5	2769	249	511	11	135	5128
745	60	1238	62	25	15	56	6	2604	224	482	10	109	4891
800	51	1292	71	33	16	51	5	2432	213	460	8	99	4731
Peak	**70**	**1184**	**51**	**47**	**19**	**40**	**3**	**2882**	**253**	**521**	**16**	**160**	**5246**

AM Peak Hour Volumes



99-083

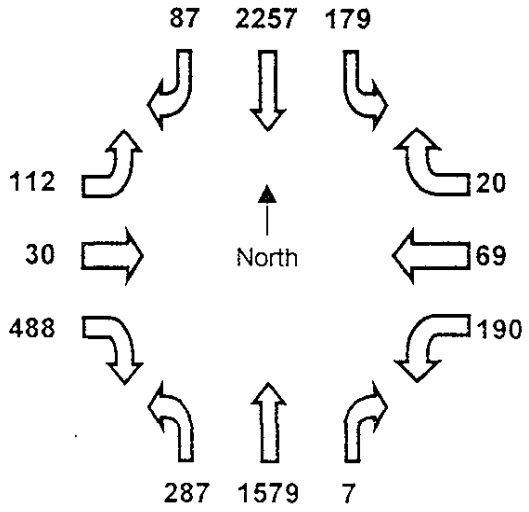
Project	COMMUNICATIONS HILL
Date Time - weather	5/24/00 - CLEAR
Name	D.COOMBS / D.HOLMES
Intersection name	ALMADEN / CHERRY

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
400	0	0	0	0	0	0	0	0	0	0	0	0
415	38	416	24	8	9	41	0	367	79	125	7	21
430	56	912	66	10	26	81	4	780	146	228	15	44
445	80	1346	116	14	34	134	5	1180	222	341	23	63
500	95	1846	176	19	50	172	6	1578	295	449	26	92
515	119	2426	221	28	63	218	8	1981	368	569	30	118
530	142	2961	271	29	80	274	8	2373	437	682	37	142
545	160	3565	317	33	95	320	11	2750	511	822	44	172
600	182	4103	355	39	119	362	13	3157	582	937	56	204

Totals

400	95	1846	176	19	50	172	6	1578	295	449	26	92	4804
415	81	2010	197	20	54	177	8	1614	289	444	23	97	5014
430	86	2049	205	19	54	193	4	1593	291	454	22	98	5068
445	80	2219	201	19	61	186	6	1570	289	481	21	109	5242
500	87	2257	179	20	69	190	7	1579	287	488	30	112	5305
Peak	**87**	**2257**	**179**	**20**	**69**	**190**	**7**	**1579**	**287**	**488**	**30**	**112**	**5305**

PM Peak Hour Volumes

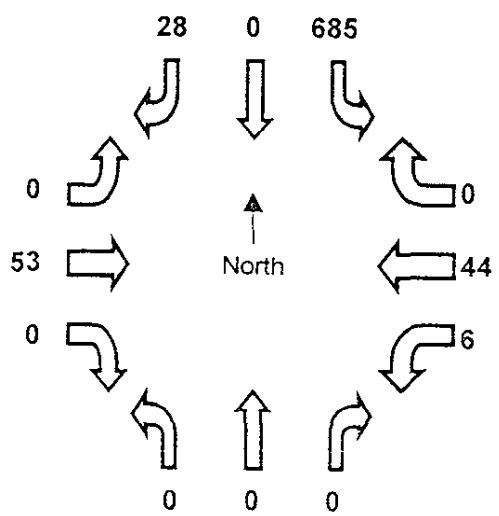


99-083

Project	COMMUNICATION HILL
Date Time - weather	5/25/00 - CLEAR
Name	D.HOLMES / D.COOMBS
Intersection name	SB85 OFFRAMP/ALMADEN PLAZA

Start Time	North Right	North Thru	North Left	East Right	East Thru	East Left	South Right	South Thru	South Left	West Right	West Thru	West Left	
700	0	0	0	0	0	0	0	0	0	0	0	0	
715	3	0	134	0	8	1	0	0	0	0	9	0	
730	6	0	290	0	18	3	0	0	0	0	20	0	
745	14	0	437	0	32	4	0	0	0	0	35	0	
800	21	0	622	0	46	5	0	0	0	0	47	0	
815	29	0	796	0	58	9	0	0	0	0	56	0	
830	33	0	959	0	67	11	0	0	0	0	71	0	
845	40	0	1120	0	77	11	0	0	0	0	87	0	
900	49	0	1307	0	90	11	0	0	0	0	100	0	
Totals													
700	21	0	622	0	46	5	0	0	0	0	47	0	741
715	26	0	662	0	50	8	0	0	0	0	47	0	793
730	27	0	669	0	49	8	0	0	0	0	51	0	804
745	26	0	683	0	45	7	0	0	0	0	52	0	813
800	28	0	685	0	44	6	0	0	0	0	53	0	816
Peak	**28**	**0**	**685**	**0**	**44**	**6**	**0**	**0**	**0**	**0**	**53**	**0**	**816**

AM Peak Hour Volumes



99-083

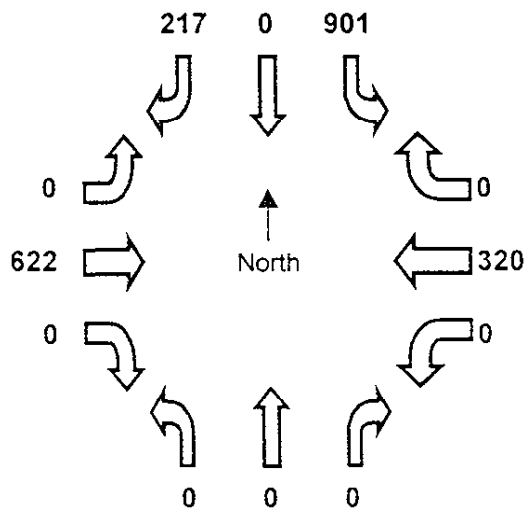
Project	COMMUNICATIONS HILL
Date Time - weather	5/25/00 - CLEAR
Name	D.HOLMES / D.COOMBS
Intersection name	SB85 OFFRAMP / ALMADEN PLAZA

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
400	0	0	0	0	0	0	0	0	0	0	0	0
415	48	0	199	0	76	0	0	0	0	0	156	0
430	97	0	395	0	176	0	0	0	0	0	297	0
445	153	0	602	0	239	0	0	0	0	0	458	0
500	205	0	853	0	321	0	0	0	0	0	615	0
515	270	0	1049	0	400	0	0	0	0	0	777	0
530	317	0	1272	0	472	0	0	0	0	0	936	0
545	370	0	1503	0	559	0	0	0	0	0	1080	0
600	427	0	1742	0	646	0	0	0	0	0	1211	0

Totals

400	205	0	853	0	321	0	0	0	0	0	615	0	1994
415	222	0	850	0	324	0	0	0	0	0	621	0	2017
430	220	0	877	0	296	0	0	0	0	0	639	0	2032
445	217	0	901	0	320	0	0	0	0	0	622	0	2060
500	222	0	889	0	325	0	0	0	0	0	596	0	2032
Peak	**217**	**0**	**901**	**0**	**320**	**0**	**0**	**0**	**0**	**0**	**622**	**0**	**2060**

PM Peak Hour Volumes



99 - 088

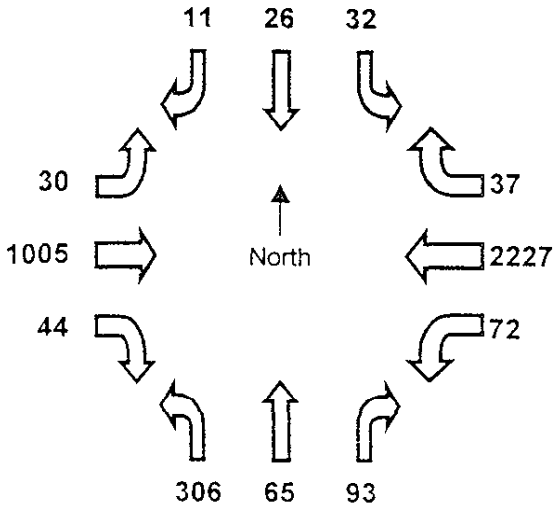
Project	COMMUNICATION HILL
Date Time - weather	5/23/00 - CLEAR
Name	E.SPARGUR/N.HALEY
Intersection name	VISTA PARK / CAPITOL

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
700	0	0	0	0	0	0	0	0	0	0	0	0
715	3	8	7	5	448	23	15	7	85	9	200	3
730	4	15	12	10	1098	47	39	19	166	20	477	12
745	9	18	20	15	1604	68	56	36	246	29	682	19
800	10	26	31	24	2148	84	83	51	314	42	936	27
815	14	34	39	42	2675	95	108	72	391	53	1205	33
830	15	41	42	60	3090	108	125	82	446	66	1403	39
845	16	46	49	73	3554	133	137	92	502	85	1633	44
900	17	50	56	85	3910	143	147	101	551	101	1854	54

Totals

700	10	26	31	24	2148	84	83	51	314	42	936	27	3776
715	11	26	32	37	2227	72	93	65	306	44	1005	30	3948
730	11	26	30	50	1992	61	86	63	280	46	926	27	3598
745	7	28	29	58	1950	65	81	56	256	56	951	25	3562
800	7	24	25	61	1762	59	64	50	237	59	918	27	3293
Peak	**11**	**26**	**32**	**37**	**2227**	**72**	**93**	**65**	**306**	**44**	**1005**	**30**	**3948**

AM Peak Hour Volumes



99-083

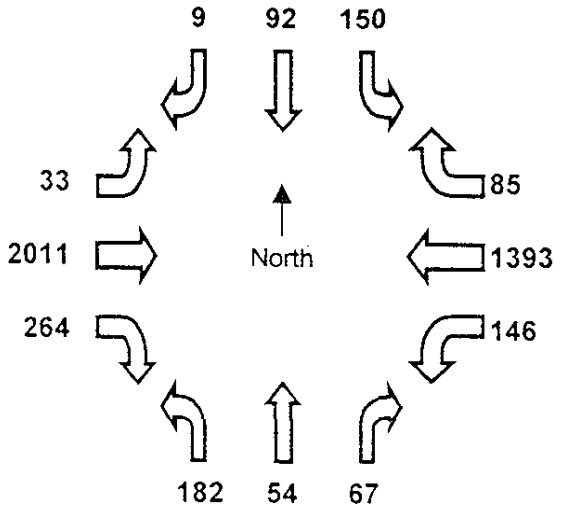
Project	COMMUNICATIONS HILL
Date Time - weather	5/23/00 - CLEAR
Name	E.SPARGUR / N.HALEY
Intersection name	VISTA PARK / CAPITOL

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
400	0	0	0	0	0	0	0	0	0	0	0	0
415	5	19	18	23	365	29	22	12	34	56	478	11
430	9	29	36	33	627	60	25	22	66	98	801	12
445	13	39	51	51	929	91	40	33	110	141	1225	21
500	16	59	85	63	1299	124	57	49	150	191	1673	31
515	18	83	118	92	1652	174	77	58	201	239	2154	39
530	21	100	170	110	2045	210	90	73	244	301	2669	48
545	24	124	191	122	2392	233	108	87	296	372	3180	55
600	25	151	235	148	2692	270	124	103	332	455	3684	64

Totals

400	16	59	85	63	1299	124	57	49	150	191	1673	31	3797
415	13	64	100	69	1287	145	55	46	167	183	1676	28	3833
430	12	71	134	77	1418	150	65	51	178	203	1868	36	4263
445	11	85	140	71	1463	142	68	54	186	231	1955	34	4440
500	9	92	150	85	1393	146	67	54	182	264	2011	33	4486
Peak	**9**	**92**	**150**	**85**	**1393**	**146**	**67**	**54**	**182**	**264**	**2011**	**33**	**4486**

PM Peak Hour Volumes



99-083

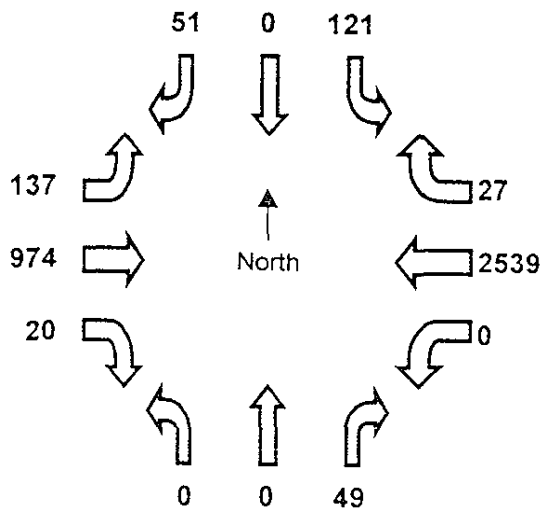
Project	COMMUNICATION HILL
Date Time - weather	5/18/00 - clear
Name	D.HOLMES / D.COOMBS
Intersection name	COPPERFIELD / CAPITOL

Start Time	North			East			South			West		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
700	0	0	0	0	0	0	0	0	0	0	0	0
715	11	0	28	5	561	0	10	0	0	8	221	35
730	27	0	53	7	1178	0	21	0	0	11	465	60
745	43	0	90	16	1853	0	33	0	0	18	701	84
800	54	0	121	24	2456	0	49	0	0	22	952	129
815	62	0	149	32	3100	0	59	0	0	28	1195	172
830	86	0	170	41	3660	0	67	0	0	34	1449	223
845	113	0	192	51	4204	0	77	0	0	38	1684	278
900	137	0	223	58	4697	0	85	0	0	44	1909	325

Totals

700	54	0	121	24	2456	0	49	0	0	22	952	129	3807
715	51	0	121	27	2539	0	49	0	0	20	974	137	3918
730	59	0	117	34	2482	0	46	0	0	23	984	163	3908
745	70	0	102	35	2351	0	44	0	0	20	983	194	3799
800	83	0	102	34	2241	0	36	0	0	22	957	196	3671
Peak	**51**	**0**	**121**	**27**	**2539**	**0**	**49**	**0**	**0**	**20**	**974**	**137**	**3918**

AM Peak Hour Volumes



99-083

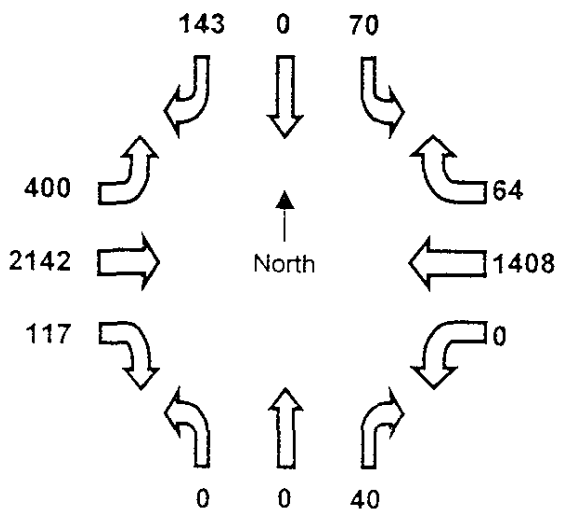
Project	COMMUNICATIONS HILL
Date Time - weather	5/18/00 - CLEAR
Name	D.HOLMES / D.COOMBS
Intersection name	COPPERFIELD / CAPITOL

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
400	0	0	0	0	0	0	0	0	0	0	0	0
415	43	0	13	10	324	0	9	0	0	21	406	88
430	81	0	31	18	620	0	15	0	0	41	839	168
445	114	0	48	32	1004	0	25	0	0	68	1335	259
500	145	0	65	42	1305	0	34	0	0	93	1802	367
515	187	0	89	59	1677	0	42	0	0	124	2289	470
530	219	0	105	76	2011	0	52	0	0	150	2839	571
545	256	0	122	88	2380	0	64	0	0	178	3418	655
600	288	0	135	106	2713	0	74	0	0	210	3944	767

Totals

400	145	0	65	42	1305	0	34	0	0	93	1802	367	3853
415	144	0	76	49	1353	0	33	0	0	103	1883	382	4023
430	138	0	74	58	1391	0	37	0	0	109	2000	403	4210
445	142	0	74	56	1376	0	39	0	0	110	2083	396	4276
500	143	0	70	64	1408	0	40	0	0	117	2142	400	4384
Peak	**143**	**0**	**70**	**64**	**1408**	**0**	**40**	**0**	**0**	**117**	**2142**	**400**	**4384**

PM Peak Hour Volumes

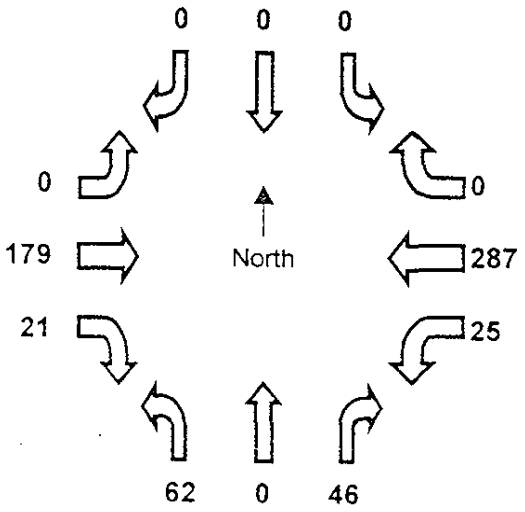


99-083

Project	COMMUNICATIONS HILL
Date Time - weather	6/20/00 - CLEAR
Name	Earl Spargur
Intersection name	VISTA PARK / HILLSDALE

Start Time	North Right	North Thru	North Left	East Right	East Thru	East Left	South Right	South Thru	South Left	West Right	West Thru	West Left	
700	0	0	0	0	0	0	0	0	0	0	0	0	
715	0	0	0	0	43	6	13	0	17	3	49	0	
730	0	0	0	0	111	9	22	0	24	7	88	0	
745	0	0	0	0	183	14	33	0	32	10	131	0	
800	0	0	0	0	263	19	48	0	46	17	189	0	
815	0	0	0	0	346	30	55	0	64	22	230	0	
830	0	0	0	0	398	34	68	0	86	28	267	0	
845	0	0	0	0	447	41	77	0	91	32	312	0	
900	0	0	0	0	495	48	84	0	99	42	344	0	
Totals													
700	0	0	0	0	263	19	48	0	46	17	189	0	582
715	0	0	0	0	303	24	42	0	47	19	181	0	616
730	0	0	0	0	287	25	46	0	62	21	179	0	620
745	0	0	0	0	264	27	44	0	59	22	181	0	597
800	0	0	0	0	232	29	36	0	53	25	155	0	530
Peak	**0**	**0**	**0**	**0**	**287**	**25**	**46**	**0**	**62**	**21**	**179**	**0**	**620**

AM Peak Hour Volumes



99-083

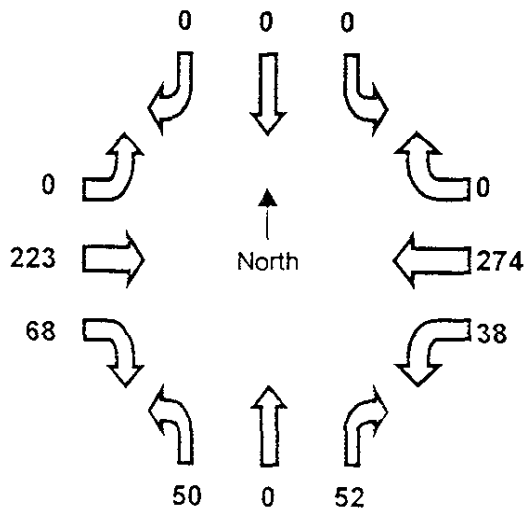
Project	COMMUNICATIONS HILL
Date Time - weather	6/20/00 - CLEAR
Name	Earl Spargur
Intersection name	VISTA PARK / HILLSDALE

Start	North			East			South			West		
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
400	0	0	0	0	0	0	0	0	0	0	0	0
415	0	0	0	0	53	14	16	0	20	15	64	0
430	0	0	0	0	100	16	30	0	29	28	102	0
445	0	0	0	0	150	21	42	0	43	51	157	0
500	0	0	0	0	212	32	54	0	56	73	200	0
515	0	0	0	0	287	44	70	0	64	84	268	0
530	0	0	0	0	345	53	80	0	77	98	310	0
545	0	0	0	0	424	59	94	0	93	119	380	0
600	0	0	0	0	479	63	109	0	106	137	438	0

Totals

400	0	0	0	0	212	32	54	0	56	73	200	0	627
415	0	0	0	0	234	30	54	0	44	69	204	0	635
430	0	0	0	0	245	37	50	0	48	70	208	0	658
445	0	0	0	0	274	38	52	0	50	68	223	0	705
500	0	0	0	0	267	31	55	0	50	64	238	0	705
Peak	**0**	**0**	**0**	**0**	**274**	**38**	**52**	**0**	**50**	**68**	**223**	**0**	**705**

PM Peak Hour Volumes



99-083

Appendix B

Approved Trips Inventory

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/MONTEREY (N)
Traffix Node Number: 3091

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
H99-06-049	0	44	0	4	12	0	0	0	0	0	0	15
NORTH COYOTE	0	73	13	0	293	0	0	0	0	200	0	0
PD96-01-002	0	18	0	10	0	0	0	0	0	0	0	0
PDC85-10-094	0	18	0	8	19	0	0	0	0	0	0	6
PDC89-04-051	0	3	21	0	4	0	0	0	0	11	0	0
PDC91-08-067	0	7	1	4	0	0	0	0	0	0	0	0
PDC92-03-024	0	12	0	5	17	0	0	0	0	0	0	0
TOTAL:	**0**	**175**	**35**	**31**	**345**	**0**	**0**	**0**	**0**	**211**	**0**	**21**

	LEFT	THRU	RIGHT
NORTH	31	345	0
EAST	211	0	21
SOUTH	0	175	35
WEST	0	0	0

PM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/MONTEREY (N)
Traffix Node Number: 3091

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
H97-08-068	0	0	0	0	3	0	0	0	0	8	0	3
H99-06-049	0	13	0	14	42	0	0	0	0	0	0	4
NORTH COYOTE	0	293	50	0	73	0	0	0	0	50	0	0
PD96-01-002	0	10	0	18	0	0	0	0	0	0	0	0
PDC85-10-094	0	19	0	6	18	0	0	0	0	0	0	8
PDC89-04-051	0	2	12	0	2	0	0	0	0	9	0	0
PDC91-08-067	0	4	2	8	0	0	0	0	0	0	0	0
PDC92-03-024	0	22	0	3	9	0	0	0	0	0	0	0
TOTAL:	**0**	**363**	**64**	**49**	**147**	**0**	**0**	**0**	**0**	**67**	**0**	**15**

	LEFT	THRU	RIGHT
NORTH	49	147	0
EAST	67	0	15
SOUTH	0	363	64
WEST	0	0	0

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/MONTEREY (S)
Traffix Node Number: 3092

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
H99-06-049	0	29	0	4	8	0	0	0	0	0	0	15
NORTH COYOTE	0	86	50	0	493	0	0	0	0	50	0	0
PD96-01-002	0	0	0	0	0	0	0	0	0	0	0	18
PDC85-10-094	0	11	0	7	12	0	0	0	0	0	0	7
PDC89-04-051	0	24	9	0	15	0	0	0	0	33	0	0
PDC91-08-067	0	1	0	0	0	0	0	0	0	2	0	7
PDC92-03-024	0	9	0	0	17	0	0	0	0	0	0	3
TOTAL:	**0**	**160**	**59**	**11**	**545**	**0**	**0**	**0**	**0**	**85**	**0**	**50**

	LEFT	THRU	RIGHT
NORTH	11	545	0
EAST	85	0	50
SOUTH	0	160	59
WEST	0	0	0

PM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/MONTEREY (S)
Traffix Node Number: 3092

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
H97-08-068	0	0	8	3	8	0	0	0	0	0	0	0
H99-06-049	0	8	0	14	28	0	0	0	0	0	0	4
NORTH COYOTE	0	343	200	0	123	0	0	0	0	13	0	0
PD96-01-002	0	0	0	0	0	0	0	0	0	0	0	10
PDC85-10-094	0	12	0	7	11	0	0	0	0	0	0	7
PDC89-04-051	0	14	12	0	11	0	0	0	0	6	0	0
PDC91-08-067	0	0	0	0	0	0	0	0	0	1	0	4
PDC92-03-024	0	17	0	0	9	0	0	0	0	0	0	5
TOTAL:	**0**	**394**	**220**	**24**	**190**	**0**	**0**	**0**	**0**	**20**	**0**	**30**

	LEFT	THRU	RIGHT
NORTH	24	190	0
EAST	20	0	30
SOUTH	0	394	220
WEST	0	0	0

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/PEARL
Traffix Node Number: 3120

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDA94-02-038	0	0	5	0	0	0	0	5	0	5	4	0
PDC91-08-067	0	0	1	0	0	0	0	5	0	1	9	0
PDC91-10-077	0	5	0	9	7	11	8	0	0	0	0	13
PDC96-04-015	0	0	14	3	0	0	0	30	0	12	28	2
PDC97-02-014	0	0	0	26	7	22	0	0	0	0	0	0
PDC97-04-028	0	1	0	5	3	13	6	0	0	0	0	8
PDC97-09-067	0	0	4	0	0	0	0	5	0	2	8	0
TOTAL:	**0**	**6**	**24**	**43**	**17**	**46**	**14**	**45**	**0**	**20**	**49**	**23**

	LEFT	THRU	RIGHT
NORTH	43	17	46
EAST	20	49	23
SOUTH	0	6	24
WEST	14	45	0

PM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/PEARL
Traffix Node Number: 3120

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDA94-02-038	0	0	3	0	0	0	0	3	0	3	3	0
PDC91-08-067	0	0	3	0	0	0	0	10	0	3	6	0
PDC91-10-077	0	7	0	7	5	8	11	0	0	0	0	40
PDC96-04-015	0	0	14	3	0	0	0	31	0	14	34	3
PDC97-02-014	0	7	0	0	0	0	14	0	0	0	0	55
PDC97-04-028	0	3	0	2	1	6	13	0	0	0	0	16
PDC97-09-067	0	0	5	0	0	0	0	13	0	6	9	0
TOTAL:	**0**	**17**	**25**	**12**	**6**	**14**	**38**	**57**	**0**	**26**	**52**	**114**

	LEFT	THRU	RIGHT
NORTH	12	6	14
EAST	26	52	114
SOUTH	0	17	25
WEST	38	57	0

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: 87/NARVAEZ
Traffix Node Number: 3208

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	55	0	0	0	0	0	0	0	8	0	0	0
PDA94-02-038	11	0	0	0	0	0	0	0	0	0	0	0
PDC91-08-067	12	0	0	0	0	7	3	0	2	0	0	0
PDC91-10-077	0	3	0	0	8	32	4	0	0	0	0	0
PDC96-04-015	19	0	0	0	0	0	0	0	20	0	0	0
PDC97-02-014	0	0	0	0	0	45	0	0	0	0	0	0
PDC97-04-028	0	2	0	0	3	16	2	0	0	0	0	0
PDC97-09-067	7	0	0	0	0	0	0	0	3	0	0	0
TOTAL:	**104**	**5**	**0**	**0**	**11**	**100**	**9**	**0**	**33**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	0	11	100
EAST	0	0	0
SOUTH	104	5	0
WEST	9	0	33

PM APPROVED TRIPS

06/13/2000

Intersection of: 87/NARVAEZ
Traffix Node Number: 3208

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	29	0	0	0	0	0	0	0	14	0	0	0
PDA94-02-038	0	0	0	0	0	0	0	0	4	0	0	0
PDC91-08-067	6	0	0	0	0	4	5	0	4	0	0	0
PDC91-10-077	0	0	0	0	0	13	9	0	0	0	0	0
PDC96-04-015	22	0	0	0	0	0	0	0	21	0	0	0
PDC97-02-014	0	0	0	0	0	0	14	0	0	0	0	0
PDC97-04-028	0	4	0	0	2	8	5	0	0	0	0	0
PDC97-09-067	7	0	0	0	0	0	0	0	6	0	0	0
TOTAL:	**64**	**4**	**0**	**0**	**2**	**25**	**33**	**0**	**49**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	0	2	25
EAST	0	0	0
SOUTH	64	4	0
WEST	33	0	49

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: HILLSDALE/PEARL
Traffix Node Number: 3587

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC91-08-067	0	0	0	0	0	0	0	1	0	0	2	0
PDC97-04-028	0	0	15	0	0	0	0	4	0	21	8	0
TOTAL:	**0**	**0**	**15**	**0**	**0**	**0**	**0**	**5**	**0**	**21**	**10**	**0**

PDC97-02-014 (RUBINO) → SEE DETAIL BELOW
40%

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	21	10	0
SOUTH	0	0	15
WEST	0	5	0

PM APPROVED TRIPS

06/13/2000

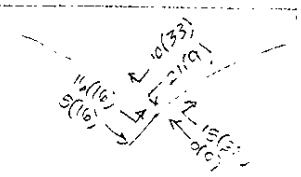
Intersection of: HILLSDALE/PEARL
Traffix Node Number: 3587

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC91-08-067	0	0	0	0	0	0	0	3	0	0	2	0
PDC97-04-028	0	0	32	0	0	0	0	8	0	9	4	0
PDC99-10-081	0	0	0	0	0	~~21~~	16	5	0	0	6^{+21}	0
TOTAL:	**0**	**0**	**32**	**0**	**0**	**~~21~~ 210**	**16**	**16**	**0**	**9**	**~~12~~ 33**	**0**

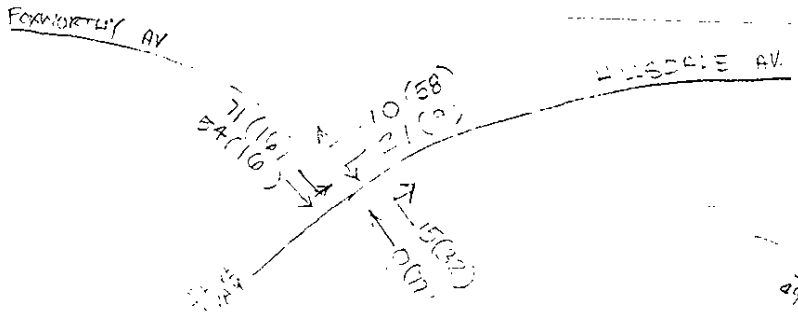
PDC97-02-014 (RUBINO) → SEE DETAIL BELOW
40%

	LEFT	THRU	RIGHT
NORTH	0	0	21
EAST	9	12	0
SOUTH	0	0	32
WEST	16	16	0

PDC91-08-067
PDC97-04-028
PDC99-10-081

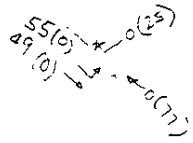


TOTAL ATI



TRAFFIX SETUP

RUBINO (40% OF TOTAL PROJ. TRIPS)



99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/NARVAEZ
Traffix Node Number: 5711

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	0	0	0	8	0	0	0	39	0	0	33	55
PDA94-02-038	0	0	5	0	0	0	0	0	0	2	15	0
PDC85-11-109	0	0	0	3	0	0	0	0	0	0	1	0
PDC91-08-067	0	0	0	2	0	0	0	16	0	0	19	12
PDC91-10-077	0	0	0	8	0	0	0	0	0	0	0	3
PDC96-04-015	7	0	0	0	0	20	19	36	6	0	40	0
PDC97-02-014	0	0	0	0	0	0	0	11	0	0	0	0
PDC97-04-028	0	0	0	4	0	0	0	0	0	0	0	2
PDC97-09-067	0	0	1	3	0	0	0	13	0	1	12	7
TOTAL:	**7**	**0**	**6**	**28**	**0**	**20**	**19**	**115**	**6**	**3**	**120**	**79**

	LEFT	THRU	RIGHT
NORTH	28	0	20
EAST	3	120	79
SOUTH	7	0	6
WEST	19	115	6

PM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/NARVAEZ
Traffix Node Number: 5711

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	0	0	0	14	0	0	0	74	0	0	17	29
PDA94-02-038	0	0	2	4	0	0	0	0	0	3	6	0
PDC85-11-109	0	0	0	1	0	0	0	0	0	0	3	0
PDC91-08-067	0	0	2	4	0	0	0	32	0	2	14	6
PDC91-10-077	0	0	0	0	0	0	0	3	0	0	8	0
PDC96-04-015	7	0	0	0	0	21	22	44	7	0	41	0
PDC97-02-014	0	0	0	0	0	0	0	0	0	0	11	0
PDC97-04-028	0	0	0	2	0	0	0	0	0	0	0	4
PDC97-09-067	0	0	1	6	0	0	0	28	0	1	21	7
TOTAL:	**7**	**0**	**5**	**31**	**0**	**21**	**22**	**181**	**7**	**6**	**121**	**46**

	LEFT	THRU	RIGHT
NORTH	31	0	21
EAST	6	121	46
SOUTH	7	0	5
WEST	22	181	7

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: HILLSDALE/NARVAEZ
Traffix Node Number: 3849

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
~~COYOTE REASSIGN~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~-28~~	0	0	~~-109~~	~~0~~
PDC91-08-067	0	0	3	0	0	0	0	1	0	7	2	0
PDC97-04-028	4	0	0	0	0	0	0	4	20	0	2	0
TOTAL:	**4**	**0**	**3**	**0**	**0**	**0**	**0**	~~-23~~	~~20~~	**7**	~~-105~~	**0**
PDC97-02-014 (RUBINO)	0	0	0	0	0	0	0	10	45	0	0	0
40%								15	65		4	

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	7	~~-105~~ 4	0
SOUTH	4	0	3
WEST	0	~~-23~~ 15	~~20~~ 65

PM APPROVED TRIPS

06/13/2000

Intersection of: HILLSDALE/NARVAEZ
Traffix Node Number: 3849

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
~~COYOTE REASSIGN~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~-100~~	0	0	~~-11~~	~~0~~
PDC91-08-067	0	0	5	0	0	0	0	3	0	4	2	0
PDC97-04-028	9	0	0	0	0	0	0	2	10	0	4	0
TOTAL:	~~9~~	**0**	**5**	**0**	**0**	**0**	**0**	~~-103~~	**10**	**4**	~~-5~~	**0**
PDC97-02-014 (RUBINO)	14	0	0	0	0	0	0	0	0	0	11	0
40%	23							5			17	

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	4	~~-5~~ 17	0
SOUTH	~~9~~	0	5
WEST	0	~~-103~~ 5	10

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: ALMADEN/FOXWORTHY
Traffix Node Number: 5506

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	0	3	0	0	1	0	0	0	0	0	0	0
PDC91-08-067	0	0	0	1	1	0	0	0	0	0	0	0
PDC91-10-077	0	0	0	3	0	0	0	0	0	0	0	0
PDC96-02-011	0	3	0	0	4	0	0	0	0	0	0	0
PDC97-02-014	0	0	0	0	0	0	0	0	0	15	0	11
TOTAL:	**0**	**6**	**0**	**4**	**6**	**0**	**0**	**0**	**0**	**15**	**0**	**11**

	LEFT	THRU	RIGHT
NORTH	4	6	0
EAST	15	0	11
SOUTH	0	6	0
WEST	0	0	0

PM APPROVED TRIPS

06/13/2000

Intersection of: ALMADEN/FOXWORTHY
Traffix Node Number: 5506

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	0	1	0	0	3	0	0	0	0	0	0	0
PDC91-08-067	0	0	0	2	2	0	0	0	0	0	0	0
PDC91-10-077	0	0	0	7	0	0	0	0	0	0	0	0
PDC96-02-011	0	16	0	0	16	0	0	0	0	0	0	0
PDC97-02-014	0	0	14	22	0	0	0	7	0	0	0	0
TOTAL:	**0**	**17**	**14**	**31**	**21**	**0**	**0**	**7**	**0**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	31	21	0
EAST	0	0	0
SOUTH	0	17	14
WEST	0	7	0

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: 87/CAPITOL
Traffix Node Number: 5713

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	0	0	0	29	0	0	0	10	0	14	18	0
PDA94-02-038	0	0	0	0	0	0	0	0	0	6	0	0
PDC85-11-109	0	0	0	0	0	0	0	0	0	1	0	0
PDC91-08-067	0	0	0	10	0	0	0	6	0	8	11	0
PDC91-10-077	0	0	0	0	0	13	0	0	9	0	0	0
PDC96-04-015	0	0	0	0	0	20	0	61	19	0	67	0
PDC97-02-014	0	0	0	0	0	0	0	11	15	0	0	0
PDC97-04-028	0	0	0	0	0	8	0	0	5	0	0	0
PDC97-09-067	0	0	0	4	0	0	0	9	0	2	10	0
TOTAL:	**0**	**0**	**0**	**43**	**0**	**41**	**0**	**97**	**48**	**31**	**106**	**0**

	LEFT	THRU	RIGHT
NORTH	43	0	41
EAST	31	106	0
SOUTH	0	0	0
WEST	0	97	48

PM APPROVED TRIPS

06/13/2000

Intersection of: 87/CAPITOL
Traffix Node Number: 5713

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	0	0	0	55	0	0	0	18	0	7	10	0
PDA94-02-038	0	0	0	8	0	0	0	0	0	0	0	0
PDC85-11-109	0	0	0	0	0	0	0	0	0	3	0	0
PDC91-08-067	0	0	0	19	0	0	0	13	0	5	9	0
PDC91-10-077	0	0	0	0	0	32	0	3	4	0	8	0
PDC96-04-015	0	0	0	0	0	21	0	73	22	0	69	0
PDC97-02-014	0	0	0	0	0	44	0	0	0	0	11	0
PDC97-04-028	0	0	0	0	0	16	0	0	2	0	0	0
PDC97-09-067	0	0	0	10	0	0	0	18	0	6	15	0
TOTAL:	**0**	**0**	**0**	**92**	**0**	**113**	**0**	**125**	**28**	**21**	**122**	**0**

	LEFT	THRU	RIGHT
NORTH	92	0	113
EAST	21	122	0
SOUTH	0	0	0
WEST	0	125	28

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/SNELL
Traffix Node Number: 5715

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	89	0	42	0	0	0	0	0	47	23	0	0
PDA94-02-038	6	0	0	0	0	0	0	10	5	0	7	0
PDC89-04-051	10	0	0	0	0	0	0	33	19	0	21	0
PDC91-08-067	1	1	0	6	1	0	0	10	1	0	6	3
PDC91-10-077	0	1	0	12	6	0	0	8	0	0	3	5
PDC96-04-015	6	0	0	0	0	0	0	18	6	0	21	0
PDC97-02-014	0	0	0	4	4	0	0	3	2	0	0	0
PDC97-04-028	1	0	0	2	1	0	0	1	1	0	0	2
PDC97-09-067	2	0	0	0	0	0	0	8	2	0	7	0
TOTAL:	**115**	**2**	**42**	**24**	**12**	**0**	**0**	**91**	**83**	**23**	**65**	**10**

	LEFT	THRU	RIGHT
NORTH	24	12	0
EAST	23	65	10
SOUTH	115	2	42
WEST	0	91	83

PM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/SNELL
Traffix Node Number: 5715

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	47	0	23	0	0	0	0	0	89	42	0	0
PDA94-02-038	3	0	0	0	0	0	0	5	7	0	7	0
PDC89-04-051	5	0	0	0	0	0	0	6	6	0	12	0
PDC91-08-067	2	1	0	3	1	0	0	7	1	0	11	6
PDC91-10-077	0	6	0	5	1	0	0	3	0	0	8	12
PDC96-04-015	7	0	0	0	0	0	0	22	8	0	21	0
PDC97-02-014	3	4	0	0	0	0	0	0	0	0	2	4
PDC97-04-028	1	1	0	2	0	0	0	0	1	0	1	2
PDC97-09-067	6	0	0	0	0	0	0	13	6	0	15	0
TOTAL:	**74**	**12**	**23**	**10**	**2**	**0**	**0**	**56**	**118**	**42**	**77**	**24**

	LEFT	THRU	RIGHT
NORTH	10	2	0
EAST	42	77	24
SOUTH	74	12	23
WEST	0	56	118

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: ALMADEN/CHERRY
Traffix Node Number: 5521

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	3	9	0	0	3	0	0	0	0	0	0	0
PDC96-02-011	0	0	56	7	0	0	0	15	0	33	9	5
PDC96-10-066	0	0	0	0	0	0	0	0	0	0	0	0
PDC97-02-014	0	0	0	0	15	0	0	0	0	0	0	0
PDC97-11-078	0	2	1	0	5	0	0	0	3	2	0	0
TOTAL:	**3**	**11**	**57**	**7**	**23**	**0**	**0**	**15**	**3**	**35**	**9**	**5**

	LEFT	THRU	RIGHT
NORTH	7	23	0
EAST	35	9	5
SOUTH	3	11	57
WEST	0	15	3

PM APPROVED TRIPS

06/13/2000

Intersection of: ALMADEN/CHERRY
Traffix Node Number: 5521

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	0	3	0	0	9	0	0	0	3	0	0	0
PDC96-02-011	0	0	191	26	0	0	0	52	0	195	52	26
PDC96-10-066	0	0	0	0	0	0	0	0	0	0	0	0
PDC97-02-014	0	14	0	0	0	0	0	0	0	0	0	0
PDC97-11-078	0	0	0	0	0	0	0	0	0	0	0	0
PDC99-10-081	0	23	0	0	30	0	0	0	0	0	0	0
TOTAL:	**0**	**40**	**191**	**26**	**39**	**0**	**0**	**52**	**3**	**195**	**52**	**26**

	LEFT	THRU	RIGHT
NORTH	26	39	0
EAST	195	52	26
SOUTH	0	40	191
WEST	0	52	3

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: ALMADEN/BRANHAM
Traffix Node Number: 5512

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	1	5	3	0	1	0	0	0	1	1	0	0
PDC91-08-067	0	0	0	0	1	1	0	0	0	0	0	0
PDC91-10-077	0	0	2	0	0	0	0	3	0	3	4	0
PDC96-02-011	0	5	0	0	7	0	0	0	0	0	0	0
PDC96-10-066	0	0	0	0	0	0	0	0	0	0	0	0
PDC96-11-072	0	0	3	3	0	0	0	2	0	0	4	0
PDC97-02-014	0	0	0	0	15	0	0	0	0	0	0	0
PDC97-11-078	1	5	0	0	2	0	0	0	3	1	0	0
TOTAL:	**2**	**15**	**8**	**3**	**26**	**1**	**0**	**5**	**4**	**5**	**8**	**0**

	LEFT	THRU	RIGHT
NORTH	3	26	1
EAST	5	8	0
SOUTH	2	15	8
WEST	0	5	4

PM APPROVED TRIPS

06/13/2000

Intersection of: ALMADEN/BRANHAM
Traffix Node Number: 5512

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	1	1	1	0	5	0	0	0	1	3	0	0
PDC91-08-067	0	1	0	0	1	0	1	0	0	0	0	0
PDC91-10-077	0	0	3	0	0	0	0	4	0	2	3	0
PDC96-02-011	0	26	0	0	26	0	0	0	0	0	0	0
PDC96-10-066	0	0	0	0	0	0	0	0	0	0	0	0
PDC96-11-072	0	0	0	0	0	0	0	4	0	3	2	3
PDC97-02-014	0	14	0	0	0	0	0	0	0	0	0	0
PDC97-11-078	0	0	0	0	0	0	0	0	0	0	0	0
PDC99-10-081	9	14	0	0	18	0	0	0	12	0	0	0
TOTAL:	**10**	**56**	**4**	**0**	**50**	**0**	**1**	**8**	**13**	**8**	**5**	**3**

	LEFT	THRU	RIGHT
NORTH	0	50	0
EAST	8	5	3
SOUTH	10	56	4
WEST	1	8	13

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: ALMADEN/BLOSSOM HILL
Traffix Node Number: 5513

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	2	44	0	0	22	0	0	0	0	0	0	0
PDC94-01-002 SH	0	0	0	0	0	7	10	3	0	0	2	0
PDC96-02-011	0	8	3	0	4	2	2	3	0	2	0	0
PDC96-10-066	0	0	0	0	0	0	0	0	0	0	0	0
PDC96-11-072	0	0	2	0	0	0	0	3	0	3	4	0
PDC96-12-075	0	0	0	0	0	0	0	0	0	0	0	0
PDC97-11-078	0	4	0	4	1	0	1	0	0	0	0	3
TOTAL:	**2**	**56**	**5**	**4**	**27**	**9**	**13**	**9**	**0**	**5**	**6**	**3**

	LEFT	THRU	RIGHT
NORTH	4	27	9
EAST	5	6	3
SOUTH	2	56	5
WEST	13	9	0

PM APPROVED TRIPS

06/13/2000

Intersection of: ALMADEN/BLOSSOM HILL
Traffix Node Number: 5513

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	0	22	0	0	44	0	0	0	2	0	0	0
PDC94-01-002 SH	0	0	0	0	0	10	7	2	0	0	3	0
PDC96-02-011	0	27	9	0	27	12	8	8	0	9	4	0
PDC96-10-066	0	0	0	0	0	0	0	0	0	0	0	0
PDC96-11-072	0	0	3	0	0	0	0	4	0	2	3	0
PDC96-12-075	0	0	0	0	0	0	0	0	0	0	0	0
PDC97-11-078	0	3	0	14	4	2	1	0	0	0	0	3
PDC99-10-081	0	40	0	30	0	0	0	18	0	30	14	23
TOTAL:	**0**	**92**	**12**	**44**	**75**	**24**	**16**	**32**	**2**	**41**	**24**	**26**

	LEFT	THRU	RIGHT
NORTH	44	75	24
EAST	41	24	26
SOUTH	0	92	12
WEST	16	32	2

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: 85/ALMADEN PLAZA
Traffix Node Number: 3201

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	0	0	0	16	0	0	0	0	0	0	0	0
PDC96-02-011	0	0	0	23	0	0	0	0	0	0	0	0
PDC97-11-078	0	0	0	21	0	0	0	0	0	0	0	0
TOTAL:	**0**	**0**	**0**	**60**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	60	0	0
EAST	0	0	0
SOUTH	0	0	0
WEST	0	0	0

PM APPROVED TRIPS

06/13/2000

Intersection of: 85/ALMADEN PLAZA
Traffix Node Number: 3201

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	0	0	0	16	0	0	0	0	0	0	0	0
PDC96-02-011	0	0	0	78	0	0	0	0	0	0	0	0
PDC97-11-078	0	0	0	18	0	0	0	0	0	0	0	0
TOTAL:	**0**	**0**	**0**	**112**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	112	0	0
EAST	0	0	0
SOUTH	0	0	0
WEST	0	0	0

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/COPPERFIELD
Traffix Node Number: 5708

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	0	0	0	0	0	0	0	47	0	0	89	0
PDA94-02-038	0	0	0	0	0	0	15	0	0	0	0	0
PDC91-08-067	0	0	0	6	0	26	13	9	0	0	12	16
PDC91-10-077	0	0	0	0	0	0	0	8	0	0	3	0
PDC97-04-028	0	0	0	0	0	0	0	4	0	0	2	0
PDC97-09-067	0	0	1	0	0	0	0	17	0	0	20	0
TOTAL:	**0**	**0**	**1**	**6**	**0**	**26**	**28**	**85**	**0**	**0**	**126**	**16**

	LEFT	THRU	RIGHT
NORTH	6	0	26
EAST	0	126	16
SOUTH	0	0	1
WEST	28	85	0

PM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/COPPERFIELD
Traffix Node Number: 5708

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	0	0	0	0	0	0	0	89	0	0	47	0
PDA94-02-038	0	0	0	0	0	0	20	0	0	0	0	0
PDC91-08-067	0	0	0	16	0	13	26	12	0	0	9	6
PDC91-10-077	0	0	0	0	0	0	0	3	0	0	8	0
PDC97-04-028	0	0	0	0	0	0	0	2	0	0	4	0
PDC97-09-067	0	0	1	0	0	0	0	35	0	0	29	0
TOTAL:	**0**	**0**	**1**	**16**	**0**	**13**	**46**	**141**	**0**	**0**	**97**	**6**

	LEFT	THRU	RIGHT
NORTH	16	0	13
EAST	0	97	6
SOUTH	0	0	1
WEST	46	141	0

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/VISTAPARK
Traffix Node Number: 5712

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	0	0	0	0	0	0	0	47	0	0	89	0
PDA94-02-038	4	7	0	15	2	0	0	0	0	0	0	16
PDC91-08-067	1	0	0	0	0	0	0	11	1	0	6	0
PDC91-10-077	0	0	0	0	0	0	0	8	0	0	3	0
PDC96-04-015	13	0	0	0	0	0	0	24	12	0	27	0
PDC97-04-028	0	0	0	0	0	0	0	2	0	0	1	0
PDC97-09-067	0	2	0	10	2	20	18	0	0	0	0	9
TOTAL:	**18**	**9**	**0**	**25**	**4**	**20**	**18**	**92**	**13**	**0**	**126**	**25**

	LEFT	THRU	RIGHT
NORTH	25	4	20
EAST	0	126	25
SOUTH	18	9	0
WEST	18	92	13

PM APPROVED TRIPS

06/13/2000

Intersection of: CAPITOL/VISTAPARK
Traffix Node Number: 5712

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PD96-01-002	0	0	0	0	0	0	0	89	0	0	47	0
PDA94-02-038	0	2	0	12	9	0	0	0	0	0	0	10
PDC91-08-067	4	0	0	0	0	0	0	8	4	0	13	0
PDC91-10-077	0	0	0	0	0	0	0	3	0	0	8	0
PDC96-04-015	13	0	0	0	0	0	0	30	14	0	28	0
PDC97-04-028	0	0	0	0	0	0	0	1	0	0	2	0
PDC97-09-067	0	6	0	19	7	29	36	0	0	0	0	21
TOTAL:	**17**	**8**	**0**	**31**	**16**	**29**	**36**	**131**	**18**	**0**	**98**	**31**

	LEFT	THRU	RIGHT
NORTH	31	16	29
EAST	0	98	31
SOUTH	17	8	0
WEST	36	131	18

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: 85/ALMADEN (N)
Traffix Node Number: 5522

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	0	12	0	0	3	0	0	0	0	3	0	0
PDC96-02-011	0	33	0	0	33	0	0	0	0	0	0	23
PDC96-10-066	0	0	0	0	0	0	0	0	0	0	0	0
PDC96-11-072	0	0	0	0	0	0	0	0	0	0	0	0
PDC97-02-014	0	0	0	0	15	0	0	0	0	0	0	0
PDC97-11-078	30	3	0	0	0	10	0	0	21	0	34	0
TOTAL:	**30**	**48**	**0**	**0**	**51**	**10**	**0**	**0**	**21**	**3**	**34**	**23**

	LEFT	THRU	RIGHT
NORTH	0	51	10
EAST	3	34	23
SOUTH	30	48	0
WEST	0	0	21

PM APPROVED TRIPS

06/13/2000

Intersection of: 85/ALMADEN (N)
Traffix Node Number: 5522

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	0	3	0	0	12	0	0	0	0	16	0	0
PDC96-02-011	0	113	0	0	195	0	0	0	0	0	0	78
PDC96-10-066	0	0	0	0	0	0	0	0	0	0	0	0
PDC96-11-072	0	0	0	0	0	0	0	0	0	0	0	0
PDC97-02-014	0	14	0	0	0	0	0	0	0	0	0	0
PDC97-11-078	26	11	0	0	0	9	0	0	81	0	29	0
PDC99-10-081	0	23	0	0	30	0	0	0	0	0	0	0
TOTAL:	**26**	**164**	**0**	**0**	**237**	**9**	**0**	**0**	**81**	**16**	**29**	**78**

	LEFT	THRU	RIGHT
NORTH	0	237	9
EAST	16	29	78
SOUTH	26	164	0
WEST	0	0	81

99-083

AM APPROVED TRIPS

06/13/2000

Intersection of: 85/ALMADEN (S)
Traffix Node Number: 5523

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	0	28	16	0	6	0	0	0	16	0	0	0
PDC96-02-011	0	10	0	0	6	0	23	0	0	0	0	0
PDC96-10-066	0	0	0	0	0	0	0	0	0	0	0	0
PDC96-11-072	0	0	0	0	0	0	0	0	0	0	0	0
PDC97-02-014	0	0	0	0	7	0	0	0	0	0	0	0
PDC97-11-078	0	11	0	0	5	0	0	0	21	0	0	0
TOTAL:	**0**	**49**	**16**	**0**	**24**	**0**	**23**	**0**	**37**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	0	24	0
EAST	0	0	0
SOUTH	0	49	16
WEST	23	0	37

PM APPROVED TRIPS

06/13/2000

Intersection of: 85/ALMADEN (S)
Traffix Node Number: 5523

PROJECT	M09 NBL	M08 NBT	M07 NBR	M03 SBL	M02 SBT	M01 SBR	M12 EBL	M11 EBT	M10 EBR	M06 WBL	M05 WBT	M04 WBR
PDC85-11-109	0	19	3	0	28	0	0	0	16	0	0	0
PDC96-02-011	0	35	0	0	39	0	78	0	0	0	0	0
PDC96-10-066	0	0	0	0	0	0	0	0	0	0	0	0
PDC96-11-072	0	0	0	0	0	0	0	0	0	0	0	0
PDC97-02-014	0	7	0	0	0	0	7	0	0	0	0	0
PDC97-11-078	0	18	0	0	20	0	18	0	0	0	0	0
PDC99-10-081	0	23	0	0	30	0	0	0	0	0	0	0
TOTAL:	**0**	**102**	**3**	**0**	**117**	**0**	**103**	**0**	**16**	**0**	**0**	**0**

	LEFT	THRU	RIGHT
NORTH	0	117	0
EAST	0	0	0
SOUTH	0	102	3
WEST	103	0	16

99-083

Appendix C

Volume Summary Tables

99-083

3091

Intersection Name: Capitol Expwy & Monterey (N)
Peak Hour: AM
Scenario:
(SJ) Growth Factor: 0.003
(SJ) Number of Months: 0.0

Date of Analysis: 6/20/00
Count Date: 3/22/2000
Future Growth % Per Year: 0.020
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	0	370	110	176	0	156	356	2985	0	0	0	0
Redist. of existing												
Approved Trips	0	345	31	21	0	211	35	175	0	0	0	0
Redist. of App Trips												
Background Volumes	0	715	141	197	0	367	391	3160	0	0	0	0
Project Trips	0	0	10	0	0	0	6	19	0	0	0	0
Project Conditions	0	715	151	197	0	367	397	3179	0	0	0	0
Future Growth Conditions	0	730	155	204	0	373	411	3298	0	0	0	0

3092

Intersection Name: Capitol Expwy & Monterey (S)
Peak Hour: AM
Scenario:
(SJ) Growth Factor: 0.003
(SJ) Number of Months: 0.0

Date of Analysis: 6/20/00
Count Date: 3/22/2000
Future Growth % Per Year: 0.020
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	0	511	43	654	0	54	226	2720	0	0	0	0
Redist. of existing												
Approved Trips	0	545	11	50	0	85	59	160	0	0	0	0
Redist. of App Trips												
Background Volumes	0	1056	54	704	0	139	285	2880	0	0	0	0
Project Trips	0	0	0	19	0	11	0	6	0	0	0	0
Project Conditions	0	1056	54	723	0	150	285	2886	0	0	0	0
Future Growth Conditions	0	1076	56	749	0	152	294	2995	0	0	0	0

99-083

3091

Intersection Name: Capitol Expwy & Monterey (N)
Peak Hour: PM
Date of Analysis: 6/20/00
Scenario:
Count Date: 3/22/2000
(SJ) Growth Factor: 0.003
Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	0	2294	280	110	0	193	225	859	0	0	0	0
Redist. of existing												
Approved Trips	0	147	49	15	0	67	64	363	0	0	0	0
Redist. of App Trips												
Background Volumes	0	2441	329	125	0	260	289	1222	0	0	0	0
Project Trips	0	0	19	0	0	0	11	10	0	0	0	0
Project Conditions	0	2441	348	125	0	260	300	1232	0	0	0	0
Future Growth Conditions	0	2533	359	129	0	268	309	1266	0	0	0	0

3092

Intersection Name: Capitol Expwy & Monterey (S)
Peak Hour: PM
Date of Analysis: 6/20/00
Scenario:
Count Date: 3/22/2000
(SJ) Growth Factor: 0.003
Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	0	2313	134	212	0	151	212	918	0	0	0	0
Redist. of existing												
Approved Trips	0	190	24	30	0	20	220	394	0	0	0	0
Redist. of App Trips												
Background Volumes	0	2503	158	242	0	171	432	1312	0	0	0	0
Project Trips	0	0	0	10	0	6	0	11	0	0	0	0
Project Conditions	0	2503	158	252	0	177	432	1323	0	0	0	0
Future Growth Conditions	0	2596	163	260	0	183	440	1360	0	0	0	0

99-083

3120

Intersection Name:	Pearl Ave	& Capitol Expwy		
Peak Hour:	AM		Date of Analysis:	6/20/00
Scenario:			Count Date:	5/10/2000
(SJ) Growth Factor:	0.003		Future Growth % Per Year:	0.020
(SJ) Number of Months:	0.0		Number of Years to Buildout:	2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	479	150	90	203	1783	378	259	146	656	153	683	223
Redist. of existing	-330											
Exist. Rubino Trips (60% o	-69	0	0	0	0	0	0	0	0	0	0	0
Approved Trips	46	17	43	23	49	20	24	6	0	0	45	14
Redist. of App Trips												
Background Volumes	126	167	133	226	1832	398	283	152	656	153	728	237
Project Trips	0	10	0	0	40	8	4	5	0	0	21	3
Project Conditions	126	177	133	226	1872	406	287	157	656	153	749	240
Future Growth Conditions	145	183	137	234	1943	421	297	163	682	159	776	249

3208

Intersection Name:	Narvaez Av	& SR 87 NB ramps		
Peak Hour:	AM		Date of Analysis:	6/20/00
Scenario:			Count Date:	5/31/00
(SJ) Growth Factor:	0.003		Future Growth % Per Year:	0.020
(SJ) Number of Months:	0.0		Number of Years to Buildout:	2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	275	103	0	0	0	0	0	88	802	168	0	35
Redist. of existing												
Approved Trips	100	11	0	0	0	0	0	5	104	33	0	9
Redist. of App Trips												
Background Volumes	375	114	0	0	0	0	0	93	906	201	0	44
Project Trips	113	121	0	0	0	0	0	87	0	0	0	25
Project Conditions	488	235	0	0	0	0	0	180	906	201	0	69
Future Growth Conditions	499	239	0	0	0	0	0	184	938	208	0	70

99-083

3120

Intersection Name: Pearl Ave & Capitol Expwy
Peak Hour: PM
Date of Analysis: 6/20/00
Scenario:
Count Date: 5/11/2000
(SJ) Growth Factor: 0.003
Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	101	99	112	164	950	497	236	86	222	538	1614	268
Redist. of existing	-20											
Existing Rubino Trips (60% occ.)		0	0	0	0	0	0	0	0	0	0	-67
Approved Trips	14	6	12	114	52	26	25	17	0	0	57	38
Redist. of App Trips												
Background Volumes	95	105	124	278	1002	523	261	103	222	538	1671	239
Project Trips	0	5	0	0	21	4	8	10	0	0	40	6
Project Conditions	95	110	124	278	1023	527	269	113	222	538	1711	245
Future Growth Conditions	99	114	128	285	1061	547	278	116	231	560	1776	256

3208

Intersection Name: Narvaez Av & SR 87 NB ramps
Peak Hour: PM
Date of Analysis: 6/20/00
Scenario:
Count Date: 5/31/00
(SJ) Growth Factor: 0.003
Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	214	115	0	0	0	0	0	98	706	652	0	155
Redist. of existing												
Approved Trips	25	2	0	0	0	0	0	4	64	49	0	33
Redist. of App Trips												
Background Volumes	239	117	0	0	0	0	0	102	770	701	0	188
Project Trips	60	64	0	0	0	0	0	164	0	0	0	47
Project Conditions	299	181	0	0	0	0	0	266	770	701	0	235
Future Growth Conditions	308	186	0	0	0	0	0	270	798	727	0	241

99-083

3587

Intersection Name: Pearl Ave & Hillsdale Ave
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 6/1/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing (6/1/00 count) without Foxworthy open	0	174	42	55	0	505	412	117	7	0	0	0
Existing (12/11/96 count) with Foxworthy open	0	160	110	384	0	174	412	100	7	0	0	0
Existing Rubino Trips (60% occ.)		75	84	0	0	0	0	0	0	0	0	0
Approved Trips	0	54	71	10	0	21	15	0	0	0	0	0
Redist. of App Trips												
Background Volumes	0	289	265	394	0	195	427	100	7	0	0	0
Project Trips	0	0	51	101	0	10	8	0	0	0	0	0
Project Conditions	0	289	316	495	0	205	435	100	7	0	0	0
Future Growth Conditions	0	295	320	510	0	212	451	104	7	0	0	0

=existing (12/11/96 count) + existing Rubino traffic + approved trips

5711

Intersection Name: Narvaez Ave & Capitol Expwy
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 6/9/2000
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	260	24	59	398	2149	60	67	184	201	130	978	144
Redist. of existing												
Approved Trips	20	0	28	79	120	3	6	0	7	6	115	19
Redist. of App Trips												
Background Volumes	280	24	87	477	2269	63	73	184	208	136	1093	163
Project Trips	95	0	26	2	0	0	0	0	0	0	0	85
Project Conditions	375	24	113	479	2269	63	73	184	208	136	1093	248
Future Growth Conditions	385	25	115	495	2355	65	76	191	216	141	1132	254

99-083

3587

Intersection Name: Pearl Ave & Hillsdale Ave
Peak Hour: PM — Date of Analysis: 6/20/00
Scenario: — Count Date: 6/1/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing (6/1/00 count) without Foxworthy open	0	86	59	20	0	179	390	109	7	0	0	0
Existing (12/11/96 count) with Foxworthy open		54	288	129	0	139	390	45	7	0	0	0
Existing Rubino Trips (60% occ.)		0	0	38	0	0	0	117	0	0	0	0
Approved Trips	0	16	16	58	0	9	32	77	0	0	0	0
Redist. of App Trips												
Background Volumes	0	70	304	225	0	148	422	239	7 0	0	0	0
Project Trips	0	0	96	54	0	5	16	0	0	0	0	0
Project Conditions	0	70	400	279	0	153	438	239	7	0	0	0
Future Growth Conditions	0	72	412	284	0	159	454	241	7	0	0	0

=existing (12/11/96 count) + existing Rubino traffic + approved trips

5711

Intersection Name: Narvaez Ave & Capitol Expwy
Peak Hour: PM — Date of Analysis: 6/20/00
Scenario: — Count Date: 3/8/2000
(SJ) Growth Factor: 0.003 — Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	223	57	307	349	1104	77	35	124	52	132	1711	328
Redist. of existing												
Approved Trips	21	0	31	46	121	6	5	0	7	7	181	22
Redist. of App Trips												
Background Volumes	244	57	338	395	1225	83	40	124	59	139	1892	350
Project Trips	50	0	14	4	0	0	0	0	0	0	0	161
Project Conditions	294	57	352	399	1225	83	40	124	59	139	1892	511
Future Growth Conditions	303	59	364	413	1269	86	41	129	61	144	1960	524

99-089

3849

Intersection Name: Narvaez & Hillsdale
Peak Hour: AM
Scenario:
(SJ) Growth Factor: 0.003
(SJ) Number of Months: 0.0

Date of Analysis: 6/20/00
Count Date: 8/26/99
Future Growth % Per Year: 0.020
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	61	6	45	109	151	0	1	3	1	5	269	162
Redist. of existing												
Approved Trips	0	0	0	0	4	7	3	0	4	20	5	0
Redist. of App Trips												
Background Volumes	61	6	45	109	155	7	4	3	5	25	274	162
Project Trips	47	138	2	13	64	96	51	61	0	0	35	25
Project Conditions	108	144	47	122	219	103	55	64	5	25	309	187
Future Growth Conditions	110	144	49	126	225	103	55	64	5	25	320	193

5506

Intersection Name: Almaden & Foxworthy
Peak Hour: AM
Scenario:
(SJ) Growth Factor: 0.003
(SJ) Number of Months: 0.0

Date of Analysis: 6/20/00
Count Date: 5/23/00
Future Growth % Per Year: 0.020
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	73	1013	39	204	40	38	15	3567	114	103	22	144
Redist. of existing			82	129	-40	49	16				38	
Existing Rubino Trips (60% occ.)		0	0	17	0	23	0	-17	0	0	0	0
Approved Trips	0	6	4	11	0	15	0	6	0	0	0	0
Redist. of App Trips												
Background Volumes	73	1019	125	361	0	125	31	3556	114	103	60	144
Project Trips	0	1	29	63	0	38	13	2	1	0	9	0
Project Conditions	73	1020	154	424	0	163	44	3558	115	103	69	144
Future Growth Conditions	76	1061	156	432	0	165	45	3701	120	107	70	150

99-083

3849

Intersection Name: Narvaez & Hillsdale
Peak Hour: PM
Scenario:
(SJ) Growth Factor: 0.003
(SJ) Number of Months: 0.0

Date of Analysis: 6/20/00
Count Date: 8/26/99
Future Growth % Per Year 0.020
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	161	1	53	173	231	0	0	1	0	0	214	138
Redist. of existing												
Approved Trips	0	0	0	0	6	4	5	0	9	10	5	0
Redist. of App Trips												
Background Volumes	161	1	53	173	237	4	5	1	9	10	219	138
Project Trips	25	73	1	25	34	51	96	115	0	0	65	47
Project Conditions	186	74	54	198	271	55	101	116	9	10	284	185
Future Growth Conditions	192	74	56	205	280	55	101	116	9	10	293	191

5506

Intersection Name: Almaden & Foxworthy
Peak Hour: PM
Scenario:
(SJ) Growth Factor: 0.003
(SJ) Number of Months: 0.0

Date of Analysis: 6/20/00
Count Date: 5/23/00
Future Growth % Per Year 0.020
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	107	3106	102	51	33	113	13	952	147	129	32	88
Redist. of existing			75	68	-33	58	10				15	
Existing Rubino Trips (60% occ.)		-33	33	0	0	0	23	0	0	-11	11	0
Approved Trips	0	21	31	0	0	0	14	17	0	0	7	0
Redist. of App Trips												
Background Volumes	107	3094	241	119	0	171	60	969	147	118	65	88
Project Trips	0	2	54	34	0	20	24	1	0	1	18	0
Project Conditions	107	3096	295	153	0	191	84	970	147	119	83	88
Future Growth Conditions	111	3220	299	155	0	196	85	1008	153	124	84	92

99-088

5713

Intersection Name: SR 87 & Capitol Expwy.
Peak Hour: AM
Scenario:
(SJ) Growth Factor: 0.003
(SJ) Number of Months: 0.0

Date of Analysis: 6/20/00
Count Date: 5/11/2000
Future Growth % Per Year: 0.020
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	498	0	399	0	1976	505	0	0	0	280	772	0
Redist. of existing												
Approved Trips	41	0	43	0	106	31	0	0	0	48	97	0
Redist. of App Trips												
Background Volumes	539	0	442	0	2082	536	0	0	0	328	869	0
Project Trips	0	0	60	0	47	48	0	0	0	0	26	0
Project Conditions	539	0	502	0	2129	584	0	0	0	328	895	0
Future Growth Conditions	559	0	518	0	2208	604	0	0	0	339	926	0

5715

Intersection Name: Snell Ave & Capitol Expwy
Peak Hour: AM
Scenario:
(SJ) Growth Factor: 0.003
(SJ) Number of Months: 0.0

Date of Analysis: 6/20/00
Count Date: 6/8/00
Future Growth % Per Year: 0.020
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	105	84	310	538	1734	185	709	269	609	191	903	294
Redist. of existing												
Approved Trips	0	12	24	10	65	23	42	2	115	83	91	0
Redist. of App Trips												
Background Volumes	105	96	334	548	1799	208	751	271	724	274	994	294
Project Trips	0	4	0	0	26	0	0	2	2	4	49	0
Project Conditions	105	100	334	548	1825	208	751	273	726	278	1043	294
Future Growth Conditions	109	103	346	570	1894	215	779	284	750	286	1079	306

99-083

5713

Intersection Name: SR 87 & Capitol Expwy.
Peak Hour: PM
Date of Analysis: 6/20/00
Scenario:
Count Date: 3/21/2000
(SJ) Growth Factor: 0.003
Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	418	6	847	0	1090	508	0	0	0	363	1988	0
Redist. of existing												
Approved Trips	113	0	92	0	122	21	0	0	0	28	125	0
Redist. of App Trips												
Background Volumes	531	6	939	0	1212	529	0	0	0	391	2113	0
Project Trips	0	0	113	0	26	25	0	0	0	0	48	0
Project Conditions	531	6	1052	0	1238	554	0	0	0	391	2161	0
Future Growth Conditions	548	6	1086	0	1282	574	0	0	0	406	2241	0

5715

Intersection Name: Snell Ave & Capitol Expwy
Peak Hour: PM
Date of Analysis: 6/20/00
Scenario:
Count Date: 3/21/2000
(SJ) Growth Factor: 0.003
Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	33	15	275	316	1167	445	289	101	250	491	1417	77
Redist. of existing												
Approved Trips	0	2	10	24	77	42	23	12	74	118	56	0
Redist. of App Trips												
Background Volumes	33	17	285	340	1244	487	312	113	324	609	1473	77
Project Trips	0	2	0	0	49	0	0	4	4	2	26	0
Project Conditions	33	19	285	340	1293	487	312	117	328	611	1499	77
Future Growth Conditions	34	20	296	353	1340	505	324	121	338	631	1556	80

99-083

5521

Intersection Name: Almaden Exwpy & Cherry Ave
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 5/24/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	70	1184	51	47	19	40	3	2882	253	521	16	160
Redist. of existing												
Approved Trips	0	23	7	5	9	35	57	11	3	3	15	0
Redist. of App Trips												
Background Volumes	70	1207	58	52	28	75	60	2893	256	524	31	160
Project Trips	0	21	0	0	0	0	0	11	0	0	0	0
Project Conditions	70	1228	58	52	28	75	60	2904	256	524	31	160
Future Growth Conditions	73	1275	60	54	29	77	60	3019	266	545	32	166

5512

Intersection Name: Almaden Expwy & Branham Ln
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 6/14/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	110	862	152	437	577	719	216	3593	157	66	363	285
Redist. of existing												
Approved Trips	1	26	3	0	8	5	8	15	2	4	5	0
Redist. of App Trips												
Background Volumes	111	888	155	437	585	724	224	3608	159	70	368	285
Project Trips	8	21	0	0	0	0	0	11	0	0	0	4
Project Conditions	119	909	155	437	585	724	224	3619	159	70	368	289
Future Growth Conditions	123	943	161	454	608	753	233	3763	165	73	383	300

99-083

5521
Intersection Name: Almaden Exwpy & Cherry Ave
Peak Hour: PM
Date of Analysis: 6/20/00
Scenario:
Count Date: 5/24/00
(SJ) Growth Factor: 0.003
Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	87	2257	179	20	69	190	7	1579	287	488	30	112
Redist. of existing												
Approved Trips	0	39	26	26	52	195	191	40	0	3	52	0
Redist. of App Trips												
Background Volumes	87	2296	205	46	121	385	198	1619	287	491	82	112
Project Trips	0	11	0	0	0	0	0	21	0	0	0	0
Project Conditions	87	2307	205	46	121	385	198	1640	287	491	82	112
Future Growth Conditions	90	2397	212	47	124	393	198	1703	298	511	83	116

5512
Intersection Name: Almaden Expwy & Branham Ln
Peak Hour: PM
Date of Analysis: 6/20/00
Scenario:
Count Date: 3/14/2000
(SJ) Growth Factor: 0.003
Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	403	2024	450	50	413	450	553	795	364	164	508	165
Redist. of existing												
Approved Trips	0	50	0	3	5	8	4	56	10	13	8	1
Redist. of App Trips												
Background Volumes	403	2074	450	53	418	458	557	851	374	177	516	166
Project Trips	4	11	0	0	0	0	0	21	0	0	0	8
Project Conditions	407	2085	450	53	418	458	557	872	374	177	516	174
Future Growth Conditions	423	2166	468	55	435	476	579	904	389	184	536	181

99-083

5513

Intersection Name: Almaden Expwy & Blossom Hill Rd
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 6/15/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	305	865	402	282	603	239	37	2771	136	103	362	425
Redist. of existing												
Approved Trips	9	27	4	3	6	5	5	56	2	0	9	13
Redist. of App Trips												
Background Volumes	314	892	406	285	609	244	42	2827	138	103	371	438
Project Trips	11	8	0	0	0	0	0	4	0	0	0	6
Project Conditions	325	900	406	285	609	244	42	2831	138	103	371	444
Future Growth Conditions	337	935	422	296	633	254	43	2942	143	107	385	461

3201

Intersection Name: SR 85 SB off-ramp & Almaden Plaza
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 5/25/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	28	0	685	0	44	0	0	0	0	0	53	0
Redist. of existing												
Approved Trips	0	0	60	0	0	0	0	0	0	0	0	0
Redist. of App Trips												
Background Volumes	28	0	745	0	44	0	0	0	0	0	53	0
Project Trips	0	0	1	0	0	0	0	0	0	0	0	0
Project Conditions	28	0	746	0	44	0	0	0	0	0	53	0
Future Growth Conditions	29	0	773	0	46	0	0	0	0	0	55	0

99-083

5513

Intersection Name: Almaden Expwy & Blossom Hill Rd
Peak Hour: PM — Date of Analysis: 6/20/00
Scenario: — Count Date: 3/15/2000
(SJ) Growth Factor: 0.003 — Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	298	1799	977	246	528	418	259	1459	251	133	1127	583
Redist. of existing												
Approved Trips	24	75	44	26	24	41	12	92	0	2	32	16
Redist. of App Trips												
Background Volumes	322	1874	1021	272	552	459	271	1551	251	135	1159	599
Project Trips	6	4	0	0	0	0	0	8	0	0	0	11
Project Conditions	328	1878	1021	272	552	459	271	1559	251	135	1159	610
Future Growth Conditions	340	1950	1060	282	573	476	281	1617	261	140	1204	633

3201

Intersection Name: SR 85 SB off-ramp & Almaden Plaza
Peak Hour: PM — Date of Analysis: 6/20/00
Scenario: — Count Date: 5/25/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	217	0	901	0	320	0	0	0	0	0	622	0
Redist. of existing												
Approved Trips	0	0	112	0	0	0	0	0	0	0	0	0
Redist. of App Trips												
Background Volumes	217	0	1013	0	320	0	0	0	0	0	622	0
Project Trips	0	0	2	0	0	0	0	0	0	0	0	0
Project Conditions	217	0	1015	0	320	0	0	0	0	0	622	0
Future Growth Conditions	226	0	1051	0	333	0	0	0	0	0	647	0

99-083

5708

Intersection Name: Copperfield Drive & Capitol Expressway
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 5/18/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	51	0	121	27	2539	0	49	0	0	20	974	137
Redist. of existing												
Approved Trips	26	0	6	16	126	0	1	0	0	0	85	28
Redist. of App Trips												
Background Volumes	77	0	127	43	2665	0	50	0	0	20	1059	165
Project Trips	0	0	0	0	2	0	0	0	0	0	26	0
Project Conditions	77	0	127	43	2667	0	50	0	0	20	1085	165
Future Growth Conditions	79	0	132	44	2769	0	52	0	0	21	1124	170

5712

Intersection Name: Vistapark Drive & Capitol Expressway
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 5/23/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	11	26	32	37	2227	72	93	65	306	44	1005	30
Redist. of existing												
Approved Trips	20	4	25	25	126	0	0	9	18	13	92	18
Redist. of App Trips												
Background Volumes	31	30	57	62	2353	72	93	74	324	57	1097	48
Project Trips	0	0	26	26	2	0	0	0	0	0	26	0
Project Conditions	31	30	83	88	2355	72	93	74	324	57	1123	48
Future Growth Conditions	31	31	84	89	2444	75	97	77	336	59	1163	49

99-083

5708

Intersection Name: Copperfield Drive & Capitol Expressway
Peak Hour: PM
Date of Analysis: 6/20/00
Scenario:
Count Date: 5/18/00
(SJ) Growth Factor: 0.003
Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	143	0	70	64	1408	0	40	0	0	117	2142	400
Redist. of existing												
Approved Trips	13	0	16	6	97	0	1	0	0	0	141	46
Redist. of App Trips												
Background Volumes	156	0	86	70	1505	0	41	0	0	117	2283	446
Project Trips	0	0	0	0	4	0	0	0	0	0	14	0
Project Conditions	156	0	86	70	1509	0	41	0	0	117	2297	446
Future Growth Conditions	162	0	89	73	1565	0	43	0	0	122	2383	462

5712

Intersection Name: Vistapark Drive & Capitol Expressway
Peak Hour: PM
Date of Analysis: 6/20/00
Scenario:
Count Date: 5/23/00
(SJ) Growth Factor: 0.003
Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0
Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	9	92	150	85	1393	146	67	54	182	264	2011	33
Redist. of existing												
Approved Trips	29	16	31	31	98	0	0	8	17	18	131	36
Redist. of App Trips												
Background Volumes	38	108	181	116	1491	146	67	62	199	282	2142	69
Project Trips	0	0	14	49	4	0	0	0	0	0	14	0
Project Conditions	38	108	195	165	1495	146	67	62	199	282	2156	69
Future Growth Conditions	38	112	201	168	1551	152	70	64	206	293	2236	70

99-083

5522

Intersection Name: Almaden Expwy & SR 85 (N)
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 6/15/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	0	1843	0	145	0	139	0	3019	0	0	0	0
Redist. of existing												
Approved Trips	0	51	0	23	0	3	0	48	0	0	0	0
Redist. of App Trips												
Background Volumes	0	1894	0	168	0	142	0	3067	0	0	0	0
Project Trips	2	19	0	0	0	0	0	11	0	0	0	0
Project Conditions	2	1913	0	168	0	142	0	3078	0	0	0	0
Future Growth Conditions	2	1987	0	174	0	148	0	3199	0	0	0	0

5523

Intersection Name: Almaden Expwy & SR 85 (S)/Almaden Plaza
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 6/14/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	34	1295	0	0	0	0	453	3334	11	358	10	371
Redist. of existing												
Approved Trips	0	24	0	0	0	0	16	49	0	37	0	23
Redist. of App Trips												
Background Volumes	34	1319	0	0	0	0	469	3383	11	395	10	394
Project Trips	0	19	0	0	0	0	0	10	0	0	0	1
Project Conditions	34	1338	0	0	0	0	469	3393	11	395	10	395
Future Growth Conditions	35	1390	0	0	0	0	487	3526	11	409	10	410

99-083

5522

Intersection Name: Almaden Expwy & SR 85 (N)
Peak Hour: PM — Date of Analysis: 6/20/00
Scenario: — Count Date: 10/1/98
(SJ) Growth Factor: 0.003 — Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	0	3104	0	391	0	609	0	1891	0	0		0
Redist. of existing												
Approved Trips	0	237	0	78	0	16	0	164	0	0	0	0
Redist. of App Trips												
Background Volumes	0	3341	0	469	0	625	0	2055	0	0	0	0
Project Trips	1	10	0	0	0	0	0	21	0	0	0	0
Project Conditions	1	3351	0	469	0	625	0	2076	0	0	0	0
Future Growth Conditions	1	3475	0	485	0	649	0	2152	0	0	0	0

5523

Intersection Name: Almaden Expwy & SR 85 (S)/Almaden Plaza
Peak Hour: PM — Date of Analysis: 6/20/00
Scenario: — Count Date: 10/1/98
(SJ) Growth Factor: 0.003 — Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	449	2792	0	0	0	0	350	2008	62	1056	63	624
Redist. of existing												
Approved Trips	0	117	0	0	0	0	3	102	0	16	0	103
Redist. of App Trips												
Background Volumes	449	2909	0	0	0	0	353	2110	62	1072	63	727
Project Trips	0	10	0	0	0	0	0	19	0	0	0	2
Project Conditions	449	2919	0	0	0	0	353	2129	62	1072	63	729
Future Growth Conditions	467	3031	0	0	0	0	367	2209	64	1114	66	754

99-083

5737

Intersection Name: Old Almaden Rd & Foxworthy Ave
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 12/18/96
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	9	13	0	0	0	0	0	656	308	124	0	11
Redist. of existing		-10	10	322	138	24	0	-322	-138	-124	260	0
Existing Rubino Trips (60% occ.)		0	0	17	40	12	0	0	0	0	0	0
Approved Trips (40% of Rubino)		0	0	11	26	7	0	0	0	0	0	0
Redist. of App Trips												
Background Volumes	9	3	10	350	204	43	0	334	170	0	260	11
Project Trips	0	0	0	0	101	0	0	0	0	0	51	0
Project Conditions	9	3	10	350	305	43	0	334	170	0	311	11
Future Growth Conditions	9	4	10	350	305	43	0	360	182	5	311	11

5727

Intersection Name: Vistapark Dr/Proj. En & Hillsdale Ave.
Peak Hour: AM — Date of Analysis: 6/20/00
Scenario: — Count Date: 6/20/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year: 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	0	0	0	0	287	25	46	0	62	21	179	0
Redist. of existing												
Approved Trips	0	0	0	0	0	0	0	0	0	0	26	0
Redist of App Trips												
Background Volumes	0	0	0	0	287	25	46	0	62	21	205	0
Project Trips	160	26	2	1	1	0	0	14	12	0	2	85
Project Conditions	160	26	2	1	288	25	46	14	74	21	207	85
Future Growth Conditions	160	26	2	1	299	26	48	14	76	22	214	85

99-083

5737

Intersection Name: Old Almaden Rd & Foxworthy Ave
Peak Hour: PM — Date of Analysis: 6/20/00
Scenario: — Count Date: 12/18/96
(SJ) Growth Factor: 0.003 — Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	12	14	0	0	0	0	0	137	174	248	0	18
Redist. of existing	0	-5	5	73	93	9	0	-73	-93	-248	338	0
Existing Rubino Trips (60% occ.)		0	0	0	0	0	0	0	0	0	66	0
Approved Trips (40% of Rubino)		0	0	0	0	0	0	0	0	0	44	0
Redist. of App Trips												
Background Volumes	12	9	5	73	93	9	0	64	81	0	448	18
Project Trips	0	0	0	0	54	0	0	0	0	0	96	0
Project Conditions	12	9	5	73	147	9	0	64	81	0	544	18
Future Growth Conditions	12	10	5	73	147	9	0	69	88	10	544	19

5727

Intersection Name: Vistapark Dr/Proj. En & Hillsdale Ave.
Peak Hour: PM — Date of Analysis: 6/20/00
Scenario: — Count Date: 6/20/00
(SJ) Growth Factor: 0.003 — Future Growth % Per Year 0.020
(SJ) Number of Months: 0.0 — Number of Years to Buildout: 2.0

	Movements											
	North Approach			East Approach			South Approach			West Approach		
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
Existing	0	0	0	0	274	38	52	0	50	68	223	0
Redist. of existing												
Approved Trips	0	0	0	0	26	0	0	0	0	0	0	0
Redist. of App Trips												
Background Volumes	0	0	0	0	300	38	52	0	50	68	223	0
Project Trips	85	14	1	2	2	0	0	26	23	0	1	161
Project Conditions	85	14	1	2	302	38	52	26	73	68	224	161
Future Growth Conditions	85	14	1	2	313	40	54	26	75	71	233	161

99-083

Appendix D

Level of Service Calculations

99-083

Communications Hill
765 Dwelling Units

Summary Scenario Comparison Report (With Average Critical Delay)
Future Volume Alternative

Intersection		Existing (PM)				Background (PM)				Project (PM)						Future (PM)			
		LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Crit V/C Change	Avg Crit Del (sec)	Avg Crit Del Change	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)
#3091	CAPITOL EXPWY/MONTEREY (N)	B	10.3	0.496	6.4	B	11.9	0.546	8.1	B	12.2	0.546	+0.000	8.1	+0.0	B	12.2	0.566	8.2
#3092	CAPITOL EXPWY/MONTEREY (S)	B	8.7	0.485	5.1	B	9.2	0.527	5.5	B	9.4	0.529	+0.002	5.7	+0.2	B	9.5	0.549	5.8
#3120	CAPITOL/PEARL	D	25.8	0.584	29.2	D+	25.5	0.606	29.5	D+	25.5	0.616	+0.010	29.5	+0.0	D+	25.9	0.640	30.0
#3201	85/ALMADEN PLAZA	B	8.5	0.546	8.6	B	8.7	0.589	8.7	B	8.7	0.590	+0.001	8.7	+0.0	B	8.8	0.612	8.9
#3208	87/NARVAEZ	B	9.4	0.490	8.8	B	9.7	0.523	8.9	B	10.7	0.561	+0.038	10.5	+1.5	B	10.9	0.581	10.8
#3587	HILLSDALE/PEARL (FUT)	B	14.5	0.273	14.2	C	17.5	0.381	18.4	C	17.8	0.426	+0.045	19.1	+0.7	C	17.9	0.441	19.1
#3849	HILLSDALE/NARVAEZ (FUT)	B	15.0	0.192	21.5	C	21.5	0.304	24.1	C-	24.4	0.481	+0.176	26.8	+2.6	C	24.4	0.493	26.9
#5506	ALMADEN/FOXWORTHY	C	16.9	0.730	14.8	C	21.1	0.644	18.2	C	22.6	0.656	+0.011	19.3	+1.0	C	22.9	0.681	19.7
#5512	ALMADEN/BRANHAM	E	42.7	0.804	39.7	E+	43.9	0.831	42.5	E+	43.9	0.833	+0.002	42.5	+0.0	E	46.0	0.866	45.9
#5513	ALMADEN/BLOSSOM HILL	F	122.6	0.961	183.3	F	145.5	1.013	224.8	F	146.4	1.014	+0.002	224.4	-0.3	F	168.9	1.053	262.4
#5521	ALMADEN/CHERRY	C	24.5	0.717	24.2	D	33.0	0.901	39.0	D	33.1	0.903	+0.002	39.1	+0.1	F	101.9	0.757	25.2
#5522	85/ALMADEN (N)	C	18.2	0.661	23.1	C	20.4	0.705	26.2	C	20.4	0.713	+0.007	26.2	+0.1	C	23.0	0.739	29.8
#5523	85/ALMADEN (S)	F	167.5	1.090	269.3	F	173.1	1.116	281.7	F	172.5	1.118	+0.001	281.1	-0.5	F	198.7	1.161	326.0
#5708	COPPERFIELD/CAPITOL	B	9.5	0.425	17.6	B	10.0	0.464	18.5	B	10.0	0.465	+0.001	18.5	-0.0	B	10.1	0.482	18.6
#5711	CAPITOL/NARVAEZ	D	28.0	0.526	33.6	D	28.3	0.577	33.8	D	30.0	0.627	+0.051	39.0	+5.2	D	30.4	0.647	39.3
#5712	VISTA PARK/CAPITOL	C	18.0	0.598	21.0	C	20.2	0.647	22.4	C	20.5	0.658	+0.011	23.1	+0.7	C	21.0	0.682	23.6
#5713	87/CAPITOL	D	35.5	0.776	48.0	E	47.8	0.834	66.2	F	71.7	0.886	+0.052	99.7	+33.5	F	82.1	0.917	114.9
#5715	CAPITOL/SNELL	D	27.1	0.373	21.6	D+	25.7	0.581	32.0	D+	25.7	0.588	+0.006	32.0	+0.0	D+	28.1	0.609	32.4
#5737	Old Almaden/Foxworthy	B	13.4	0.357	13.5	B	10.8	0.239	11.3	B	9.9	0.269	+0.030	10.5	-0.8	B	10.3	0.280	10.9

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans ... San Jose

Communications Hill
765 Dwelling Units

Summary Scenario Comparison Report (With Average Critical Delay)
Future Volume Alternative

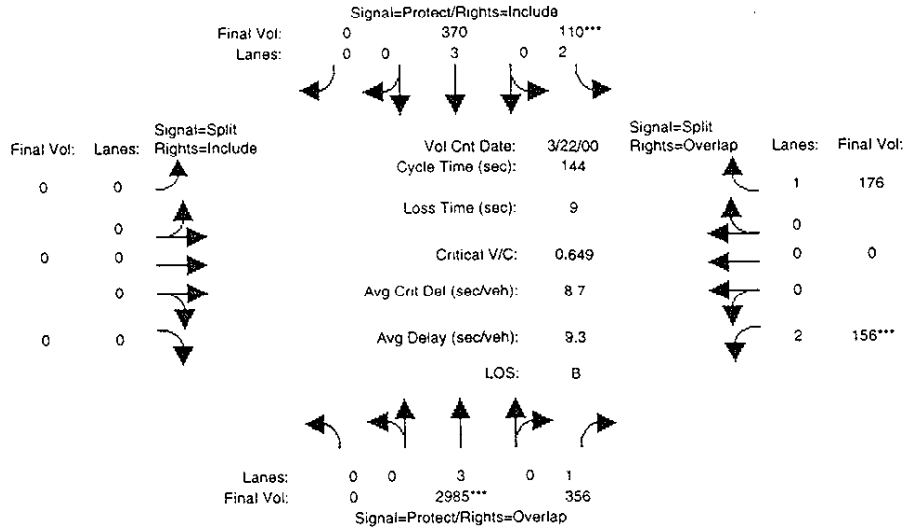
Intersection		Existing (AM)				Background (AM)				Project (AM)						Future (AM)			
		LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Crit V/C Change	Avg Crit Del (sec)	Avg Crit Del Change	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)
#3091	CAPITOL EXPWY/MONTEREY (N)	B	9.3	0.649	8.7	B-	13.7	0.763	15.8	B-	14.0	0.770	+0.007	16.1	+0.3	B-	14.4	0.796	16.7
#3092	CAPITOL EXPWY/MONTEREY (S)	D	25.8	0.908	29.8	D	29.2	0.968	36.5	D	31.0	0.981	+0.013	39.0	+2.4	D-	37.3	1.017	47.7
#3120	CAPITOL/PEARL	E	46.4	0.936	54.0	D	34.2	0.732	35.8	D	34.3	0.740	+0.009	35.9	+0.1	D	35.3	0.778	37.5
#3201	85/ALMADEN PLAZA	A	4.6	0.278	4.0	A	4.6	0.301	4.1	A	4.6	0.302	+0.000	4.1	+0.0	A	4.6	0.313	4.1
#3208	87/NARVAEZ	B	9.5	0.372	8.3	B	11.8	0.422	8.6	B	12.5	0.641	+0.219	13.8	+5.1	B	12.6	0.660	14.0
#3587	HILLSDALE/PEARL (FUT)	C	18.6	0.266	17.6	C	18.4	0.275	17.9	C	18.7	0.281	+0.005	18.5	+0.5	C	18.8	0.291	18.8
#3849	HILLSDALE/NARVAEZ (FUT)	B	14.6	0.184	21.4	C	21.2	0.228	23.5	C-	24.2	0.422	+0.194	25.0	+1.5	C-	24.3	0.430	25.1
#5506	ALMADEN/FOXWORTHY	C	15.2	0.781	11.4	D+	25.3	0.891	24.1	D	29.6	0.932	+0.041	29.8	+5.7	D	32.2	0.963	33.3
#5512	ALMADEN/BRANHAM	F	75.3	1.096	89.8	F	76.9	1.100	91.7	F	77.7	1.104	+0.003	93.5	+1.8	F	94.5	1.147	117.9
#5513	ALMADEN/BLOSSOM HILL	E	42.6	0.916	46.7	E+	43.7	0.933	48.5	E+	43.8	0.936	+0.003	48.9	+0.4	E	47.3	0.972	54.1
#5521	ALMADEN/CHERRY	C	18.6	0.741	14.1	C	19.0	0.759	14.4	C	19.0	0.761	+0.002	14.5	+0.1	C	19.6	0.790	15.2
#5522	85/ALMADEN (N)	B	5.4	0.607	7.5	B+	5.7	0.618	8.0	B+	5.7	0.620	+0.002	8.0	-0.0	B+	5.8	0.644	8.2
#5523	85/ALMADEN (S)	B	14.2	0.274	17.8	B-	14.9	0.282	18.2	B-	14.8	0.285	+0.003	18.2	-0.1	C+	15.1	0.296	18.2
#5708	COPPERFIELD/CAPITOL	B	7.0	0.565	8.5	B	7.7	0.600	9.4	B	7.7	0.601	+0.000	9.4	-0.0	B	7.8	0.623	9.6
#5711	CAPITOL/NARVAEZ	D	25.2	0.687	31.6	D+	25.5	0.731	32.4	D	29.9	0.819	+0.088	37.7	+5.2	D	30.7	0.846	38.9
#5712	VISTA PARK/CAPITOL	C	16.7	0.564	16.8	C	17.5	0.607	17.7	C	17.6	0.608	+0.000	17.7	-0.0	C	18.0	0.630	18.1
#5713	87/CAPITOL	C	22.4	0.528	15.8	C-	23.4	0.565	16.7	D+	25.1	0.597	+0.032	42.2	+25.4	D+	25.3	0.619	18.4
#5715	CAPITOL/SNELL	D	32.5	0.703	33.8	D	33.9	0.755	35.7	D	33.9	0.761	+0.006	35.8	+0.0	D	34.5	0.789	36.7
#5737	Old Almaden/Foxworthy	B	8.3	0.673	8.5	C+	16.2	0.545	15.8	C+	16.8	0.545	+0.000	15.8	+0.0	C	17.2	0.569	15.9

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #3091: CAPITOL EXPWY/MONTEREY (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module: >> Count Date: 22 Mar 2000 << 0.703												
Base Vol:	0	2985	356	110	370	0	0	0	0	156	0	176
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2985	356	110	370	0	0	0	0	156	0	176
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2985	356	110	370	0	0	0	0	156	0	176
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2985	356	110	370	0	0	0	0	156	0	176
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2985	356	110	370	0	0	0	0	156	0	176
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	2985	356	110	370	0	0	0	0	156	0	176
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	3150	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.52	0.20	0.03	0.06	0.00	0.00	0.00	0.00	0.05	0.00	0.10
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.80	0.88	0.05	0.86	0.00	0.00	0.00	0.00	0.08	0.00	0.13
Volume/Cap:	0.00	0.65	0.23	0.65	0.08	0.00	0.00	0.00	0.00	0.62	0.00	0.75
Delay/Veh:	0.0	4.6	0.9	56.6	1.2	0.0	0.0	0.0	0.0	52.0	0.0	54.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	4.6	0.9	56.6	1.2	0.0	0.0	0.0	0.0	52.0	0.0	54.4
DesignQueue:	0	54	3	8	4	0	0	0	0	12	0	13

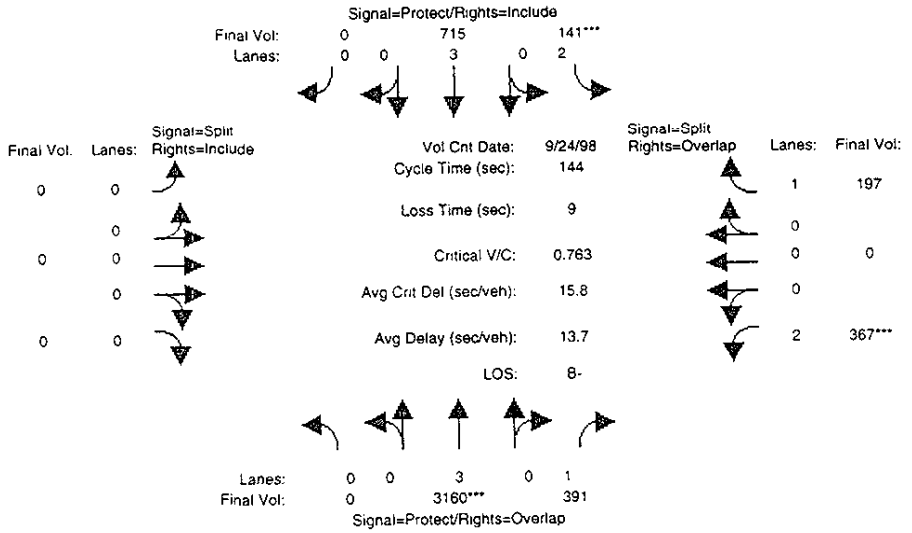
99-088

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #3091: CAPITOL EXPWY/MONTEREY (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module: >> Count Date: 24 Sep 1998 << 0.703												
Base Vol:	0	3160	391	141	715	0	0	0	0	367	0	197
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3160	391	141	715	0	0	0	0	367	0	197
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3160	391	141	715	0	0	0	0	367	0	197
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3160	391	141	715	0	0	0	0	367	0	197
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3160	391	141	715	0	0	0	0	367	0	197
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	3160	391	141	715	0	0	0	0	367	0	197
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	3150	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.55	0.22	0.04	0.13	0.00	0.00	0.00	0.00	0.12	0.00	0.11
Crit Moves:		****		****						****		
Green Time:	0.0	105	126.6	8.4	113	0.0	0.0	0.0	0.0	22.0	0.0	30.4
Volume/Cap:	0.00	0.76	0.25	0.76	0.16	0.00	0.00	0.00	0.00	0.76	0.00	0.53
Delay/Veh:	0.0	9.8	1.1	62.1	2.9	0.0	0.0	0.0	0.0	49.4	0.0	39.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.8	1.1	62.1	2.9	0.0	0.0	0.0	0.0	49.4	0.0	39.5
DesignQueue:	0	81	4	11	13	0	0	0	0	26	0	13

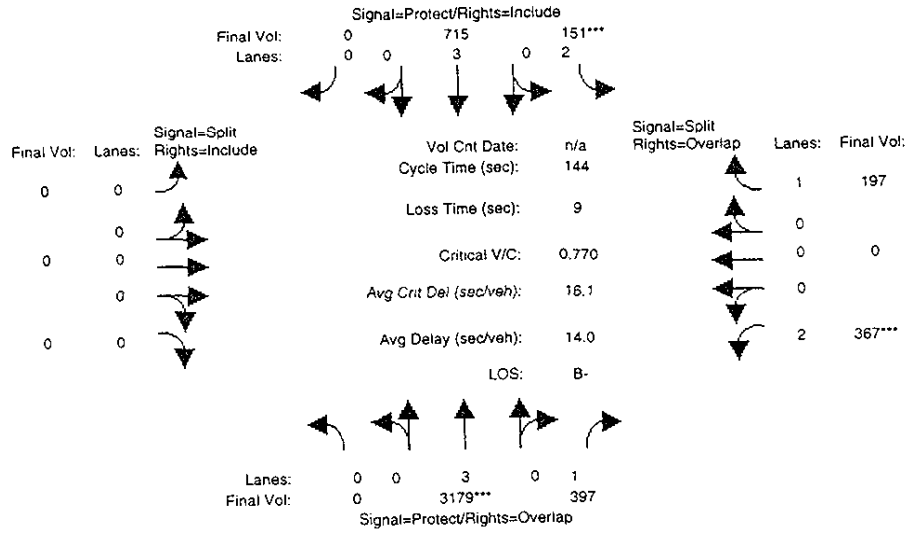
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #3091: CAPITOL EXPWY/MONTEREY (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	3160	391	141	715	0	0	0	0	367	0	197
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3160	391	141	715	0	0	0	0	367	0	197
Added Vol:	0	19	6	10	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3179	397	151	715	0	0	0	0	367	0	197
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3179	397	151	715	0	0	0	0	367	0	197
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3179	397	151	715	0	0	0	0	367	0	197
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	3179	397	151	715	0	0	0	0	367	0	197
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	3150	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.56	0.23	0.05	0.13	0.00	0.00	0.00	0.00	0.12	0.00	0.11
Crit Moves:		****		****						****		
Green Time:	0.0	104	126.0	9.0	113	0.0	0.0	0.0	0.0	21.8	0.0	30.7
Volume/Cap:	0.00	0.77	0.26	0.77	0.16	0.00	0.00	0.00	0.00	0.77	0.00	0.53
Delay/Veh:	0.0	10.1	1.1	61.9	2.9	0.0	0.0	0.0	0.0	49.8	0.0	39.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	10.1	1.1	61.9	2.9	0.0	0.0	0.0	0.0	49.8	0.0	39.3
DesignQueue:	0	82	4	11	13	0	0	0	0	26	0	13

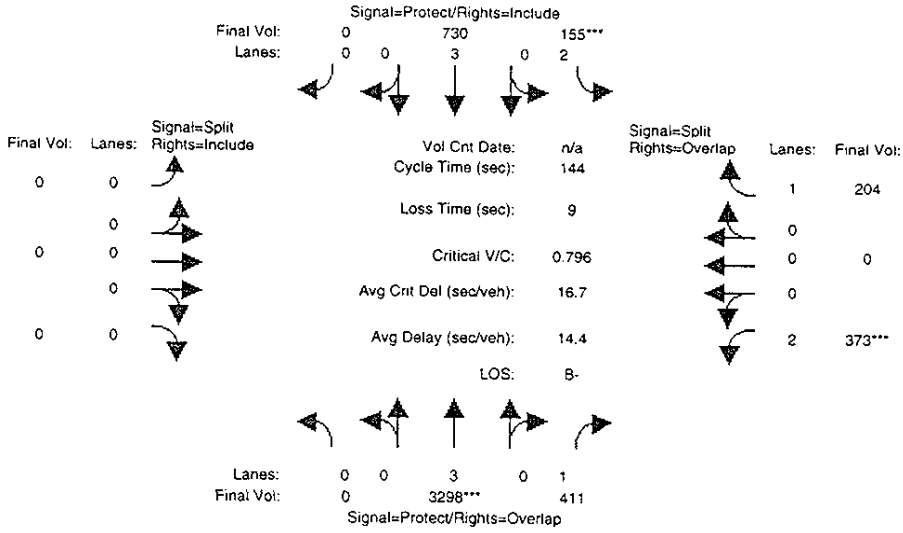
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #3091: CAPITOL EXPWY/MONTEREY (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	3298	411	155	730	0	0	0	0	373	0	204
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3298	411	155	730	0	0	0	0	373	0	204
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3298	411	155	730	0	0	0	0	373	0	204
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3298	411	155	730	0	0	0	0	373	0	204
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3298	411	155	730	0	0	0	0	373	0	204
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	3298	411	155	730	0	0	0	0	373	0	204
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	3150	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.58	0.23	0.05	0.13	0.00	0.00	0.00	0.00	0.12	0.00	0.12
Crit Moves:		****		****						****		
Green Time:	0.0	105	126.1	8.9	114	0.0	0.0	0.0	0.0	21.4	0.0	30.3
Volume/Cap:	0.00	0.80	0.27	0.80	0.16	0.00	0.00	0.00	0.00	0.80	0.00	0.55
Delay/Veh:	0.0	10.5	1.1	64.2	2.8	0.0	0.0	0.0	0.0	51.4	0.0	40.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	10.5	1.1	64.2	2.8	0.0	0.0	0.0	0.0	51.4	0.0	40.0
DesignQueue:	0	85	4	12	13	0	0	0	0	26	0	13

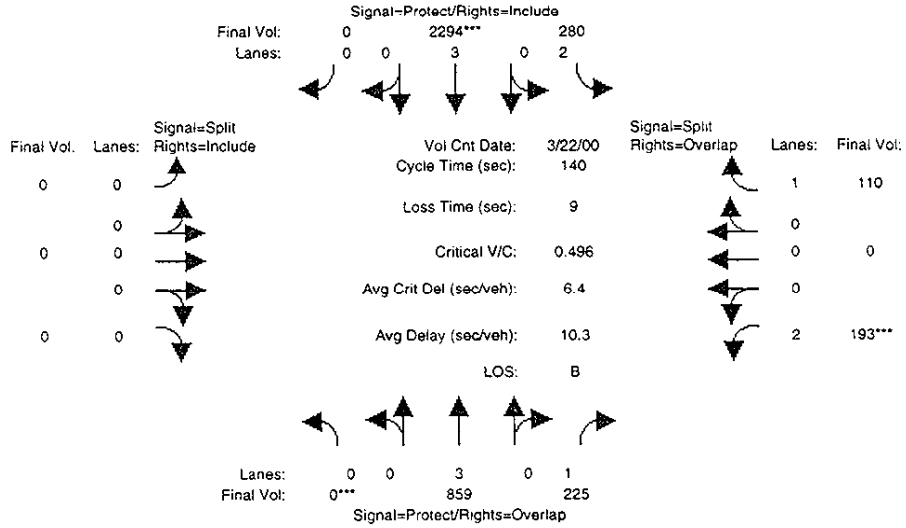
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #3091: CAPITOL EXPWY/MONTEREY (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module: >> Count Date: 22 Mar 2000 <<												
Base Vol:	0	859	225	280	2294	0	0	0	0	193	0	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	859	225	280	2294	0	0	0	0	193	0	110
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	859	225	280	2294	0	0	0	0	193	0	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	859	225	280	2294	0	0	0	0	193	0	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	859	225	280	2294	0	0	0	0	193	0	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	859	225	280	2294	0	0	0	0	193	0	110
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	3150	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.13	0.09	0.40	0.00	0.00	0.00	0.00	0.06	0.00	0.06
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.51	0.63	0.30	0.81	0.00	0.00	0.00	0.00	0.12	0.00	0.42
Volume/Cap:	0.00	0.30	0.20	0.30	0.50	0.00	0.00	0.00	0.00	0.50	0.00	0.15
Delay/Veh:	0.0	15.0	8.2	28.6	3.2	0.0	0.0	0.0	0.0	44.4	0.0	18.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	15.0	8.2	28.6	3.2	0.0	0.0	0.0	0.0	44.4	0.0	18.8
DesignQueue:	0	34	7	16	38	0	0	0	0	13	0	5

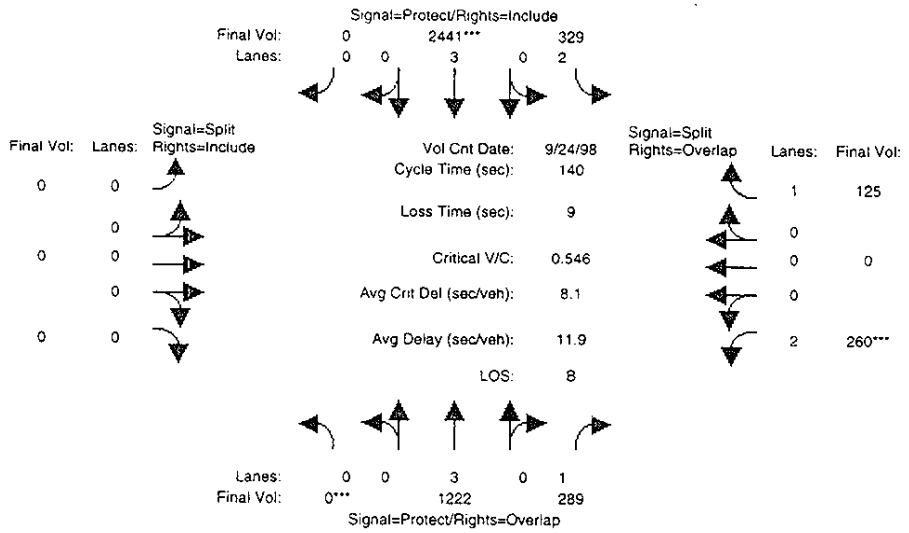
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #3091: CAPITOL EXPWY/MONTEREY (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module: >> Count Date: 24 Sep 1998 <<												
Base Vol:	0	1222	289	329	2441	0	0	0	0	260	0	125
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1222	289	329	2441	0	0	0	0	260	0	125
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1222	289	329	2441	0	0	0	0	260	0	125
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1222	289	329	2441	0	0	0	0	260	0	125
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1222	289	329	2441	0	0	0	0	260	0	125
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	1222	289	329	2441	0	0	0	0	260	0	125
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	3150	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.17	0.10	0.43	0.00	0.00	0.00	0.00	0.08	0.00	0.07
Crit Moves:	****				****					****		
Green Time:	0.0	73.9	95.0	36.0	110	0.0	0.0	0.0	0.0	21.2	0.0	57.1
Volume/Cap:	0.00	0.41	0.24	0.41	0.55	0.00	0.00	0.00	0.00	0.55	0.00	0.17
Delay/Veh:	0.0	15.2	6.6	33.0	4.4	0.0	0.0	0.0	0.0	42.8	0.0	20.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	15.2	6.6	33.0	4.4	0.0	0.0	0.0	0.0	42.8	0.0	20.1
DesignQueue:	0	48	8	19	46	0	0	0	0	17	0	6

99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #3091: CAPITOL EXPWY/MONTEREY (N)

Signal=Protect/Rights=Include

Final Vol:	0		2441***		348
Lanes:	0	0	3	0	2

Final Vol:	Lanes:	Signal=Split Rights=Include
0	0	
	0	
0	0	
	0	
0	0	

Vol Cnt Date:	n/a
Cycle Time (sec):	140
Loss Time (sec):	9
Critical V/C:	0.546
Avg Crit Del (sec/veh):	8.1
Avg Delay (sec/veh):	12.2
LOS:	B

Signal=Split Rights=Overlap	Lanes:	Final Vol:
	1	125
	0	
	0	0
	0	
	2	260***

Lanes:	0	0	3	0	1
Final Vol:	0***		1232		300

Signal=Protect/Rights=Overlap

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	1222	289	329	2441	0	0	0	0	260	0	125
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1222	289	329	2441	0	0	0	0	260	0	125
Added Vol:	0	10	11	19	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1232	300	348	2441	0	0	0	0	260	0	125
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1232	300	348	2441	0	0	0	0	260	0	125
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1232	300	348	2441	0	0	0	0	260	0	125
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	1232	300	348	2441	0	0	0	0	260	0	125
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	3150	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.17	0.11	0.43	0.00	0.00	0.00	0.00	0.08	0.00	0.07
Crit Moves:	****				****					****		
Green Time:	0.0	72.7	93.9	37.1	110	0.0	0.0	0.0	0.0	21.2	0.0	58.3
Volume/Cap:	0.00	0.42	0.26	0.42	0.55	0.00	0.00	0.00	0.00	0.55	0.00	0.17
Delay/Veh:	0.0	15.8	7.0	32.5	4.4	0.0	0.0	0.0	0.0	42.8	0.0	19.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	15.8	7.0	32.5	4.4	0.0	0.0	0.0	0.0	42.8	0.0	19.5
DesignQueue:	0	49	8	20	46	0	0	0	0	17	0	6

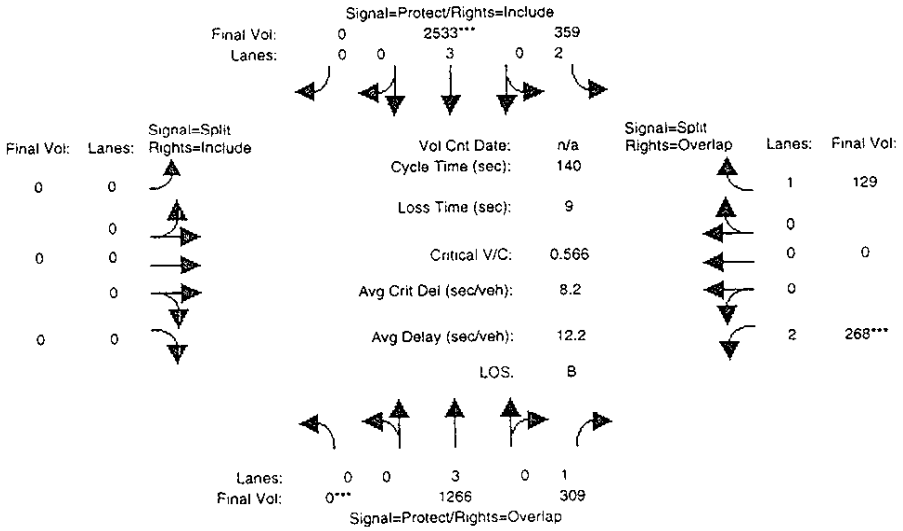
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #3091: CAPITOL EXPWY/MONTEREY (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	1266	309	359	2533	0	0	0	0	268	0	129
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1266	309	359	2533	0	0	0	0	268	0	129
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1266	309	359	2533	0	0	0	0	268	0	129
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1266	309	359	2533	0	0	0	0	268	0	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1266	309	359	2533	0	0	0	0	268	0	129
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	1266	309	359	2533	0	0	0	0	268	0	129
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	3150	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.18	0.11	0.44	0.00	0.00	0.00	0.00	0.09	0.00	0.07
Crit Moves:	****				****					****		
Green Time:	0.0	72.7	93.7	37.3	110	0.0	0.0	0.0	0.0	21.1	0.0	58.3
Volume/Cap:	0.00	0.43	0.26	0.43	0.57	0.00	0.00	0.00	0.00	0.57	0.00	0.18
Delay/Veh:	0.0	15.9	7.1	32.5	4.5	0.0	0.0	0.0	0.0	43.2	0.0	19.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	15.9	7.1	32.5	4.5	0.0	0.0	0.0	0.0	43.2	0.0	19.6
DesignQueue:	0	50	8	21	48	0	0	0	0	18	0	6

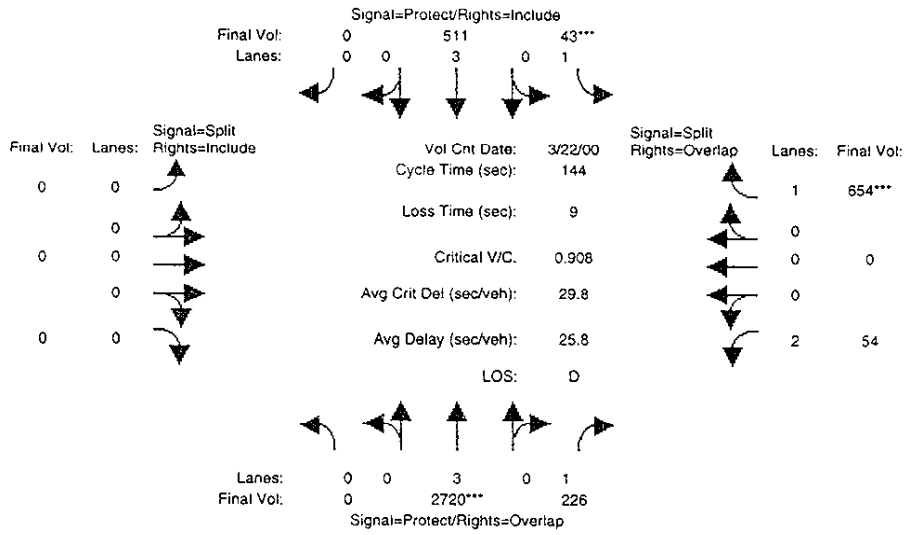
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #3092: CAPITOL EXPWY/MONTEREY (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module: >> Count Date: 22 Mar 2000 << 0.600												
Base Vol:	0	2720	226	43	511	0	0	0	0	54	0	654
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2720	226	43	511	0	0	0	0	54	0	654
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2720	226	43	511	0	0	0	0	54	0	654
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2720	226	43	511	0	0	0	0	54	0	654
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2720	226	43	511	0	0	0	0	54	0	654
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	2720	226	43	511	0	0	0	0	54	0	654
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	1750	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.48	0.13	0.02	0.09	0.00	0.00	0.00	0.00	0.02	0.00	0.37
Crit Moves:		****		****								****
Green/Cycle:	0.00	0.53	0.89	0.05	0.58	0.00	0.00	0.00	0.00	0.36	0.00	0.41
Volume/Cap:	0.00	0.90	0.15	0.51	0.16	0.00	0.00	0.00	0.00	0.05	0.00	0.91
Delay/Veh:	0.0	26.4	0.8	54.7	10.7	0.0	0.0	0.0	0.0	22.8	0.0	42.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	26.4	0.8	54.7	10.7	0.0	0.0	0.0	0.0	22.8	0.0	42.2
DesignQueue:	0	117	2	3	18	0	0	0	0	3	0	34

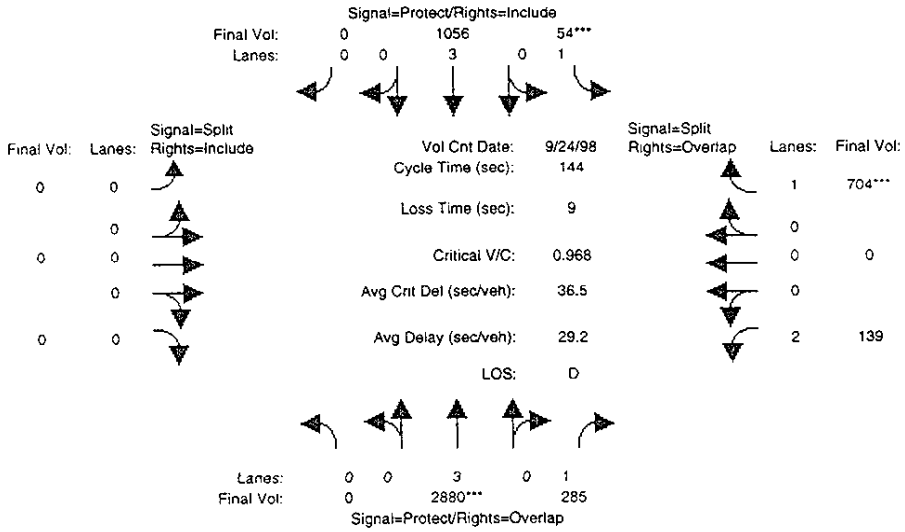
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #3092: CAPITOL EXPWY/MONTEREY (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module: >> Count Date: 24 Sep 1998 << 0.600												
Base Vol:	0	2880	285	54	1056	0	0	0	0	139	0	704
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2880	285	54	1056	0	0	0	0	139	0	704
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2880	285	54	1056	0	0	0	0	139	0	704
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2880	285	54	1056	0	0	0	0	139	0	704
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2880	285	54	1056	0	0	0	0	139	0	704
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	2880	285	54	1056	0	0	0	0	139	0	704
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	1750	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.51	0.16	0.03	0.19	0.00	0.00	0.00	0.00	0.04	0.00	0.40
Crit Moves:		****		****								****
Green Time:	0.0	75.3	128.0	7.0	82.3	0.0	0.0	0.0	0.0	52.7	0.0	59.7
Volume/Cap:	0.00	0.97	0.18	0.63	0.32	0.00	0.00	0.00	0.00	0.12	0.00	0.97
Delay/Veh:	0.0	32.6	0.8	60.7	12.4	0.0	0.0	0.0	0.0	23.0	0.0	50.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	32.6	0.8	60.7	12.4	0.0	0.0	0.0	0.0	23.0	0.0	50.8
DesignQueue:	0	127	3	4	38	0	0	0	0	7	0	37

99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #3092: CAPITOL EXPWY/MONTEREY (S)

Signal=Protect/Rights=Include

Final Vol:	0		1056		54***
Lanes:	0	0	3	0	1

Final Vol:	Lanes:	Signal=Split Rights=Include
0	0	
	0	
0	0	
	0	
0	0	

Vol Cnt Date:	n/a
Cycle Time (sec):	144
Loss Time (sec):	9
Critical V/C:	0.981
Avg Crit Del (sec/veh):	39.0
Avg Delay (sec/veh):	31.0
LOS:	D

Signal=Split Rights=Overlap	Lanes:	Final Vol:
	1	723***
	0	
	0	0
	0	
	2	150

Lanes:	0	0	3	0	1
Final Vol:	0		2886***		285

Signal=Protect/Rights=Overlap

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	2880	285	54	1056	0	0	0	0	139	0	704
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2880	285	54	1056	0	0	0	0	139	0	704
Added Vol:	0	6	0	0	0	0	0	0	0	11	0	19
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2886	285	54	1056	0	0	0	0	150	0	723
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2886	285	54	1056	0	0	0	0	150	0	723
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2886	285	54	1056	0	0	0	0	150	0	723
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	2886	285	54	1056	0	0	0	0	150	0	723
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	1750	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.51	0.16	0.03	0.19	0.00	0.00	0.00	0.00	0.05	0.00	0.41
Crit Moves:		****		****								****
Green Time:	0.0	74.4	128.0	7.0	81.4	0.0	0.0	0.0	0.0	53.6	0.0	60.6
Volume/Cap:	0.00	0.98	0.18	0.63	0.33	0.00	0.00	0.00	0.00	0.13	0.00	0.98
Delay/Veh:	0.0	35.1	0.8	60.7	12.7	0.0	0.0	0.0	0.0	22.7	0.0	52.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	35.1	0.8	60.7	12.7	0.0	0.0	0.0	0.0	22.7	0.0	52.9
DesignQueue:	0	129	3	4	39	0	0	0	0	8	0	37

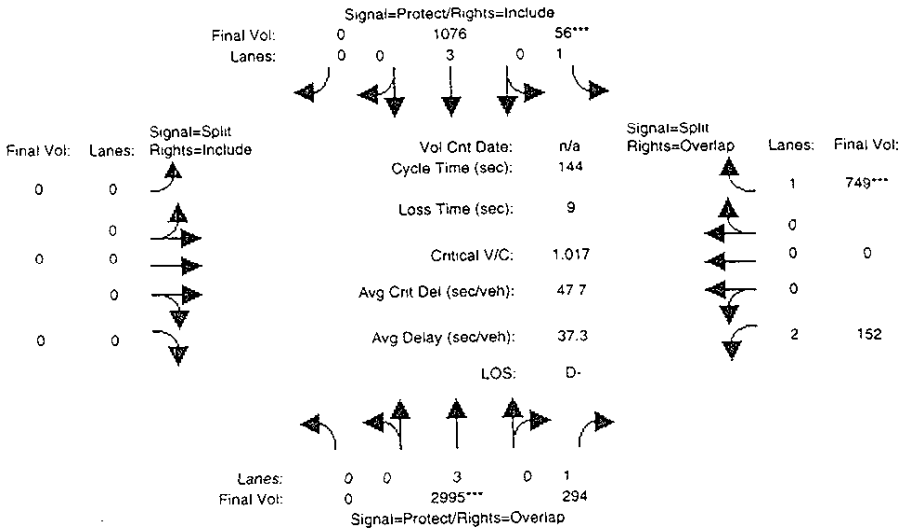
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #3092: CAPITOL EXPWY/MONTEREY (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	2995	294	56	1076	0	0	0	0	152	0	749
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2995	294	56	1076	0	0	0	0	152	0	749
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2995	294	56	1076	0	0	0	0	152	0	749
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2995	294	56	1076	0	0	0	0	152	0	749
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2995	294	56	1076	0	0	0	0	152	0	749
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	2995	294	56	1076	0	0	0	0	152	0	749
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	1750	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.53	0.17	0.03	0.19	0.00	0.00	0.00	0.00	0.05	0.00	0.43
Crit Moves:		****		****								****
Green Time:	0.0	74.3	128.0	7.0	81.3	0.0	0.0	0.0	0.0	53.7	0.0	60.7
Volume/Cap:	0.00	1.02	0.19	0.66	0.33	0.00	0.00	0.00	0.00	0.13	0.00	1.02
Delay/Veh:	0.0	43.9	0.8	62.3	12.8	0.0	0.0	0.0	0.0	22.6	0.0	61.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	43.9	0.8	62.3	12.8	0.0	0.0	0.0	0.0	22.6	0.0	61.5
DesignQueue:	0	135	3	4	39	0	0	0	0	8	0	39

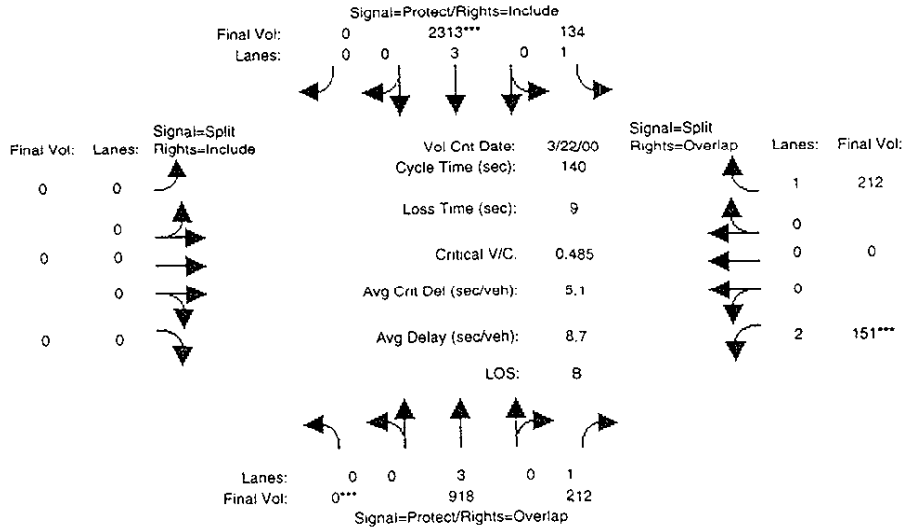
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #3092: CAPITOL EXPWY/MONTEREY (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module: >> Count Date: 22 Mar 2000 <<												
Base Vol:	0	918	212	134	2313	0	0	0	0	151	0	212
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	918	212	134	2313	0	0	0	0	151	0	212
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	918	212	134	2313	0	0	0	0	151	0	212
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	918	212	134	2313	0	0	0	0	151	0	212
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	918	212	134	2313	0	0	0	0	151	0	212
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	918	212	134	2313	0	0	0	0	151	0	212
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	1750	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.12	0.08	0.41	0.00	0.00	0.00	0.00	0.05	0.00	0.12
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.57	0.67	0.27	0.84	0.00	0.00	0.00	0.00	0.10	0.00	0.37
Volume/Cap:	0.00	0.28	0.18	0.28	0.48	0.00	0.00	0.00	0.00	0.48	0.00	0.33
Delay/Veh:	0.0	11.9	6.8	30.8	2.4	0.0	0.0	0.0	0.0	46.3	0.0	24.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	11.9	6.8	30.8	2.4	0.0	0.0	0.0	0.0	46.3	0.0	24.3
DesignQueue:	0	32	6	8	33	0	0	0	0	11	0	11

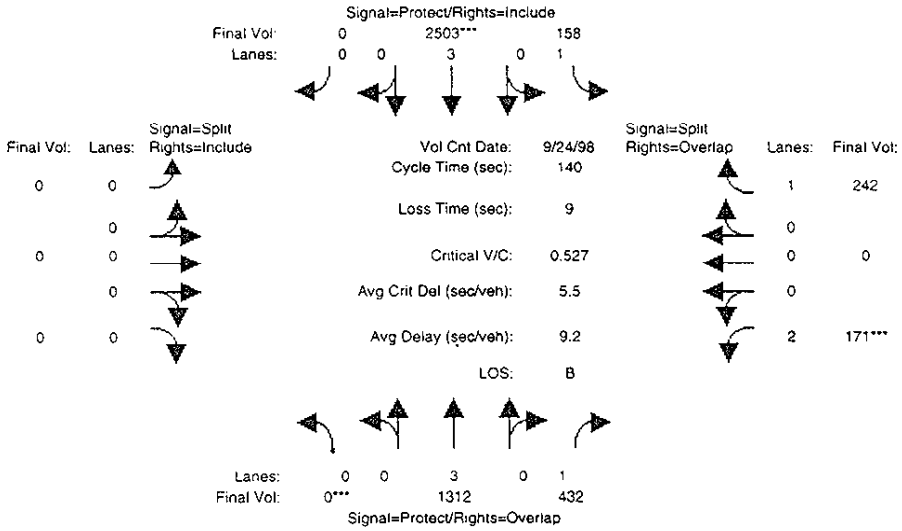
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #3092: CAPITOL EXPWY/MONTEREY (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module: >> Count Date: 24 Sep 1998 <<												
Base Vol:	0	1312	432	158	2503	0	0	0	0	171	0	242
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1312	432	158	2503	0	0	0	0	171	0	242
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1312	432	158	2503	0	0	0	0	171	0	242
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1312	432	158	2503	0	0	0	0	171	0	242
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1312	432	158	2503	0	0	0	0	171	0	242
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	1312	432	158	2503	0	0	0	0	171	0	242
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	1750	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.25	0.09	0.44	0.00	0.00	0.00	0.00	0.05	0.00	0.14
Crit Moves:	****				****					****		
Green Time:	0.0	83.7	98.2	32.8	117	0.0	0.0	0.0	0.0	14.4	0.0	47.3
Volume/Cap:	0.00	0.38	0.35	0.38	0.53	0.00	0.00	0.00	0.00	0.53	0.00	0.41
Delay/Veh:	0.0	11.2	6.4	34.6	2.7	0.0	0.0	0.0	0.0	46.6	0.0	27.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	11.2	6.4	34.6	2.7	0.0	0.0	0.0	0.0	46.6	0.0	27.4
DesignQueue:	0	44	11	10	37	0	0	0	0	12	0	13

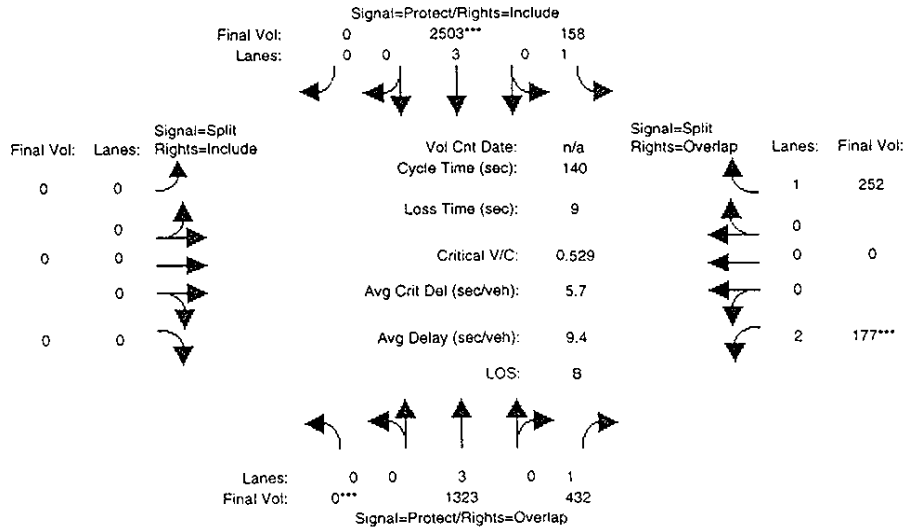
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #3092: CAPITOL EXPWY/MONTEREY (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	1312	432	158	2503	0	0	0	0	171	0	242
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1312	432	158	2503	0	0	0	0	171	0	242
Added Vol:	0	11	0	0	0	0	0	0	0	6	0	10
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1323	432	158	2503	0	0	0	0	177	0	252
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1323	432	158	2503	0	0	0	0	177	0	252
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1323	432	158	2503	0	0	0	0	177	0	252
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	1323	432	158	2503	0	0	0	0	177	0	252
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	1750	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.25	0.09	0.44	0.00	0.00	0.00	0.00	0.06	0.00	0.14
Crit Moves:	****				****					****		
Green Time:	0.0	83.6	98.5	32.5	116	0.0	0.0	0.0	0.0	14.9	0.0	47.4
Volume/Cap:	0.00	0.39	0.35	0.39	0.53	0.00	0.00	0.00	0.00	0.53	0.00	0.43
Delay/Veh:	0.0	11.3	6.3	34.8	2.8	0.0	0.0	0.0	0.0	46.3	0.0	27.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	11.3	6.3	34.8	2.8	0.0	0.0	0.0	0.0	46.3	0.0	27.5
DesignQueue:	0	44	11	10	38	0	0	0	0	12	0	13

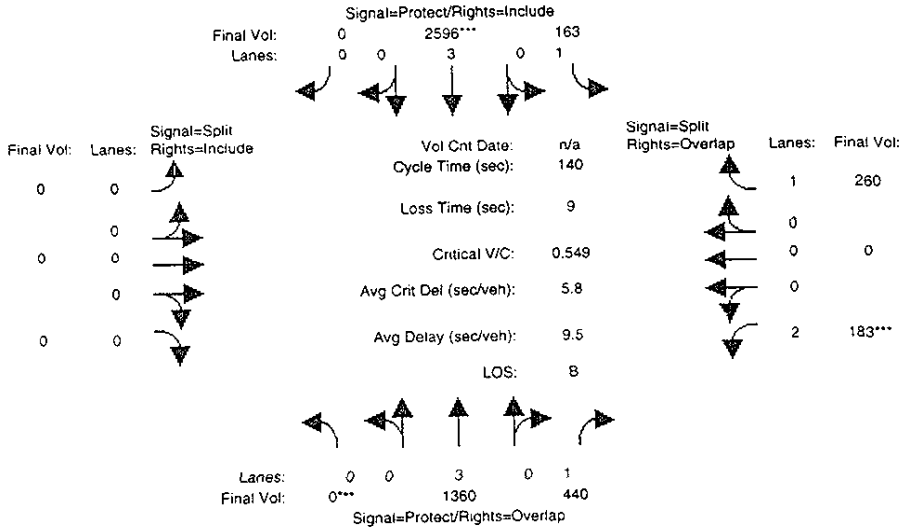
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #3092: CAPITOL EXPWY/MONTEREY (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	10	10	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	1360	440	163	2596	0	0	0	0	183	0	260
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1360	440	163	2596	0	0	0	0	183	0	260
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1360	440	163	2596	0	0	0	0	183	0	260
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1360	440	163	2596	0	0	0	0	183	0	260
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1360	440	163	2596	0	0	0	0	183	0	260
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	1360	440	163	2596	0	0	0	0	183	0	260
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	3.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	5700	1750	1750	5700	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.25	0.09	0.46	0.00	0.00	0.00	0.00	0.06	0.00	0.15
Crit Moves:	****				****					****		
Green Time:	0.0	83.6	98.4	32.6	116	0.0	0.0	0.0	0.0	14.8	0.0	47.4
Volume/Cap:	0.00	0.40	0.36	0.40	0.55	0.00	0.00	0.00	0.00	0.55	0.00	0.44
Delay/Veh:	0.0	11.4	6.4	34.9	2.9	0.0	0.0	0.0	0.0	46.6	0.0	27.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	11.4	6.4	34.9	2.9	0.0	0.0	0.0	0.0	46.6	0.0	27.7
DesignQueue:	0	46	11	10	39	0	0	0	0	13	0	14

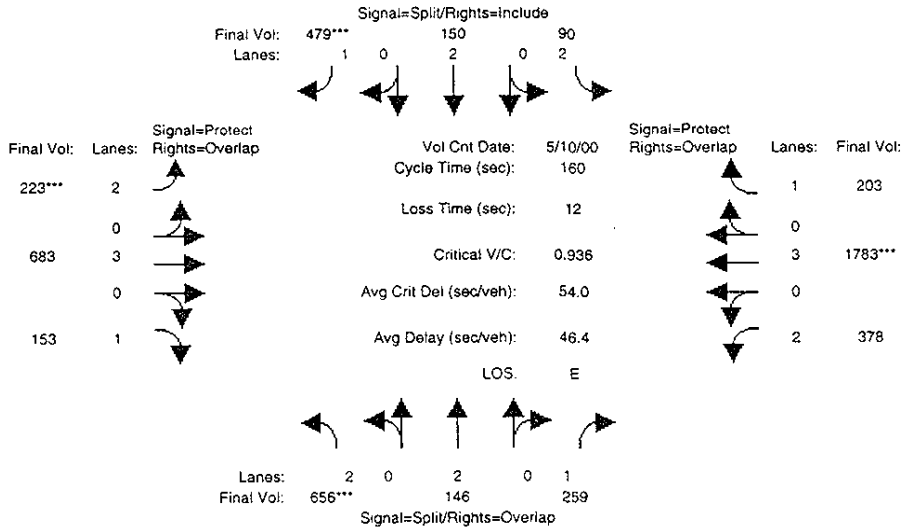
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #3120: CAPITOL/PEARL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 10 May 2000 <<												
Base Vol:	656	146	259	90	150	479	223	683	153	378	1783	203
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	656	146	259	90	150	479	223	683	153	378	1783	203
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	656	146	259	90	150	479	223	683	153	378	1783	203
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	656	146	259	90	150	479	223	683	153	378	1783	203
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	656	146	259	90	150	479	223	683	153	378	1783	203
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	656	146	259	90	150	479	223	683	153	378	1783	203
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.21	0.04	0.15	0.03	0.04	0.27	0.07	0.12	0.09	0.12	0.31	0.12
Crit Moves:	****					****	****				****	
Green/Cycle:	0.22	0.22	0.43	0.29	0.29	0.29	0.08	0.20	0.43	0.21	0.33	0.63
Volume/Cap:	0.94	0.17	0.35	0.10	0.13	0.94	0.94	0.59	0.20	0.59	0.94	0.19
Delay/Veh:	60.9	38.2	23.5	31.3	31.7	59.8	85.4	44.2	21.9	44.7	46.1	9.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.9	38.2	23.5	31.3	31.7	59.8	85.4	44.2	21.9	44.7	46.1	9.6
DesignQueue:	47	10	14	6	10	32	19	50	8	27	115	7

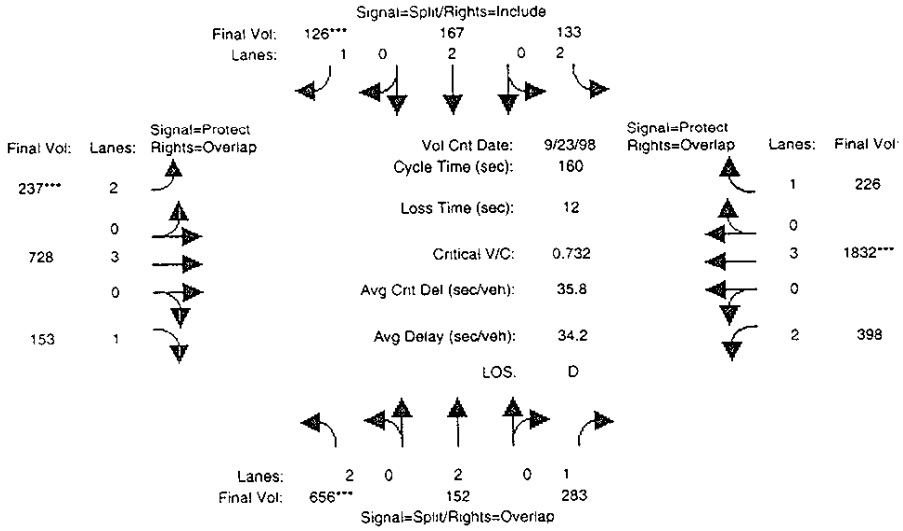
99-088

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #3120: CAPITOL/PEARL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 23 Sep 1998 <<												
Base Vol:	656	152	283	133	167	126	237	728	153	398	1832	226
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	656	152	283	133	167	126	237	728	153	398	1832	226
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	656	152	283	133	167	126	237	728	153	398	1832	226
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	656	152	283	133	167	126	237	728	153	398	1832	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	656	152	283	133	167	126	237	728	153	398	1832	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	656	152	283	133	167	126	237	728	153	398	1832	226
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.21	0.04	0.16	0.04	0.04	0.07	0.08	0.13	0.09	0.13	0.32	0.13
Crit Moves:	****					****	****				****	
Green Time:	45.5	45.5	88.7	15.7	15.7	15.7	16.5	43.6	89.1	43.1	70.3	86.0
Volume/Cap:	0.73	0.14	0.29	0.43	0.45	0.73	0.73	0.47	0.16	0.47	0.73	0.24
Delay/Veh:	41.5	32.4	14.5	52.2	52.3	63.1	58.5	37.1	13.1	37.4	29.0	15.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.5	32.4	14.5	52.2	52.3	63.1	58.5	37.1	13.1	37.4	29.0	15.0
DesignQueue:	44	10	12	11	14	10	19	49	6	27	100	10

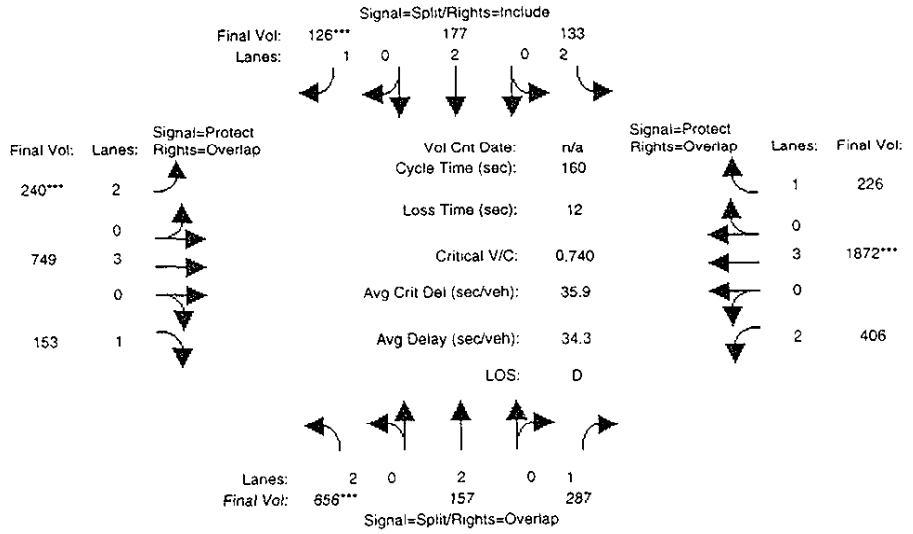
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #3120: CAPITOL/PEARL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	656	152	283	133	167	126	237	728	153	398	1832	226
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	656	152	283	133	167	126	237	728	153	398	1832	226
Added Vol:	0	5	4	0	10	0	3	21	0	8	40	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	656	157	287	133	177	126	240	749	153	406	1872	226
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	656	157	287	133	177	126	240	749	153	406	1872	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	656	157	287	133	177	126	240	749	153	406	1872	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	656	157	287	133	177	126	240	749	153	406	1872	226
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.21	0.04	0.16	0.04	0.05	0.07	0.08	0.13	0.09	0.13	0.33	0.13
Crit Moves:	****					****	****				****	
Green Time:	45.0	45.0	88.3	15.6	15.6	15.6	16.5	44.1	89.1	43.3	71.0	86.5
Volume/Cap:	0.74	0.15	0.30	0.43	0.48	0.74	0.74	0.48	0.16	0.48	0.74	0.24
Delay/Veh:	42.0	32.8	14.7	52.4	52.7	63.9	58.9	36.9	13.1	37.5	28.9	14.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.0	32.8	14.7	52.4	52.7	63.9	58.9	36.9	13.1	37.5	28.9	14.7
DesignQueue:	44	10	12	11	14	10	19	50	6	27	101	10

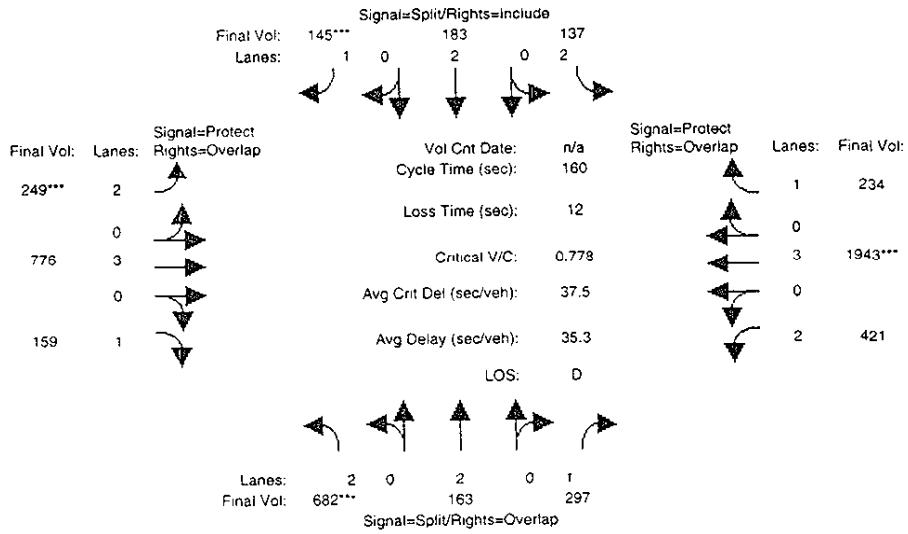
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
- Future (AM)

Intersection #3120: CAPITOL/PEARL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	682	163	297	137	183	145	249	776	159	421	1943	234
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	682	163	297	137	183	145	249	776	159	421	1943	234
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	682	163	297	137	183	145	249	776	159	421	1943	234
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	682	163	297	137	183	145	249	776	159	421	1943	234
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	682	163	297	137	183	145	249	776	159	421	1943	234
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	682	163	297	137	183	145	249	776	159	421	1943	234
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.22	0.04	0.17	0.04	0.05	0.08	0.08	0.14	0.09	0.13	0.34	0.13
Crit Moves:	****					****	****				****	
Green Time:	44.5	44.5	87.4	17.0	17.0	17.0	16.3	43.6	88.1	42.8	70.1	87.2
Volume/Cap:	0.78	0.15	0.31	0.41	0.45	0.78	0.78	0.50	0.16	0.50	0.78	0.25
Delay/Veh:	43.5	33.1	15.2	51.2	51.6	65.3	61.1	37.5	13.5	38.1	30.2	14.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.5	33.1	15.2	51.2	51.6	65.3	61.1	37.5	13.5	38.1	30.2	14.6
DesignQueue:	46	11	13	11	15	12	20	52	6	28	107	10

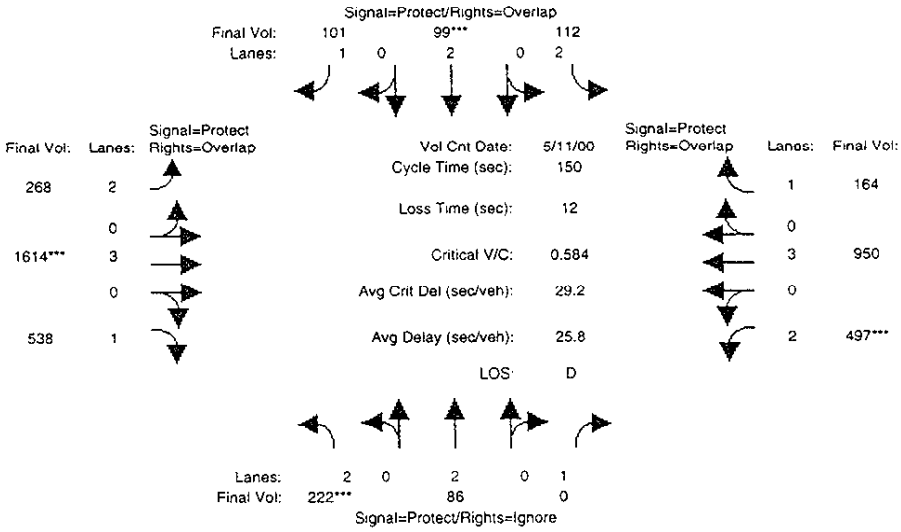
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #3120: CAPITOL/PEARL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 11 May 2000 <<												
Base Vol:	222	86	236	112	99	101	268	1614	538	497	950	164
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	86	0	112	99	101	268	1614	538	497	950	164
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	222	86	0	112	99	101	268	1614	538	497	950	164
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	222	86	0	112	99	101	268	1614	538	497	950	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	222	86	0	112	99	101	268	1614	538	497	950	164
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	222	86	0	112	99	101	268	1614	538	497	950	164
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.02	0.00	0.04	0.03	0.06	0.09	0.28	0.31	0.16	0.17	0.09
Crit Moves:	****				****			****		****		
Green/Cycle:	0.12	0.11	0.00	0.08	0.07	0.32	0.25	0.47	0.59	0.26	0.49	0.56
Volume/Cap:	0.60	0.21	0.00	0.47	0.39	0.18	0.34	0.60	0.52	0.60	0.34	0.17
Delay/Veh:	49.7	46.4	0.0	51.6	51.5	28.4	35.3	22.4	14.2	37.6	18.0	12.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.7	46.4	0.0	51.6	51.5	28.4	35.3	22.4	14.2	37.6	18.0	12.0
DesignQueue:	17	6	0	9	8	6	17	77	20	32	42	6

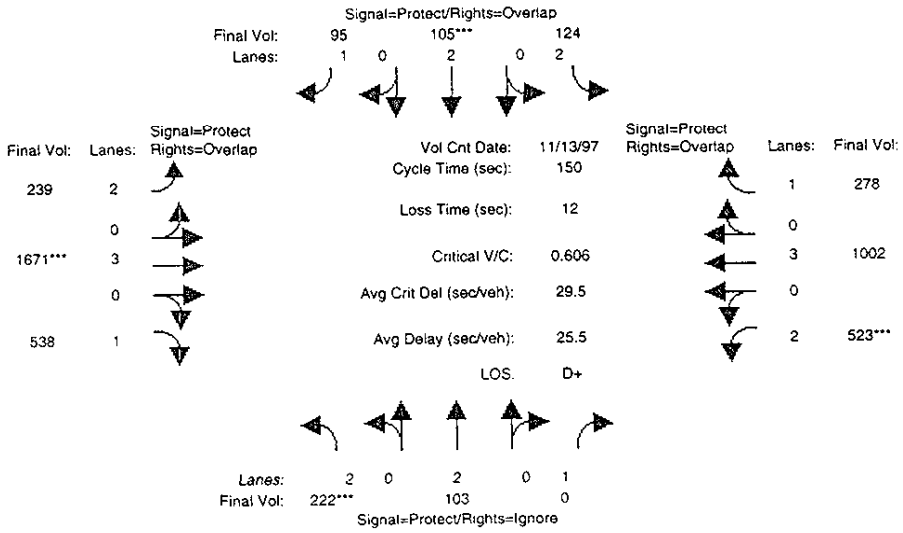
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #3120: CAPITOL/PEARL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 13 Nov 1997 <<												
Base Vol:	222	103	261	124	105	95	239	1671	538	523	1002	278
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	103	0	124	105	95	239	1671	538	523	1002	278
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	222	103	0	124	105	95	239	1671	538	523	1002	278
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	222	103	0	124	105	95	239	1671	538	523	1002	278
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	222	103	0	124	105	95	239	1671	538	523	1002	278
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	222	103	0	124	105	95	239	1671	538	523	1002	278
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.03	0.00	0.04	0.03	0.05	0.08	0.29	0.31	0.17	0.18	0.16
Crit Moves:	****				****			****		****		
Green Time:	17.0	15.9	0.0	11.1	10.0	43.5	33.5	70.8	87.9	40.1	77.5	88.6
Volume/Cap:	0.62	0.26	0.00	0.53	0.41	0.19	0.34	0.62	0.52	0.62	0.34	0.27
Delay/Veh:	50.5	46.9	0.0	52.7	51.7	30.4	37.4	22.8	14.5	37.7	16.2	11.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.5	46.9	0.0	52.7	51.7	30.4	37.4	22.8	14.5	37.7	16.2	11.4
DesignQueue:	17	8	0	10	8	6	16	80	20	33	42	10

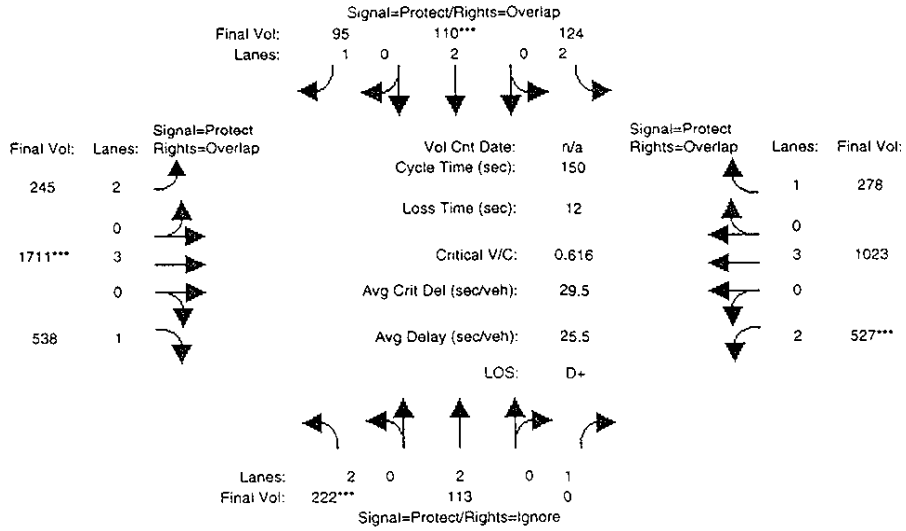
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #3120: CAPITOL/PEARL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	222	103	261	124	105	95	239	1671	538	523	1002	278
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	103	0	124	105	95	239	1671	538	523	1002	278
Added Vol:	0	10	8	0	5	0	6	40	0	4	21	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	222	113	0	124	110	95	245	1711	538	527	1023	278
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	222	113	0	124	110	95	245	1711	538	527	1023	278
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	222	113	0	124	110	95	245	1711	538	527	1023	278
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	222	113	0	124	110	95	245	1711	538	527	1023	278
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.03	0.00	0.04	0.03	0.05	0.08	0.30	0.31	0.17	0.18	0.16
Crit Moves:	****				****			****		****		
Green Time:	16.8	15.7	0.0	11.0	10.0	43.6	33.6	71.4	88.2	39.8	77.6	88.6
Volume/Cap:	0.63	0.28	0.00	0.54	0.43	0.19	0.35	0.63	0.52	0.63	0.35	0.27
Delay/Veh:	50.9	47.2	0.0	52.8	51.9	30.3	37.3	22.7	14.4	38.0	16.2	11.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.9	47.2	0.0	52.8	51.9	30.3	37.3	22.7	14.4	38.0	16.2	11.4
DesignQueue:	17	8	0	10	9	6	16	81	20	33	43	10

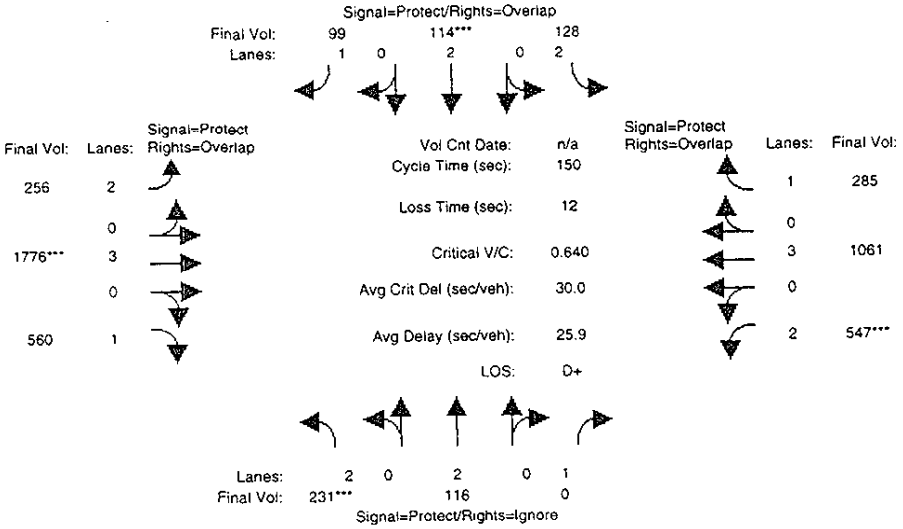
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #3120: CAPITOL/PEARL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	231	116	278	128	114	99	256	1776	560	547	1061	285
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	231	116	0	128	114	99	256	1776	560	547	1061	285
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	231	116	0	128	114	99	256	1776	560	547	1061	285
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	231	116	0	128	114	99	256	1776	560	547	1061	285
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	231	116	0	128	114	99	256	1776	560	547	1061	285
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	231	116	0	128	114	99	256	1776	560	547	1061	285
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	3800	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.03	0.00	0.04	0.03	0.06	0.08	0.31	0.32	0.17	0.19	0.16
Crit Moves:	****				****			****		****		
Green Time:	16.8	15.8	0.0	11.0	10.0	43.8	33.8	71.4	88.2	39.8	77.4	88.4
Volume/Cap:	0.65	0.29	0.00	0.55	0.45	0.19	0.36	0.65	0.54	0.65	0.36	0.28
Delay/Veh:	51.5	47.2	0.0	53.1	52.1	30.3	37.4	23.1	14.7	38.5	16.4	11.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.5	47.2	0.0	53.1	52.1	30.3	37.4	23.1	14.7	38.5	16.4	11.5
DesignQueue:	17	9	0	10	9	6	17	84	21	35	45	10

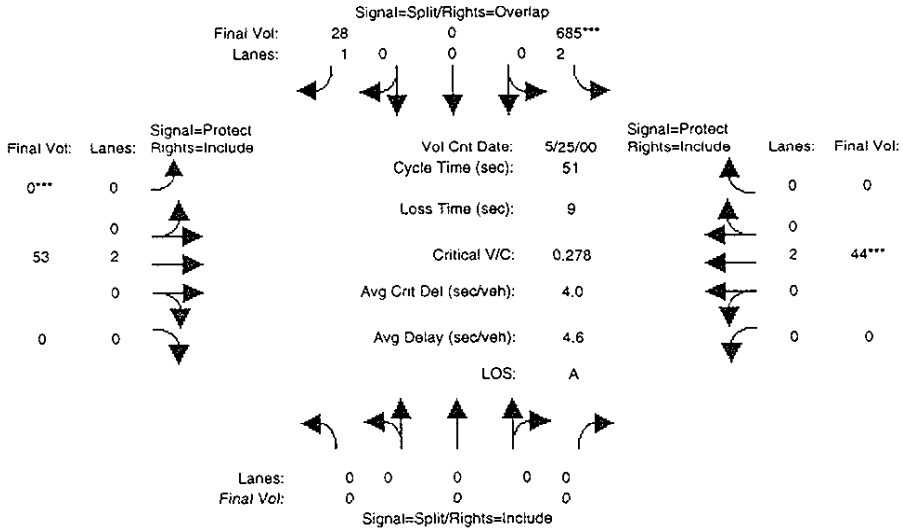
99 - 083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #3201: 85/ALMADEN PLAZA



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	0	10	0	0	10	0
Volume Module: >> Count Date: 25 May 2000 <<												
Base Vol:	0	0	0	685	0	28	0	53	0	0	44	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	685	0	28	0	53	0	0	44	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	685	0	28	0	53	0	0	44	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	685	0	28	0	53	0	0	44	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	685	0	28	0	53	0	0	44	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	685	0	28	0	53	0	0	44	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.22	0.00	0.02	0.00	0.01	0.00	0.00	0.01	0.00
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.63	0.00	0.63	0.00	0.20	0.00	0.00	0.20	0.00
Volume/Cap:	0.00	0.00	0.00	0.35	0.00	0.03	0.00	0.07	0.00	0.00	0.06	0.00
Delay/Veh:	0.0	0.0	0.0	3.5	0.0	2.7	0.0	12.7	0.0	0.0	12.7	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	3.5	0.0	2.7	0.0	12.7	0.0	0.0	12.7	0.0
DesignQueue:	0	0	0	8	0	0	0	1	0	0	1	0

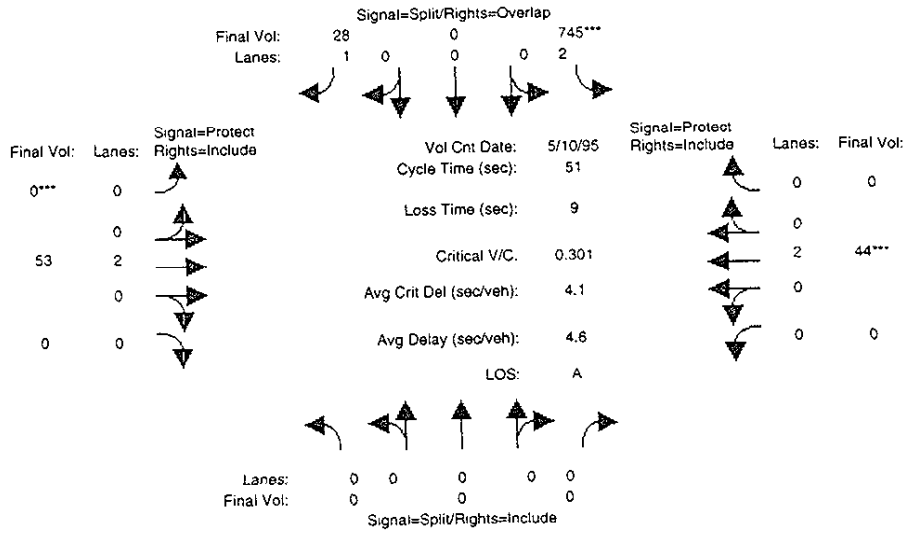
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #3201: 85/ALMADEN PLAZA



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	0	10	0	0	10	0
Volume Module: >> Count Date: 10 May 1995 <<												
Base Vol:	0	0	0	745	0	28	0	53	0	0	44	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	745	0	28	0	53	0	0	44	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	745	0	28	0	53	0	0	44	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	745	0	28	0	53	0	0	44	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	745	0	28	0	53	0	0	44	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	745	0	28	0	53	0	0	44	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.24	0.00	0.02	0.00	0.01	0.00	0.00	0.01	0.00
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	32.0	0.0	32.0	0.0	10.0	0.0	0.0	10.0	0.0
Volume/Cap:	0.00	0.00	0.00	0.38	0.00	0.03	0.00	0.07	0.00	0.00	0.06	0.00
Delay/Veh:	0.0	0.0	0.0	3.6	0.0	2.7	0.0	12.7	0.0	0.0	12.7	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	3.6	0.0	2.7	0.0	12.7	0.0	0.0	12.7	0.0
DesignQueue:	0	0	0	8	0	0	0	1	0	0	1	0

99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #3201: 85/ALMADEN PLAZA

Signal=Split/Rights=Overlap

Final Vol:	28		0		746***
Lanes:	1	0	0	0	2

Final Vol:	Lanes:	Signal=Protect Rights=Include
0***	0	
	0	
53	2	
	0	
0	0	

Vol Cnt Date:	n/a
Cycle Time (sec):	51
Loss Time (sec):	9
Critical V/C:	0.302
Avg Crit Del (sec/veh):	4.1
Avg Delay (sec/veh):	4.6
LOS:	A

Signal=Protect Rights=Include	Lanes:	Final Vol:
	0	0
	0	
	2	44***
	0	
	0	0

Lanes:	0	0	0	0	0
Final Vol:	0		0		0

Signal=Split/Rights=Include

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	0	10	0	0	10	0
Volume Module:												
Base Vol:	0	0	0	745	0	28	0	53	0	0	44	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	745	0	28	0	53	0	0	44	0
Added Vol:	0	0	0	1	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	746	0	28	0	53	0	0	44	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	746	0	28	0	53	0	0	44	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	746	0	28	0	53	0	0	44	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	746	0	28	0	53	0	0	44	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.24	0.00	0.02	0.00	0.01	0.00	0.00	0.01	0.00
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	32.0	0.0	32.0	0.0	10.0	0.0	0.0	10.0	0.0
Volume/Cap:	0.00	0.00	0.00	0.38	0.00	0.03	0.00	0.07	0.00	0.00	0.06	0.00
Delay/Veh:	0.0	0.0	0.0	3.6	0.0	2.7	0.0	12.7	0.0	0.0	12.7	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	3.6	0.0	2.7	0.0	12.7	0.0	0.0	12.7	0.0
DesignQueue:	0	0	0	8	0	0	0	1	0	0	1	0

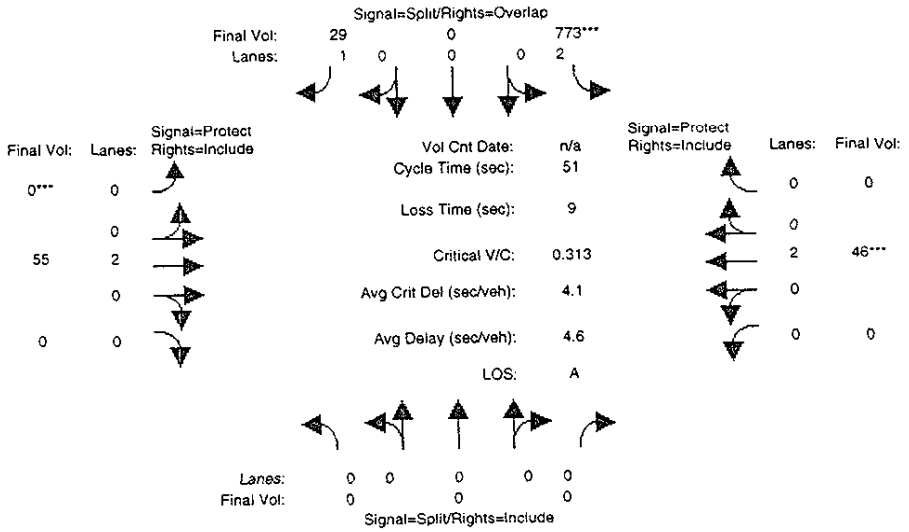
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #3201: 85/ALMADEN PLAZA



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Min. Green:	0	0	0	10	0	10	0	10	0	0	10	0
Volume Module:												
Base Vol:	0	0	0	773	0	29	0	55	0	0	46	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	773	0	29	0	55	0	0	46	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	773	0	29	0	55	0	0	46	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	773	0	29	0	55	0	0	46	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	773	0	29	0	55	0	0	46	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	773	0	29	0	55	0	0	46	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.25	0.00	0.02	0.00	0.01	0.00	0.00	0.01	0.00
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	32.0	0.0	32.0	0.0	10.0	0.0	0.0	10.0	0.0
Volume/Cap:	0.00	0.00	0.00	0.39	0.00	0.03	0.00	0.07	0.00	0.00	0.06	0.00
Delay/Veh:	0.0	0.0	0.0	3.6	0.0	2.7	0.0	12.7	0.0	0.0	12.7	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	3.6	0.0	2.7	0.0	12.7	0.0	0.0	12.7	0.0
DesignQueue:	0	0	0	9	0	0	0	1	0	0	1	0

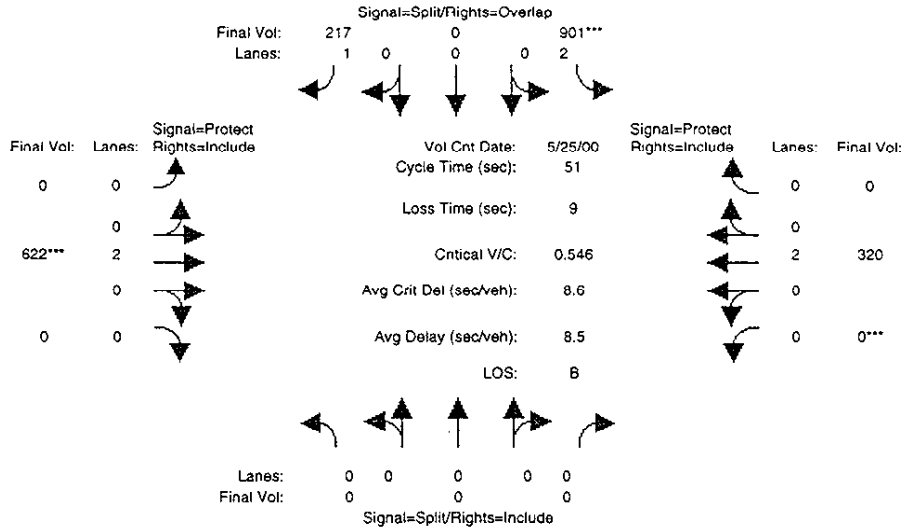
98-083

Copyright (c) 1998 Dowling Associates Inc
Licensed to Hexagon Trans San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #3201: 85/ALMADEN PLAZA



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	0	10	0	0	10	0
Volume Module: >> Count Date: 25 May 2000 <<												
Base Vol:	0	0	0	901	0	217	0	622	0	0	320	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	901	0	217	0	622	0	0	320	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	901	0	217	0	622	0	0	320	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	901	0	217	0	622	0	0	320	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	901	0	217	0	622	0	0	320	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	901	0	217	0	622	0	0	320	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.29	0.00	0.12	0.00	0.16	0.00	0.00	0.08	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.52	0.00	0.52	0.00	0.30	0.00	0.00	0.30	0.00
Volume/Cap:	0.00	0.00	0.00	0.55	0.00	0.24	0.00	0.55	0.00	0.00	0.28	0.00
Delay/Veh:	0.0	0.0	0.0	6.5	0.0	5.0	0.0	11.8	0.0	0.0	10.4	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	6.5	0.0	5.0	0.0	11.8	0.0	0.0	10.4	0.0
DesignQueue:	0	0	0	13	0	3	0	13	0	0	6	0

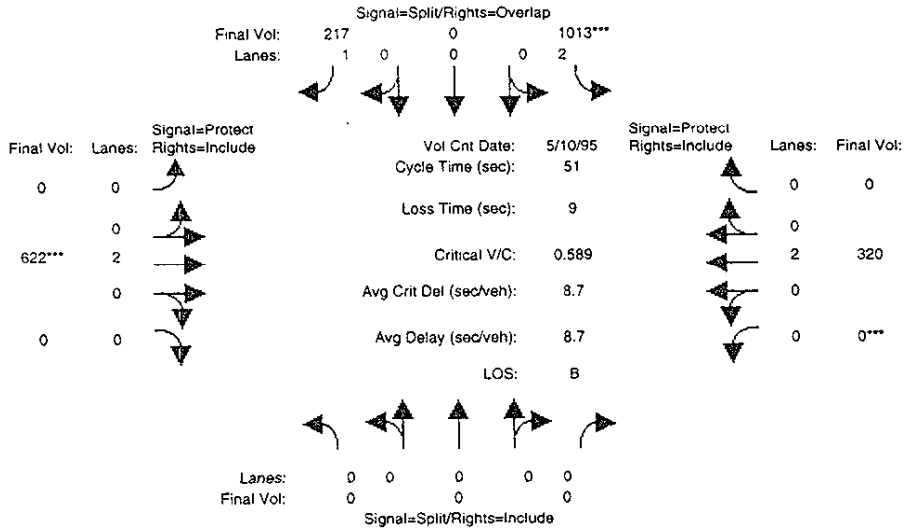
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #3201: 85/ALMADEN PLAZA



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	0	10	0	0	10	0
Volume Module: >> Count Date: 10 May 1995 <<												
Base Vol:	0	0	0	1013	0	217	0	622	0	0	320	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1013	0	217	0	622	0	0	320	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1013	0	217	0	622	0	0	320	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	1013	0	217	0	622	0	0	320	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1013	0	217	0	622	0	0	320	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	1013	0	217	0	622	0	0	320	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.32	0.00	0.12	0.00	0.16	0.00	0.00	0.08	0.00
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	27.8	0.0	27.8	0.0	14.2	0.0	0.0	14.2	0.0
Volume/Cap:	0.00	0.00	0.00	0.59	0.00	0.23	0.00	0.59	0.00	0.00	0.30	0.00
Delay/Veh:	0.0	0.0	0.0	6.3	0.0	4.6	0.0	12.7	0.0	0.0	11.1	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	6.3	0.0	4.6	0.0	12.7	0.0	0.0	11.1	0.0
DesignQueue:	0	0	0	14	0	3	0	13	0	0	7	0

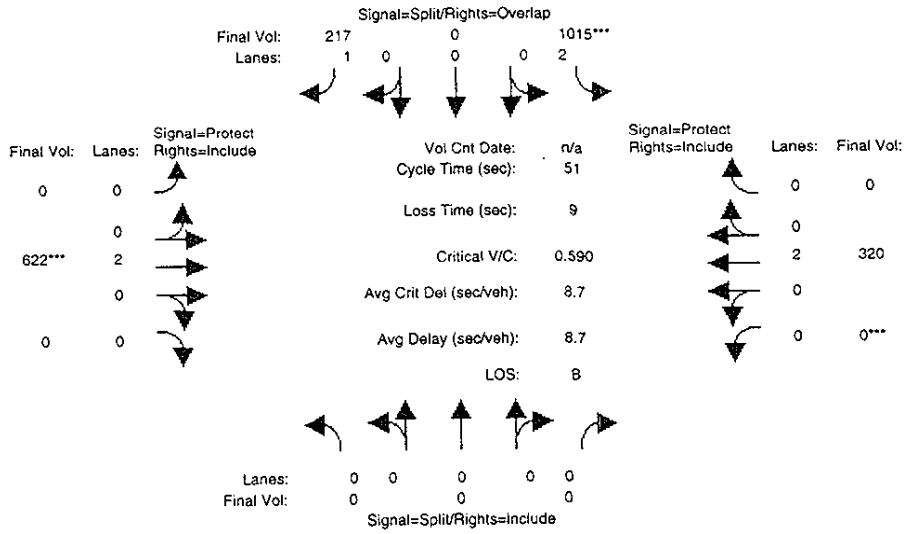
99 = 083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #3201: 85/ALMADEN PLAZA



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	0	10	0	0	10	0
Volume Module:												
Base Vol:	0	0	0	1013	0	217	0	622	0	0	320	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1013	0	217	0	622	0	0	320	0
Added Vol:	0	0	0	2	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1015	0	217	0	622	0	0	320	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	1015	0	217	0	622	0	0	320	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1015	0	217	0	622	0	0	320	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	1015	0	217	0	622	0	0	320	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.32	0.00	0.12	0.00	0.16	0.00	0.00	0.08	0.00
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	27.9	0.0	27.9	0.0	14.1	0.0	0.0	14.1	0.0
Volume/Cap:	0.00	0.00	0.00	0.59	0.00	0.23	0.00	0.59	0.00	0.00	0.30	0.00
Delay/Veh:	0.0	0.0	0.0	6.3	0.0	4.6	0.0	12.7	0.0	0.0	11.1	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	6.3	0.0	4.6	0.0	12.7	0.0	0.0	11.1	0.0
DesignQueue:	0	0	0	14	0	3	0	13	0	0	7	0

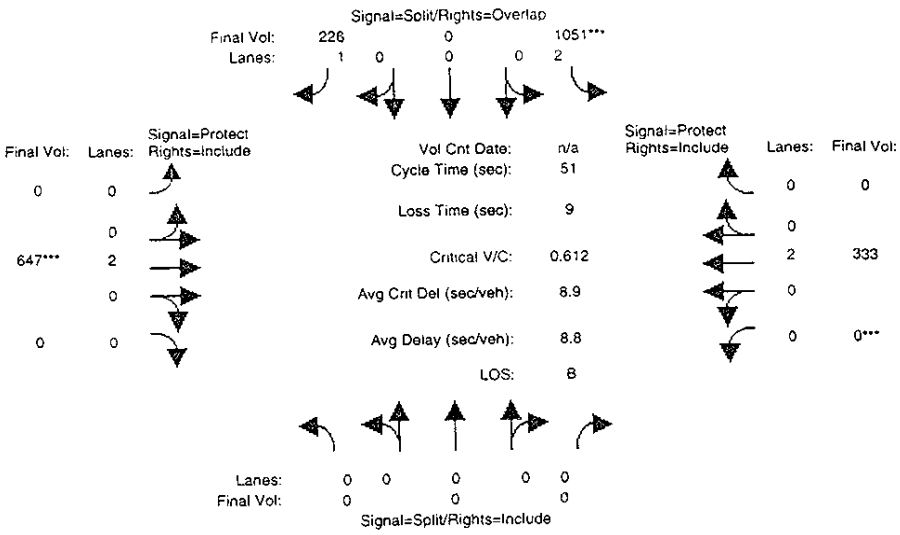
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #3201: 85/ALMADEN PLAZA



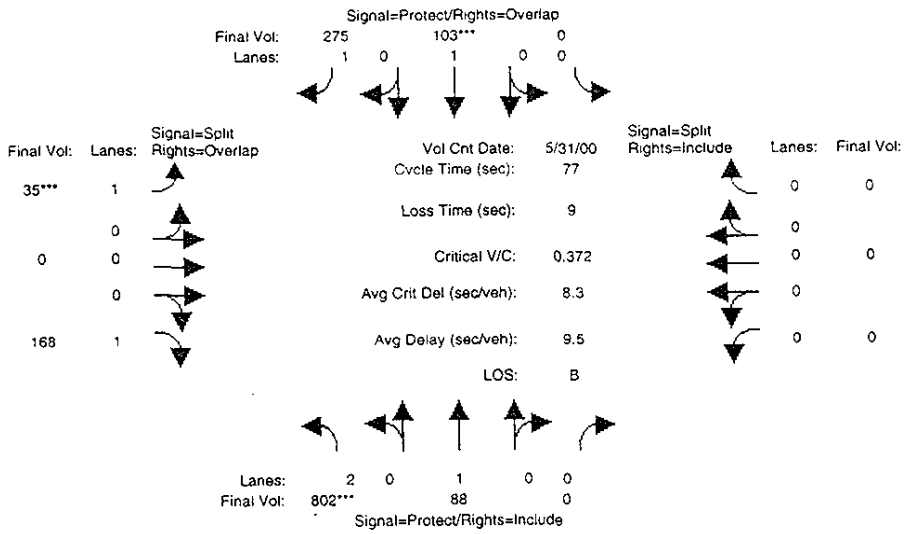
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	0	10	0	0	10	0
Volume Module:												
Base Vol:	0	0	0	1051	0	226	0	647	0	0	333	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1051	0	226	0	647	0	0	333	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1051	0	226	0	647	0	0	333	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	1051	0	226	0	647	0	0	333	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1051	0	226	0	647	0	0	333	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	1051	0	226	0	647	0	0	333	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	0	0	0	3150	0	1750	0	3800	0	0	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.33	0.00	0.13	0.00	0.17	0.00	0.00	0.09	0.00
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	27.8	0.0	27.8	0.0	14.2	0.0	0.0	14.2	0.0
Volume/Cap:	0.00	0.00	0.00	0.61	0.00	0.24	0.00	0.61	0.00	0.00	0.31	0.00
Delay/Veh:	0.0	0.0	0.0	6.5	0.0	4.6	0.0	12.9	0.0	0.0	11.1	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	6.5	0.0	4.6	0.0	12.9	0.0	0.0	11.1	0.0
DesignQueue:	0	0	0	15	0	3	0	14	0	0	7	0

Copyright (c) 1998 Dowling Associates Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #3208: 87/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Volume Module: >> Count Date: 31 May 2000 << 0.333												
Base Vol:	802	88	0	0	103	275	35	0	168	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	802	88	0	0	103	275	35	0	168	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	802	88	0	0	103	275	35	0	168	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	802	88	0	0	103	275	35	0	168	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	802	88	0	0	103	275	35	0	168	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	802	88	0	0	103	275	35	0	168	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	1900	0	0	1900	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.25	0.05	0.00	0.00	0.05	0.16	0.02	0.00	0.10	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green/Cycle:	0.62	0.75	0.00	0.00	0.13	0.26	0.13	0.00	0.75	0.00	0.00	0.00
Volume/Cap:	0.41	0.06	0.00	0.00	0.41	0.60	0.15	0.00	0.13	0.00	0.00	0.00
Delay/Veh:	5.7	1.9	0.0	0.0	23.9	20.5	22.6	0.0	2.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	5.7	1.9	0.0	0.0	23.9	20.5	22.6	0.0	2.0	0.0	0.0	0.0
DesignQueue:	14	1	0	0	4	9	1	0	2	0	0	0

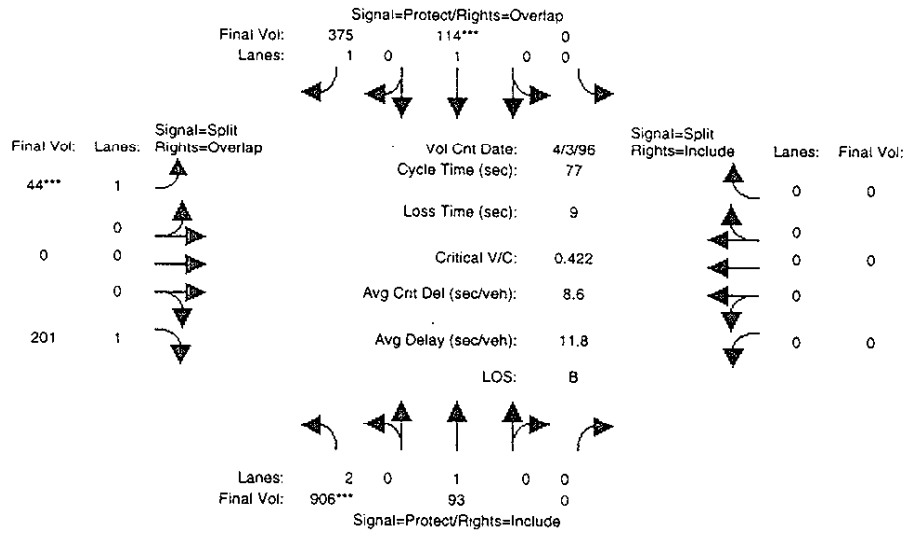
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #3208: 87/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Volume Module: >> Count Date: 3 Apr 1996 << 0.333												
Base Vol:	906	93	0	0	114	375	44	0	201	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	906	93	0	0	114	375	44	0	201	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	906	93	0	0	114	375	44	0	201	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	906	93	0	0	114	375	44	0	201	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	906	93	0	0	114	375	44	0	201	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	906	93	0	0	114	375	44	0	201	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	1900	0	0	1900	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.29	0.05	0.00	0.00	0.06	0.21	0.03	0.00	0.11	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	48.0	58.0	0.0	0.0	10.0	20.0	10.0	0.0	58.0	0.0	0.0	0.0
Volume/Cap:	0.46	0.06	0.00	0.00	0.46	0.82	0.19	0.00	0.15	0.00	0.00	0.00
Delay/Veh:	6.0	1.9	0.0	0.0	24.6	28.5	22.8	0.0	2.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	6.0	1.9	0.0	0.0	24.6	28.5	22.8	0.0	2.0	0.0	0.0	0.0
DesignQueue:	16	1	0	0	4	13	2	0	2	0	0	0

99-083

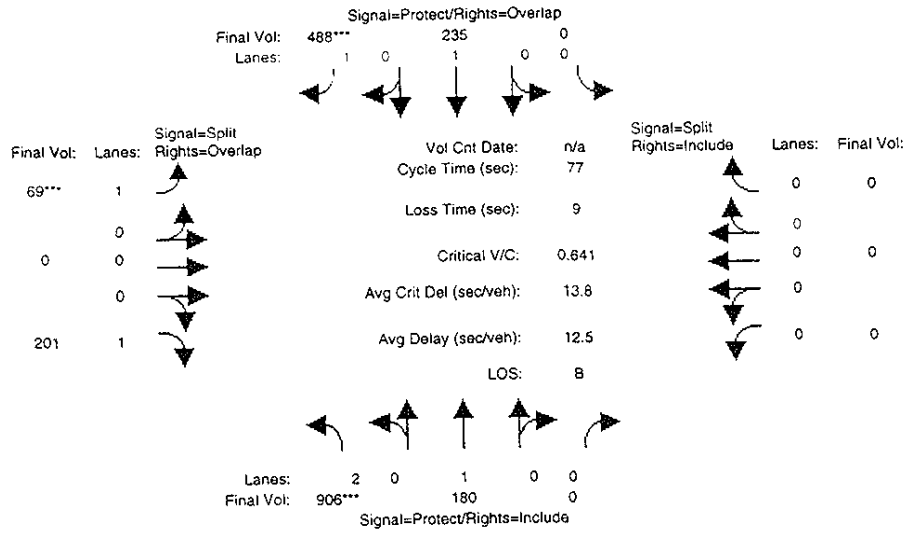
Copyright (c) 1998 Dowling Associates, Inc

Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #3208: 87/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Volume Module:												
Base Vol:	906	93	0	0	114	375	44	0	201	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	906	93	0	0	114	375	44	0	201	0	0	0
Added Vol:	0	87	0	0	121	113	25	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	906	180	0	0	235	488	69	0	201	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	906	180	0	0	235	488	69	0	201	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	906	180	0	0	235	488	69	0	201	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	906	180	0	0	235	488	69	0	201	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	1900	0	0	1900	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.29	0.09	0.00	0.00	0.12	0.28	0.04	0.00	0.11	0.00	0.00	0.00
Crit Moves:	****					****	****					
Green Time:	38.2	58.0	0.0	0.0	19.8	29.8	10.0	0.0	48.2	0.0	0.0	0.0
Volume/Cap:	0.58	0.13	0.00	0.00	0.48	0.72	0.30	0.00	0.18	0.00	0.00	0.00
Delay/Veh:	10.8	2.0	0.0	0.0	19.0	17.9	23.3	0.0	4.6	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.8	2.0	0.0	0.0	19.0	17.9	23.3	0.0	4.6	0.0	0.0	0.0
DesignQueue:	21	2	0	0	8	14	3	0	3	0	0	0

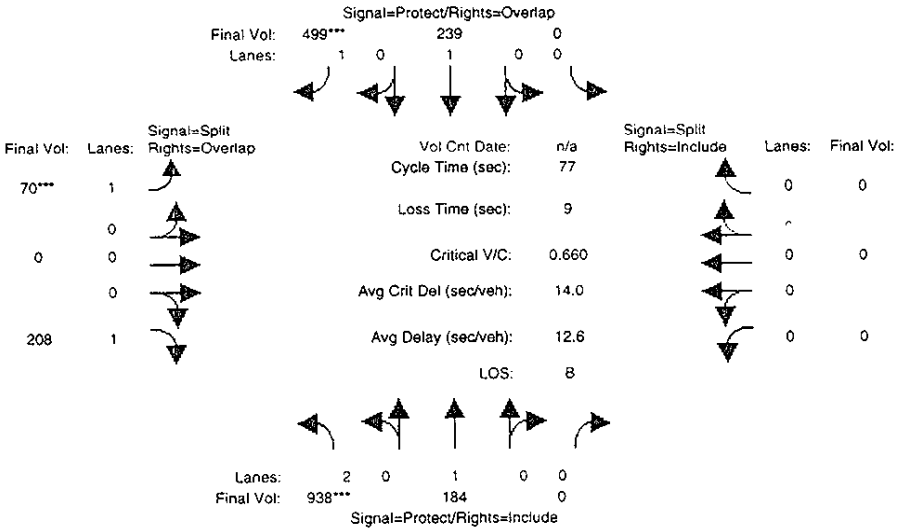
99-088

Copyright (c) 1998 Dowling Associates Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #3208: 87/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Volume Module:												
Base Vol:	938	184	0	0	239	499	70	0	208	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	938	184	0	0	239	499	70	0	208	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	938	184	0	0	239	499	70	0	208	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	938	184	0	0	239	499	70	0	208	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	938	184	0	0	239	499	70	0	208	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	938	184	0	0	239	499	70	0	208	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	1900	0	0	1900	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.30	0.10	0.00	0.00	0.13	0.29	0.04	0.00	0.12	0.00	0.00	0.00
Crit Moves:	****					****	****					
Green Time:	38.1	58.0	0.0	0.0	19.9	29.9	10.0	0.0	48.1	0.0	0.0	0.0
Volume/Cap:	0.60	0.13	0.00	0.00	0.49	0.73	0.31	0.00	0.19	0.00	0.00	0.00
Delay/Veh:	11.1	2.0	0.0	0.0	19.0	18.2	23.3	0.0	4.7	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.1	2.0	0.0	0.0	19.0	18.2	23.3	0.0	4.7	0.0	0.0	0.0
DesignQueue:	22	2	0	0	8	14	3	0	3	0	0	0

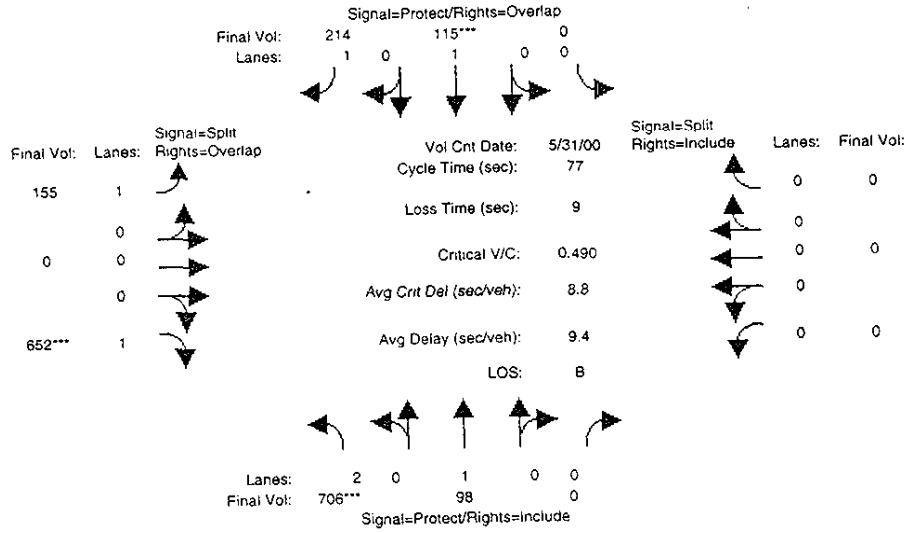
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #3208: 87/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Volume Module: >> Count Date: 31 May 2000 << 0.326												
Base Vol:	706	98	0	0	115	214	155	0	652	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	706	98	0	0	115	214	155	0	652	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	706	98	0	0	115	214	155	0	652	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	706	98	0	0	115	214	155	0	652	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	706	98	0	0	115	214	155	0	652	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	706	98	0	0	115	214	155	0	652	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	1900	0	0	1900	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.22	0.05	0.00	0.00	0.06	0.12	0.09	0.00	0.37	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.45	0.58	0.00	0.00	0.13	0.43	0.30	0.00	0.75	0.00	0.00	0.00
Volume/Cap:	0.49	0.09	0.00	0.00	0.47	0.28	0.30	0.00	0.49	0.00	0.00	0.00
Delay/Veh:	11.5	5.4	0.0	0.0	24.6	10.9	15.8	0.0	3.1	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.5	5.4	0.0	0.0	24.6	10.9	15.8	0.0	3.1	0.0	0.0	0.0
DesignQueue:	17	2	0	0	4	5	5	0	8	0	0	0

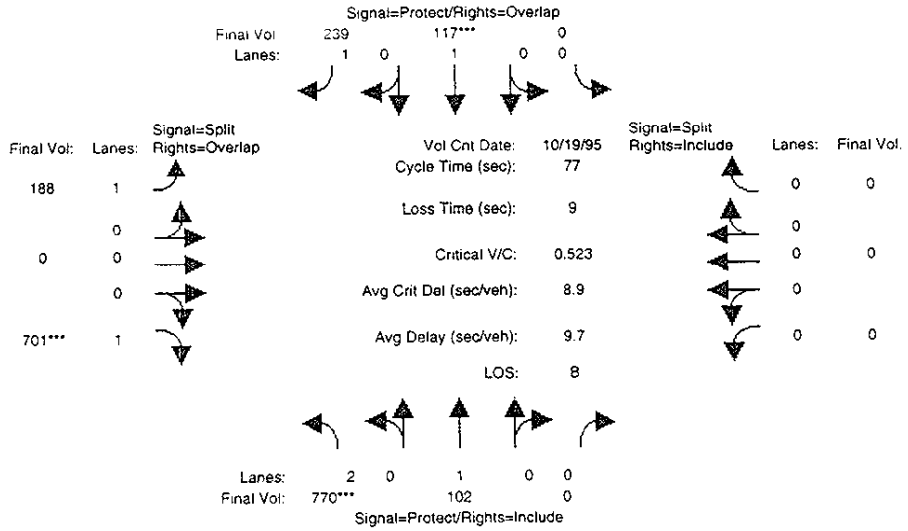
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #3208: 87/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Volume Module: >> Count Date: 19 Oct 1995 << 0.326												
Base Vol:	770	102	0	0	117	239	188	0	701	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	770	102	0	0	117	239	188	0	701	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	770	102	0	0	117	239	188	0	701	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	770	102	0	0	117	239	188	0	701	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	770	102	0	0	117	239	188	0	701	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	770	102	0	0	117	239	188	0	701	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	1900	0	0	1900	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.24	0.05	0.00	0.00	0.06	0.14	0.11	0.00	0.40	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	35.4	45.4	0.0	0.0	10.0	32.6	22.6	0.0	58.0	0.0	0.0	0.0
Volume/Cap:	0.53	0.09	0.00	0.00	0.47	0.32	0.37	0.00	0.53	0.00	0.00	0.00
Delay/Veh:	11.6	5.2	0.0	0.0	24.7	11.4	16.6	0.0	3.3	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.6	5.2	0.0	0.0	24.7	11.4	16.6	0.0	3.3	0.0	0.0	0.0
DesignQueue:	19	2	0	0	4	6	6	0	8	0	0	0

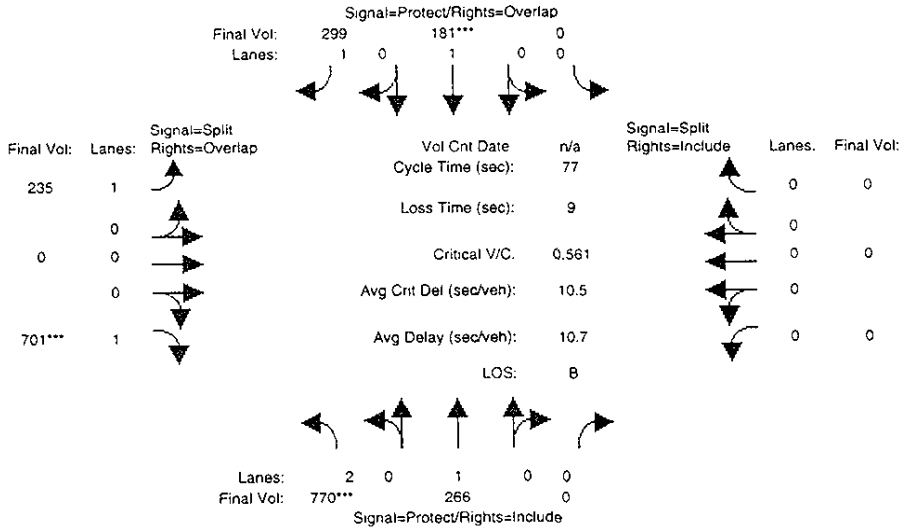
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #3208: 87/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Volume Module:												
Base Vol:	770	102	0	0	117	239	188	0	701	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	770	102	0	0	117	239	188	0	701	0	0	0
Added Vol:	0	164	0	0	64	60	47	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	770	266	0	0	181	299	235	0	701	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	770	266	0	0	181	299	235	0	701	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	770	266	0	0	181	299	235	0	701	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	770	266	0	0	181	299	235	0	701	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	1900	0	0	1900	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.24	0.14	0.00	0.00	0.10	0.17	0.13	0.00	0.40	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	33.5	46.6	0.0	0.0	13.1	34.5	21.4	0.0	54.9	0.0	0.0	0.0
Volume/Cap:	0.56	0.23	0.00	0.00	0.56	0.38	0.48	0.00	0.56	0.00	0.00	0.00
Delay/Veh:	12.8	5.3	0.0	0.0	24.0	10.9	18.2	0.0	4.5	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.8	5.3	0.0	0.0	24.0	10.9	18.2	0.0	4.5	0.0	0.0	0.0
DesignQueue:	20	5	0	0	7	7	8	0	10	0	0	0

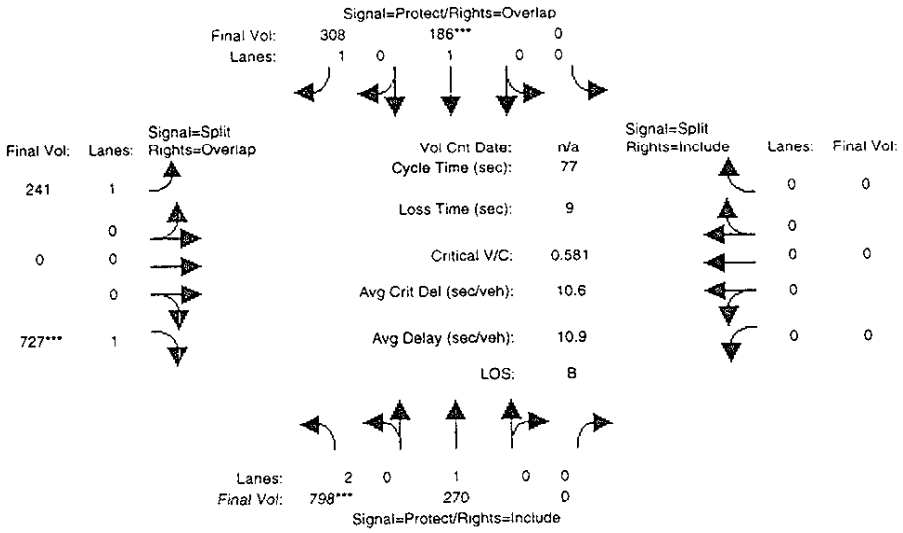
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #3208: 87/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	0	10	10	10	0	10	0	0	0
Volume Module:												
Base Vol:	798	270	0	0	186	308	241	0	727	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	798	270	0	0	186	308	241	0	727	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	798	270	0	0	186	308	241	0	727	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	798	270	0	0	186	308	241	0	727	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	798	270	0	0	186	308	241	0	727	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	798	270	0	0	186	308	241	0	727	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	3150	1900	0	0	1900	1750	1750	0	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.25	0.14	0.00	0.00	0.10	0.18	0.14	0.00	0.42	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	33.6	46.5	0.0	0.0	13.0	34.4	21.5	0.0	55.0	0.0	0.0	0.0
Volume/Cap:	0.58	0.24	0.00	0.00	0.58	0.39	0.49	0.00	0.58	0.00	0.00	0.00
Delay/Veh:	12.9	5.4	0.0	0.0	24.4	11.0	18.3	0.0	4.6	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.9	5.4	0.0	0.0	24.4	11.0	18.3	0.0	4.6	0.0	0.0	0.0
DesignQueue:	20	5	0	0	7	8	8	0	10	0	0	0

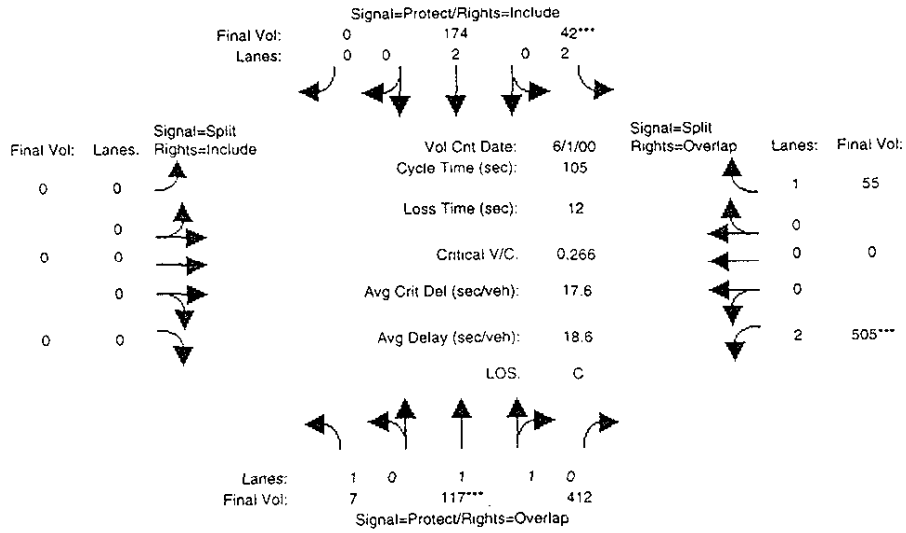
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #3587: HILLSDALE/PEARL (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	7	7	10	0	0	0	0	10	0	10
Volume Module: >> Count Date: 1 Jun 2000 <<												
Base Vol:	7	117	412	42	174	0	0	0	0	505	0	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	117	412	42	174	0	0	0	0	505	0	55
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	117	412	42	174	0	0	0	0	505	0	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	117	412	42	174	0	0	0	0	505	0	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	117	412	42	174	0	0	0	0	505	0	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	7	117	412	42	174	0	0	0	0	505	0	55
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1750	1900	1750	3150	3800	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.24	0.01	0.05	0.00	0.00	0.00	0.00	0.16	0.00	0.03
Crit Moves:		****		****						****		
Green/Cycle:	0.12	0.23	0.82	0.07	0.17	0.00	0.00	0.00	0.00	0.59	0.00	0.66
Volume/Cap:	0.03	0.27	0.29	0.20	0.26	0.00	0.00	0.00	0.00	0.27	0.00	0.05
Delay/Veh:	30.9	25.4	1.7	35.3	28.7	0.0	0.0	0.0	0.0	7.9	0.0	4.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.9	25.4	1.7	35.3	28.7	0.0	0.0	0.0	0.0	7.9	0.0	4.8
DesignQueue:	0	5	5	2	8	0	0	0	0	12	0	1

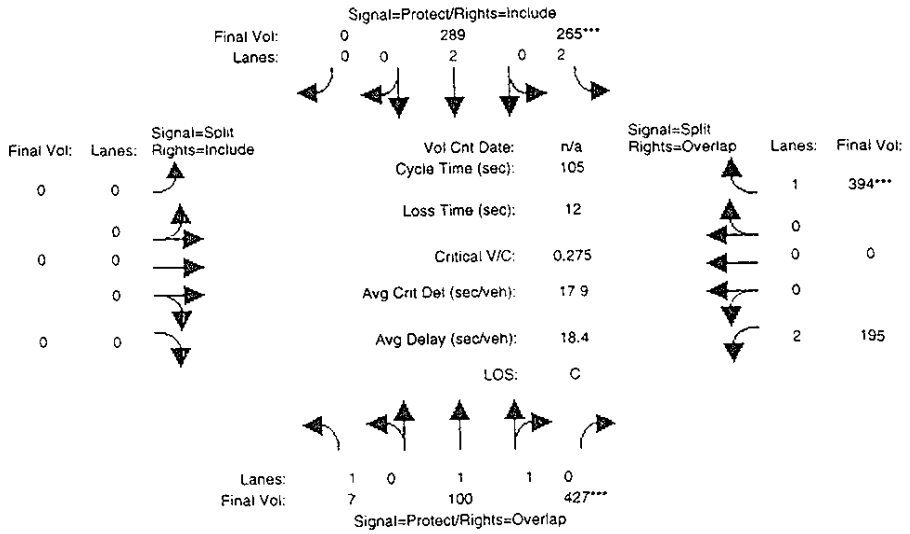
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #3587: HILLSDALE/PEARL (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	7	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	7	100	427	265	289	0	0	0	0	195	0	394
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	100	427	265	289	0	0	0	0	195	0	394
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	100	427	265	289	0	0	0	0	195	0	394
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	100	427	265	289	0	0	0	0	195	0	394
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	100	427	265	289	0	0	0	0	195	0	394
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	7	100	427	265	289	0	0	0	0	195	0	394
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1750	1900	1750	3150	3800	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.05	0.24	0.08	0.08	0.00	0.00	0.00	0.00	0.06	0.00	0.23
Crit Moves:			****	****								****
Green Time:	23.9	37.0	72.1	20.9	34.1	0.0	0.0	0.0	0.0	35.1	0.0	56.0
Volume/Cap:	0.02	0.15	0.36	0.42	0.23	0.00	0.00	0.00	0.00	0.19	0.00	0.42
Delay/Veh:	23.9	17.7	5.3	28.2	19.7	0.0	0.0	0.0	0.0	18.9	0.0	11.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.9	17.7	5.3	28.2	19.7	0.0	0.0	0.0	0.0	18.9	0.0	11.4
DesignQueue:	0	4	8	13	12	0	0	0	0	8	0	11

98-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #3587: HILLSDALE/PEARL (FUT)

Signal=Protect/Rights=Include

Final Vol:	0		289		316***
Lanes:	0	0	2	0	2

Final Vol:	Lanes:	Signal=Split Rights=Include
0	0	
	0	
0	0	
	0	
0	0	

Vol Cnt Date:	n/a
Cycle Time (sec):	105
Loss Time (sec):	12
Critical V/C:	0.281
Avg Cnt Del (sec/veh):	18.5
Avg Delay (sec/veh):	18.7
LOS.	C

Signal=Split Rights=Overlap	Lanes:	Final Vol:
	1	495***
	0	
	0	0
	0	
	2	205

Lanes:	1	0	1	1	0
Final Vol:	7		100		435***

Signal=Protect/Rights=Overlap

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	7	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	7	100	427	265	289	0	0	0	0	195	0	394
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	100	427	265	289	0	0	0	0	195	0	394
Added Vol:	0	0	8	51	0	0	0	0	0	10	0	101
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	100	435	316	289	0	0	0	0	205	0	495
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	100	435	316	289	0	0	0	0	205	0	495
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	100	435	316	289	0	0	0	0	205	0	495
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	7	100	435	316	289	0	0	0	0	205	0	495
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1750	1900	1750	3150	3800	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.05	0.25	0.10	0.08	0.00	0.00	0.00	0.00	0.07	0.00	0.28
Crit Moves:			****	****								****
Green Time:	22.3	32.7	71.6	21.4	31.8	0.0	0.0	0.0	0.0	38.9	0.0	60.3
Volume/Cap:	0.02	0.17	0.36	0.49	0.25	0.00	0.00	0.00	0.00	0.18	0.00	0.49
Delay/Veh:	24.9	20.0	5.4	28.6	21.0	0.0	0.0	0.0	0.0	16.9	0.0	10.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.9	20.0	5.4	28.6	21.0	0.0	0.0	0.0	0.0	16.9	0.0	10.4
DesignQueue:	0	4	9	15	12	0	0	0	0	8	0	13

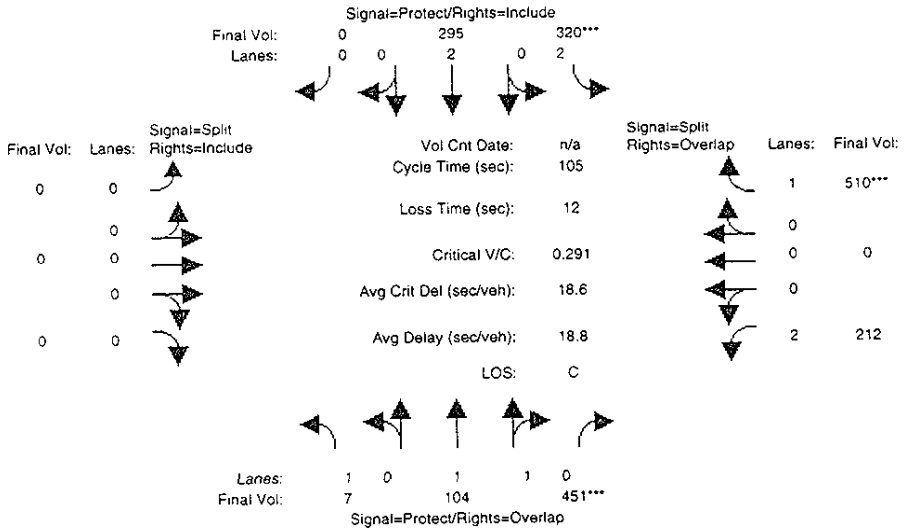
99-083

Copyright (c) 1998 Dowling Associates Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #3587: HILLSDALE/PEARL (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	7	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	7	104	451	320	295	0	0	0	0	212	0	510
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	104	451	320	295	0	0	0	0	212	0	510
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	104	451	320	295	0	0	0	0	212	0	510
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	104	451	320	295	0	0	0	0	212	0	510
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	104	451	320	295	0	0	0	0	212	0	510
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	7	104	451	320	295	0	0	0	0	212	0	510
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1750	1900	1750	3150	3800	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.05	0.26	0.10	0.08	0.00	0.00	0.00	0.00	0.07	0.00	0.29
Crit Moves:			****	****								****
Green Time:	22.3	33.3	72.2	20.8	31.8	0.0	0.0	0.0	0.0	38.9	0.0	59.7
Volume/Cap:	0.02	0.17	0.37	0.51	0.26	0.00	0.00	0.00	0.00	0.18	0.00	0.51
Delay/Veh:	24.9	19.7	5.3	29.2	21.0	0.0	0.0	0.0	0.0	17.0	0.0	10.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.9	19.7	5.3	29.2	21.0	0.0	0.0	0.0	0.0	17.0	0.0	10.9
DesignQueue:	0	4	9	15	12	0	0	0	0	8	0	14

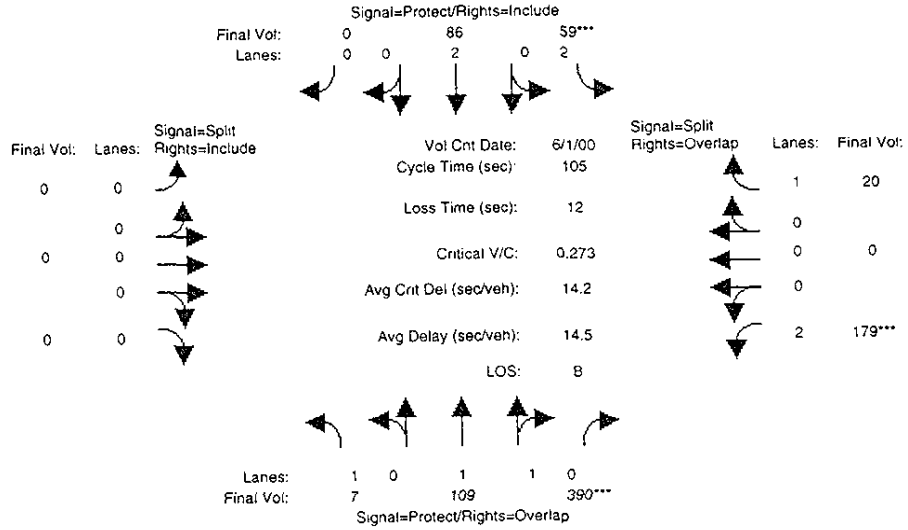
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #3587: HILLSDALE/PEARL (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	7	7	10	0	0	0	0	10	0	10
Volume Module: >> Count Date: 1 Jun 2000 <<												
Base Vol:	7	109	390	59	86	0	0	0	0	179	0	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	109	390	59	86	0	0	0	0	179	0	20
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	109	390	59	86	0	0	0	0	179	0	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	109	390	59	86	0	0	0	0	179	0	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	109	390	59	86	0	0	0	0	179	0	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	7	109	390	59	86	0	0	0	0	179	0	20
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1750	1900	1750	3150	3800	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.22	0.02	0.02	0.00	0.00	0.00	0.00	0.06	0.00	0.01
Crit Moves:			****	****						****		
Green/Cycle:	0.26	0.56	0.80	0.08	0.38	0.00	0.00	0.00	0.00	0.25	0.00	0.33
Volume/Cap:	0.02	0.10	0.28	0.23	0.06	0.00	0.00	0.00	0.00	0.23	0.00	0.03
Delay/Veh:	21.8	8.3	2.0	34.4	15.9	0.0	0.0	0.0	0.0	24.0	0.0	18.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.8	8.3	2.0	34.4	15.9	0.0	0.0	0.0	0.0	24.0	0.0	18.2
DesignQueue:	0	3	5	3	3	0	0	0	0	8	0	1

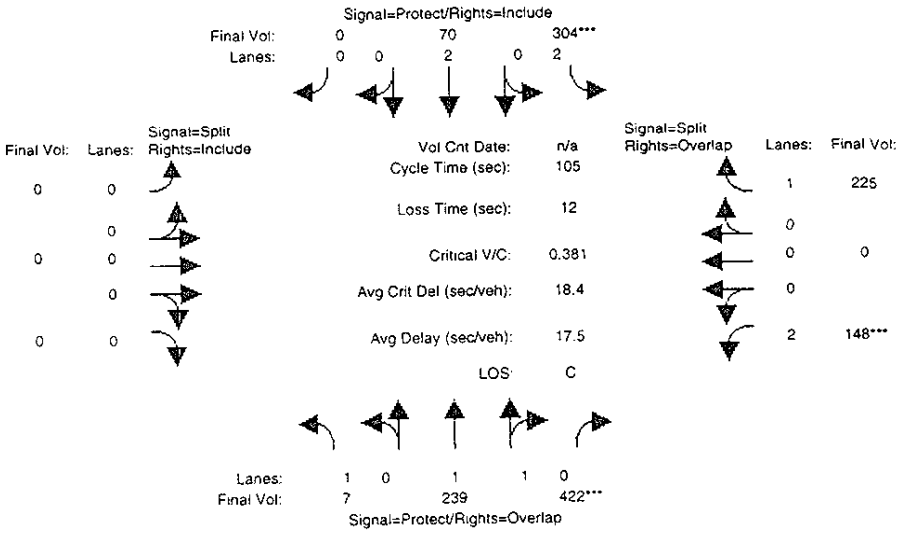
99-083

Copyright (c) 1998 Dowling Associates Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #3587: HILLSDALE/PEARL (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	7	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	7	239	422	304	70	0	0	0	0	148	0	225
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	239	422	304	70	0	0	0	0	148	0	225
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	239	422	304	70	0	0	0	0	148	0	225
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	239	422	304	70	0	0	0	0	148	0	225
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	239	422	304	70	0	0	0	0	148	0	225
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	7	239	422	304	70	0	0	0	0	148	0	225
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1750	1900	1750	3150	3800	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.24	0.10	0.02	0.00	0.00	0.00	0.00	0.05	0.00	0.13
Crit Moves:			****	****						****		
Green Time:	32.1	46.9	62.0	31.0	45.8	0.0	0.0	0.0	0.0	15.1	0.0	46.1
Volume/Cap:	0.01	0.28	0.41	0.33	0.04	0.00	0.00	0.00	0.00	0.33	0.00	0.29
Delay/Veh:	19.3	14.0	8.9	22.0	12.9	0.0	0.0	0.0	0.0	30.8	0.0	14.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.3	14.0	8.9	22.0	12.9	0.0	0.0	0.0	0.0	30.8	0.0	14.5
DesignQueue:	0	8	11	13	2	0	0	0	0	7	0	8

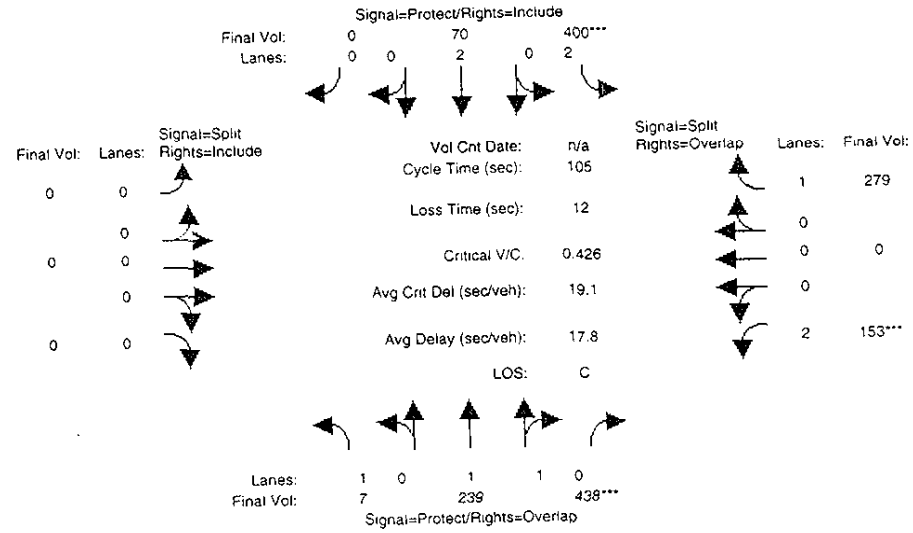
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #3587: HILLSDALE/PEARL (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	7	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	7	239	422	304	70	0	0	0	0	148	0	225
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	239	422	304	70	0	0	0	0	148	0	225
Added Vol:	0	0	16	96	0	0	0	0	0	5	0	54
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	239	438	400	70	0	0	0	0	153	0	279
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	239	438	400	70	0	0	0	0	153	0	279
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	239	438	400	70	0	0	0	0	153	0	279
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	7	239	438	400	70	0	0	0	0	153	0	279
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1750	1900	1750	3150	3800	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.25	0.13	0.02	0.00	0.00	0.00	0.00	0.05	0.00	0.16
Crit Moves:			****	****						****		
Green Time:	32.7	43.6	57.3	35.7	46.7	0.0	0.0	0.0	0.0	13.7	0.0	49.4
Volume/Cap:	0.01	0.30	0.46	0.37	0.04	0.00	0.00	0.00	0.00	0.37	0.00	0.34
Delay/Veh:	19.0	15.6	11.2	20.0	12.5	0.0	0.0	0.0	0.0	32.0	0.0	13.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.0	15.6	11.2	20.0	12.5	0.0	0.0	0.0	0.0	32.0	0.0	13.4
DesignQueue:	0	8	12	16	2	0	0	0	0	8	0	9

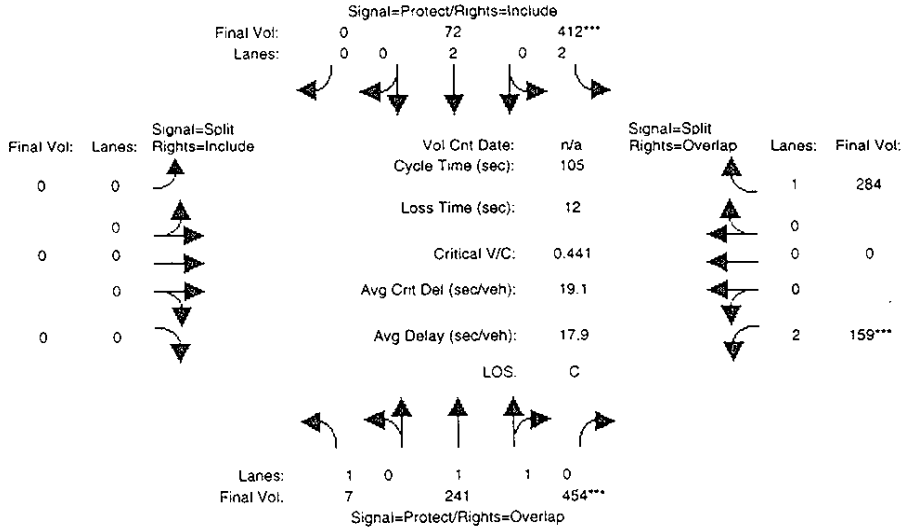
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #3587: HILLSDALE/PEARL (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	7	7	10	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	7	241	454	412	72	0	0	0	0	159	0	284
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	241	454	412	72	0	0	0	0	159	0	284
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	241	454	412	72	0	0	0	0	159	0	284
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	241	454	412	72	0	0	0	0	159	0	284
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	241	454	412	72	0	0	0	0	159	0	284
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	7	241	454	412	72	0	0	0	0	159	0	284
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1750	1900	1750	3150	3800	0	0	0	0	3150	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.26	0.13	0.02	0.00	0.00	0.00	0.00	0.05	0.00	0.16
Crit Moves:			****	****						****		
Green Time:	32.7	44.2	57.8	35.2	46.7	0.0	0.0	0.0	0.0	13.6	0.0	48.8
Volume/Cap:	0.01	0.30	0.47	0.39	0.04	0.00	0.00	0.00	0.00	0.39	0.00	0.35
Delay/Veh:	19.0	15.3	11.1	20.4	12.5	0.0	0.0	0.0	0.0	32.2	0.0	13.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.0	15.3	11.1	20.4	12.5	0.0	0.0	0.0	0.0	32.2	0.0	13.8
DesignQueue:	0	8	13	16	2	0	0	0	0	8	0	9

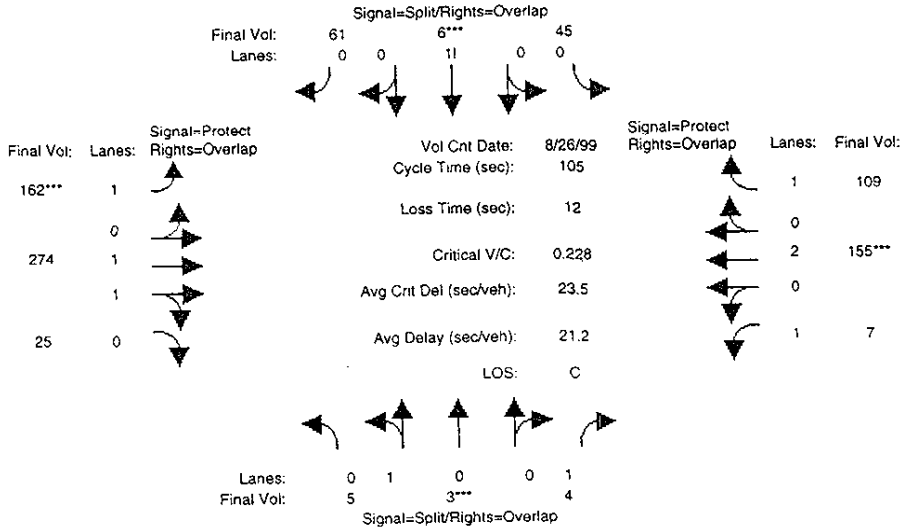
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #3849: HILLSDALE/NARVAEZ (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 26 Aug 1999 <<												
Base Vol:	5	3	4	45	6	61	162	274	25	7	155	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	3	4	45	6	61	162	274	25	7	155	109
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	3	4	45	6	61	162	274	25	7	155	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	3	4	45	6	61	162	274	25	7	155	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	3	4	45	6	61	162	274	25	7	155	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	5	3	4	45	6	61	162	274	25	7	155	109
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	0.97	0.97	0.97	0.97	1.03	1.00	0.97	1.06	0.97
Lanes:	0.62	0.38	1.00	0.40	0.05	0.55	1.00	1.83	0.17	1.00	2.00	1.00
Final Sat.:	1125	675	1750	703	94	953	1750	3390	309	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.06	0.06	0.06	0.09	0.08	0.08	0.00	0.04	0.06
Crit Moves:		****			****		****				****	
Green Time:	10.0	10.0	33.1	26.9	26.9	65.8	38.9	33.0	43.0	23.1	17.2	44.1
Volume/Cap:	0.05	0.05	0.01	0.25	0.25	0.10	0.25	0.26	0.20	0.02	0.25	0.15
Delay/Veh:	32.8	32.8	18.8	23.6	23.6	5.9	17.5	20.4	15.1	24.4	29.2	14.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.8	32.8	18.8	23.6	23.6	5.9	17.5	20.4	15.1	24.4	29.2	14.3
DesignQueue:	0	0	0	2	0	1	6	11	1	0	8	4

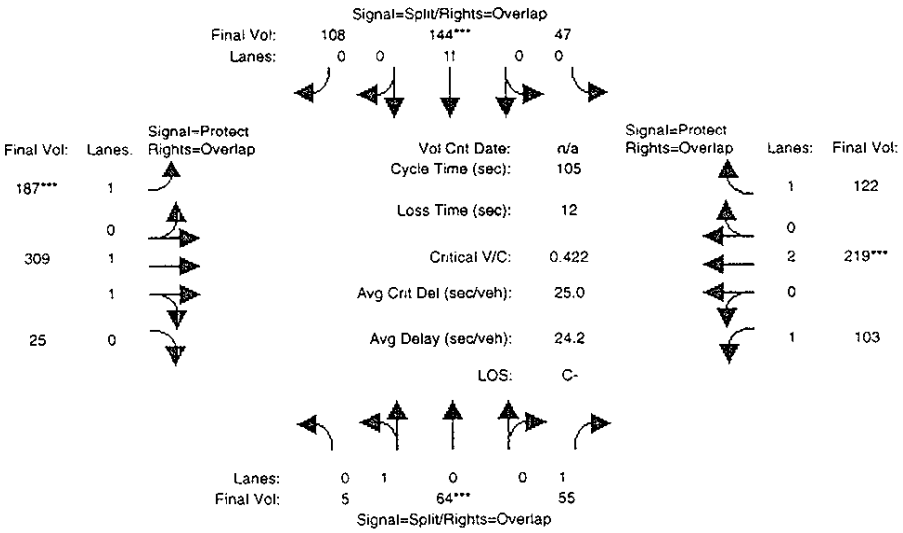
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #3849: HILLSDALE/NARVAEZ (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	5	3	4	45	6	61	162	274	25	7	155	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	3	4	45	6	61	162	274	25	7	155	109
Added Vol:	0	61	51	2	138	47	25	35	0	96	64	13
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	64	55	47	144	108	187	309	25	103	219	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	64	55	47	144	108	187	309	25	103	219	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	64	55	47	144	108	187	309	25	103	219	122
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	5	64	55	47	144	108	187	309	25	103	219	122
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	0.97	0.97	0.97	0.97	1.03	1.00	0.97	1.06	0.97
Lanes:	0.07	0.93	1.00	0.16	0.48	0.36	1.00	1.85	0.15	1.00	2.00	1.00
Final Sat.:	130	1670	1750	275	843	632	1750	3423	277	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.03	0.17	0.17	0.17	0.11	0.09	0.09	0.06	0.06	0.07
Crit Moves:		****			****		****				****	
Green Time:	10.0	10.0	26.8	42.3	42.3	68.7	26.4	23.9	33.9	16.8	14.3	56.6
Volume/Cap:	0.40	0.40	0.12	0.42	0.42	0.26	0.42	0.40	0.28	0.37	0.42	0.13
Delay/Veh:	34.8	34.8	22.9	17.4	17.4	5.8	25.4	26.3	20.1	30.3	32.0	9.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.8	34.8	22.9	17.4	17.4	5.8	25.4	26.3	20.1	30.3	32.0	9.1
DesignQueue:	0	3	2	2	5	2	8	14	1	5	11	3

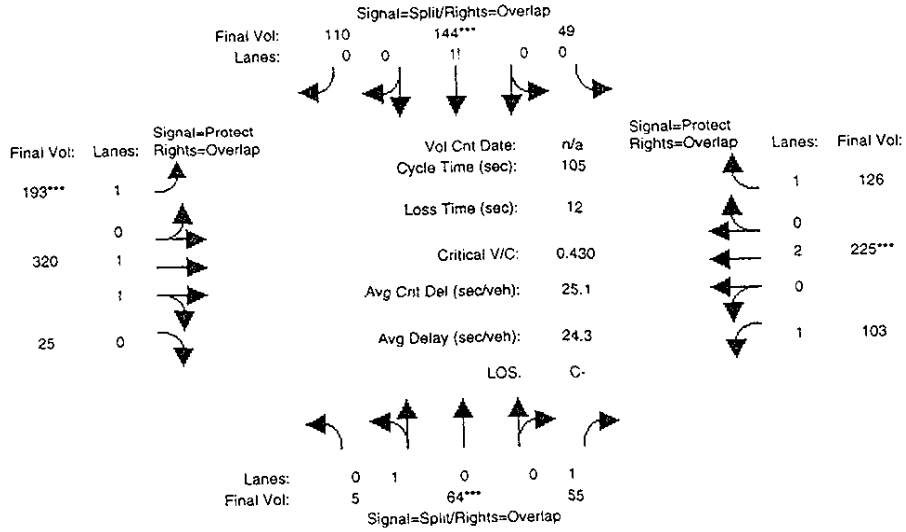
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #3849: HILLSDALE/NARVAEZ (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	5	64	55	49	144	110	193	320	25	103	225	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	64	55	49	144	110	193	320	25	103	225	126
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	64	55	49	144	110	193	320	25	103	225	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	64	55	49	144	110	193	320	25	103	225	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	64	55	49	144	110	193	320	25	103	225	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	5	64	55	49	144	110	193	320	25	103	225	126
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	0.97	0.97	0.97	0.97	1.03	1.00	0.97	1.06	0.97
Lanes:	0.07	0.93	1.00	0.16	0.48	0.36	1.00	1.85	0.15	1.00	2.00	1.00
Final Sat.:	130	1670	1750	283	832	635	1750	3432	268	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.03	0.17	0.17	0.17	0.11	0.09	0.09	0.06	0.06	0.07
Crit Moves:		****			****		****				****	
Green Time:	10.0	10.0	26.9	41.9	41.9	68.7	26.7	24.2	34.2	16.9	14.3	56.3
Volume/Cap:	0.40	0.40	0.12	0.43	0.43	0.26	0.43	0.41	0.29	0.37	0.43	0.13
Delay/Veh:	34.8	34.8	22.8	17.7	17.7	5.8	25.4	26.3	20.1	30.2	32.0	9.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.8	34.8	22.8	17.7	17.7	5.8	25.4	26.3	20.1	30.2	32.0	9.3
DesignQueue:	0	3	2	2	5	2	9	15	1	5	12	3

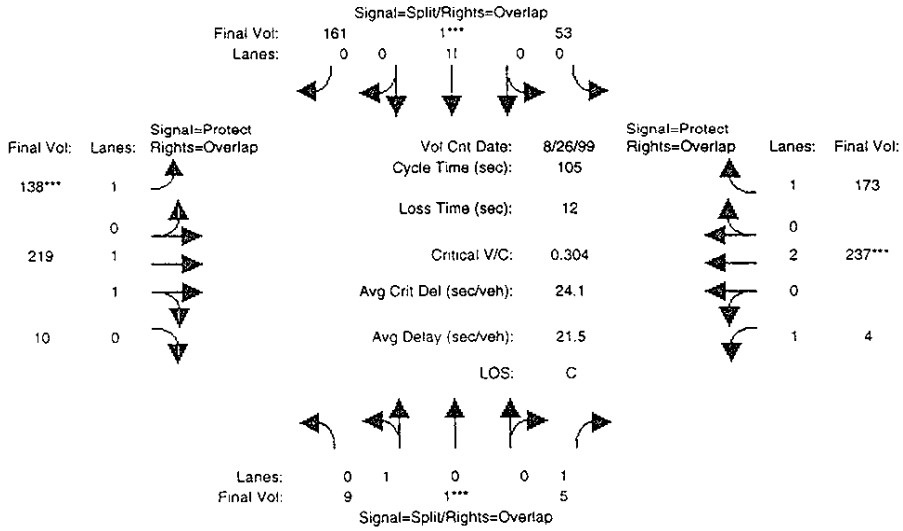
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #3849: HILLSDALE/NARVAEZ (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 26 Aug 1999 <<												
Base Vol:	9	1	5	53	1	161	138	219	10	4	237	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	1	5	53	1	161	138	219	10	4	237	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	1	5	53	1	161	138	219	10	4	237	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	1	5	53	1	161	138	219	10	4	237	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	1	5	53	1	161	138	219	10	4	237	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	9	1	5	53	1	161	138	219	10	4	237	173
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	0.97	0.97	0.97	0.97	1.03	1.00	0.97	1.06	0.97
Lanes:	0.90	0.10	1.00	0.24	0.01	0.75	1.00	1.91	0.09	1.00	2.00	1.00
Final Sat.:	1620	180	1750	431	8	1310	1750	3538	162	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.00	0.12	0.12	0.12	0.08	0.06	0.06	0.00	0.06	0.10
Crit Moves:		****			****		****				****	
Green Time:	10.0	10.0	28.3	38.6	38.6	63.4	24.8	26.1	36.1	18.3	19.6	58.2
Volume/Cap:	0.06	0.06	0.01	0.33	0.33	0.20	0.33	0.25	0.18	0.01	0.33	0.18
Delay/Veh:	32.8	32.8	21.4	18.3	18.3	7.2	25.5	24.0	18.3	27.3	28.3	8.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.8	32.8	21.4	18.3	18.3	7.2	25.5	24.0	18.3	27.3	28.3	8.8
DesignQueue:	0	0	0	2	0	4	6	10	0	0	11	5

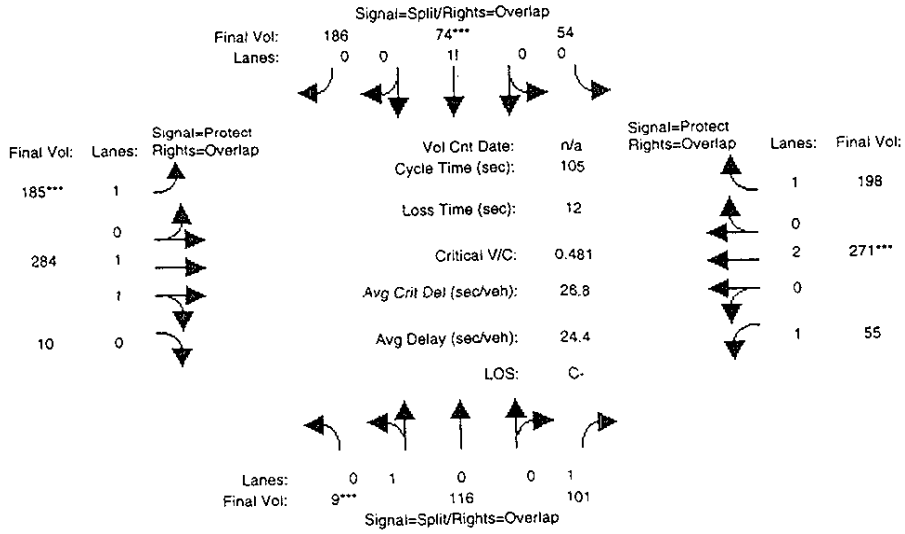
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #3849: HILLSDALE/NARVAEZ (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	9	1	5	53	1	161	138	219	10	4	237	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	1	5	53	1	161	138	219	10	4	237	173
Added Vol:	0	115	96	1	73	25	47	65	0	51	34	25
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	116	101	54	74	186	185	284	10	55	271	198
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	116	101	54	74	186	185	284	10	55	271	198
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	116	101	54	74	186	185	284	10	55	271	198
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	9	116	101	54	74	186	185	284	10	55	271	198
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	0.97	0.97	0.97	0.97	1.03	1.00	0.97	1.06	0.97
Lanes:	0.07	0.93	1.00	0.17	0.24	0.59	1.00	1.93	0.07	1.00	2.00	1.00
Final Sat.:	130	1670	1750	301	412	1037	1750	3574	126	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.06	0.18	0.18	0.18	0.11	0.08	0.08	0.03	0.07	0.11
Crit Moves:	****				****		****				****	
Green Time:	15.2	15.2	31.1	39.2	39.2	62.3	23.1	22.7	37.9	15.9	15.6	54.8
Volume/Cap:	0.48	0.48	0.19	0.48	0.48	0.30	0.48	0.37	0.22	0.21	0.48	0.22
Delay/Veh:	32.5	32.5	21.0	19.6	19.6	8.1	27.9	26.7	17.7	29.7	31.7	10.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.5	32.5	21.0	19.6	19.6	8.1	27.9	26.7	17.7	29.7	31.7	10.3
DesignQueue:	0	6	4	2	3	5	9	13	0	3	14	6

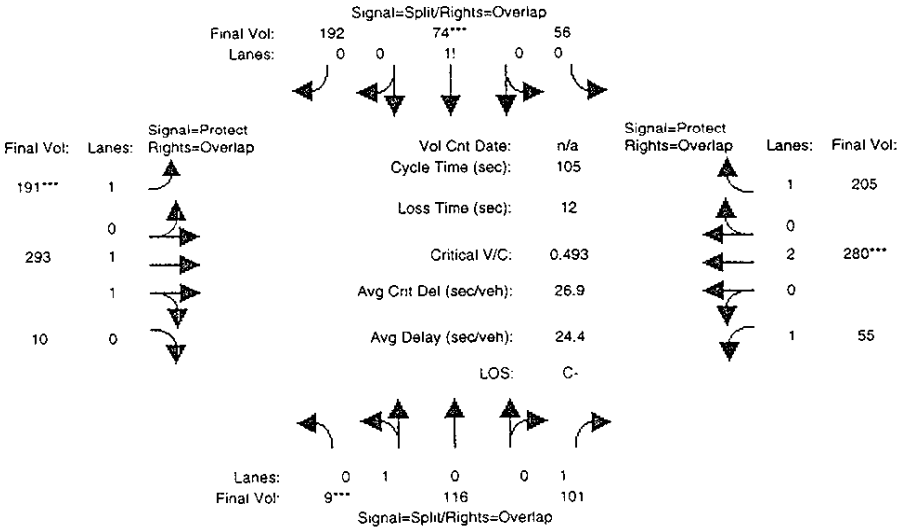
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #3849: HILLSDALE/NARVAEZ (FUT)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	9	116	101	56	74	192	191	293	10	55	280	205
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	116	101	56	74	192	191	293	10	55	280	205
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	116	101	56	74	192	191	293	10	55	280	205
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	116	101	56	74	192	191	293	10	55	280	205
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	116	101	56	74	192	191	293	10	55	280	205
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	9	116	101	56	74	192	191	293	10	55	280	205
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	0.97	0.97	0.97	0.97	1.03	1.00	0.97	1.06	0.97
Lanes:	0.07	0.93	1.00	0.17	0.23	0.60	1.00	1.93	0.07	1.00	2.00	1.00
Final Sat.:	130	1670	1750	304	402	1043	1750	3578	122	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.06	0.18	0.18	0.18	0.11	0.08	0.08	0.03	0.07	0.12
Crit Moves:	****				****		****				****	
Green Time:	14.8	14.8	30.9	39.2	39.2	62.5	23.3	22.9	37.7	16.0	15.7	54.9
Volume/Cap:	0.49	0.49	0.20	0.49	0.49	0.31	0.49	0.38	0.23	0.21	0.49	0.22
Delay/Veh:	32.9	32.9	21.1	19.7	19.7	8.1	28.0	26.7	17.9	29.6	31.7	10.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.9	32.9	21.1	19.7	19.7	8.1	28.0	26.7	17.9	29.6	31.7	10.3
DesignQueue:	0	6	4	2	3	5	9	14	0	3	14	6

99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #5506: ALMADEN/FOXWORTHY

Signal=Protect/Rights=Include

Final Vol:	73		1013		39***
Lanes:	1	0	3	0	1

Final Vol:	Lanes:	Signal=Permit Rights=Overlap
144	1	
	0	
22	1	
	0	
103	1	

Vol Cnt Date:	5/23/00
Cycle Time (sec):	182
Loss Time (sec):	9
Critical V/C:	0.781
Avg Crit Del (sec/veh):	11.4
Avg Delay (sec/veh):	15.2
LOS:	C

Signal=Permit Rights=Overlap	Lanes:	Final Vol:
	1	204***
	0	
	1	40
	0	
	1	38

Lanes:	1	0	3	0	1
Final Vol:	114		3567***		15

Signal=Protect/Rights=Include

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module: >> Count Date: 23 May 2000 << 0.902												
Base Vol:	114	3567	15	39	1013	73	144	22	103	38	40	204
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	3567	15	39	1013	73	144	22	103	38	40	204
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	3567	15	39	1013	73	144	22	103	38	40	204
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	3567	15	39	1013	73	144	22	103	38	40	204
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	3567	15	39	1013	73	144	22	103	38	40	204
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	114	3567	15	39	1013	73	144	22	103	38	40	204
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.63	0.01	0.02	0.18	0.04	0.08	0.01	0.06	0.02	0.02	0.12
Crit Moves:		****		****								****
Green/Cycle:	0.23	0.81	0.81	0.04	0.62	0.62	0.10	0.10	0.33	0.10	0.10	0.14
Volume/Cap:	0.29	0.77	0.01	0.58	0.29	0.07	0.81	0.11	0.18	0.21	0.21	0.83
Delay/Veh:	44.2	7.2	2.5	73.6	12.1	10.3	77.1	56.5	33.1	57.2	57.2	72.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.2	7.2	2.5	73.6	12.1	10.3	77.1	56.5	33.1	57.2	57.2	72.5
DesignQueue:	9	82	0	4	41	3	13	2	7	3	4	18

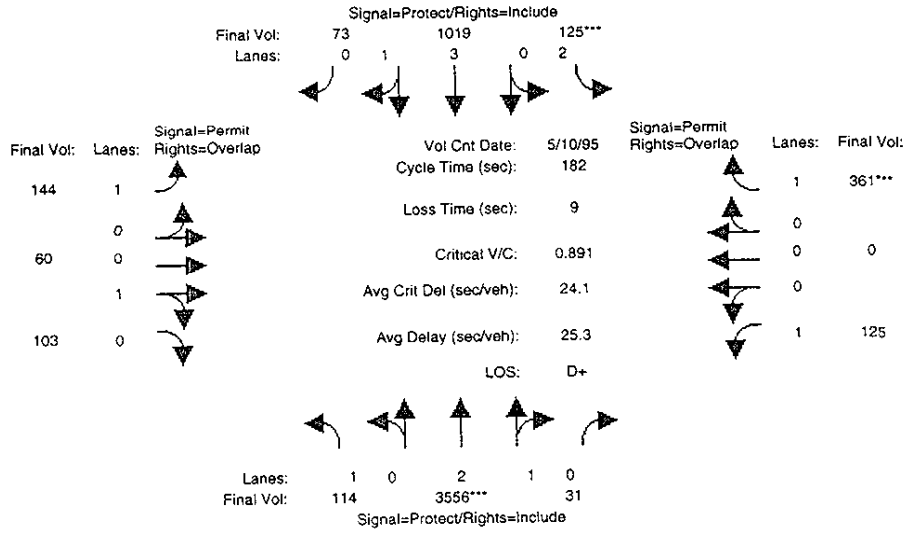
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5506: ALMADEN/FOXWORTHY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Min. Green:	7	10	10	7	10	10	10	10	10	10	0	10
Volume Module: >> Count Date: 10 May 1995 << 0.902												
Base Vol:	114	3556	31	125	1019	73	144	60	103	125	0	361
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	3556	31	125	1019	73	144	60	103	125	0	361
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	3556	31	125	1019	73	144	60	103	125	0	361
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	114	3556	31	125	1019	73	144	60	103	125	0	361
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	3556	31	125	1019	73	144	60	103	125	0	361
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	114	3556	31	125	1019	73	144	60	103	125	0	361
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.88	1.04	1.00	0.97	1.00	1.00	0.97	1.06	0.97
Lanes:	1.00	2.97	0.03	2.00	3.72	0.28	1.00	0.37	0.63	1.00	0.00	1.00
Final Sat.:	1750	5552	48	3150	6998	501	1750	663	1137	1750	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.64	0.64	0.04	0.15	0.15	0.08	0.09	0.09	0.07	0.00	0.21
Crit Moves:		****		****								****
Green Time:	43.0	131	130.9	8.1	96.0	96.0	34.0	34.0	77.0	34.0	0.0	42.1
Volume/Cap:	0.28	0.89	0.89	0.89	0.28	0.28	0.44	0.48	0.21	0.38	0.00	0.89
Delay/Veh:	43.3	17.3	17.3	97.0	18.1	18.1	50.4	51.1	25.3	49.6	0.0	66.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.3	17.3	17.3	97.0	18.1	18.1	50.4	51.1	25.3	49.6	0.0	66.3
DesignQueue:	9	121	1	12	51	4	12	5	6	10	0	30

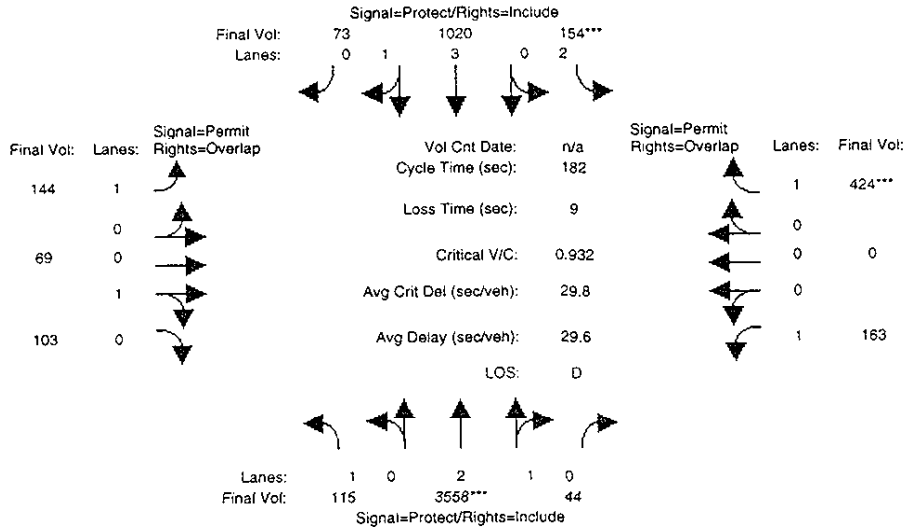
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5506: ALMADEN/FOXWORTHY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	0	10
Volume Module:												
Base Vol:	114	3556	31	125	1019	73	144	60	103	125	0	361
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	114	3556	31	125	1019	73	144	60	103	125	0	361
Added Vol:	1	2	13	29	1	0	0	9	0	38	0	63
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	3558	44	154	1020	73	144	69	103	163	0	424
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	115	3558	44	154	1020	73	144	69	103	163	0	424
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	3558	44	154	1020	73	144	69	103	163	0	424
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	115	3558	44	154	1020	73	144	69	103	163	0	424
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.88	1.04	1.00	0.97	1.00	1.00	0.97	1.06	0.97
Lanes:	1.00	2.96	0.04	2.00	3.72	0.28	1.00	0.40	0.60	1.00	0.00	1.00
Final Sat.:	1750	5532	68	3150	6998	501	1750	722	1078	1750	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.64	0.64	0.05	0.15	0.15	0.08	0.10	0.10	0.09	0.00	0.24
Crit Moves:		****		****								****
Green Time:	42.0	126	125.7	9.6	93.2	93.2	37.8	37.8	79.8	37.8	0.0	47.3
Volume/Cap:	0.28	0.93	0.93	0.93	0.28	0.28	0.40	0.46	0.22	0.45	0.00	0.93
Delay/Veh:	43.9	22.2	22.2	101.2	19.3	19.3	47.7	48.7	24.1	48.5	0.0	68.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.9	22.2	22.2	101.2	19.3	19.3	47.7	48.7	24.1	48.5	0.0	68.7
DesignQueue:	9	134	2	15	52	4	12	6	6	13	0	34

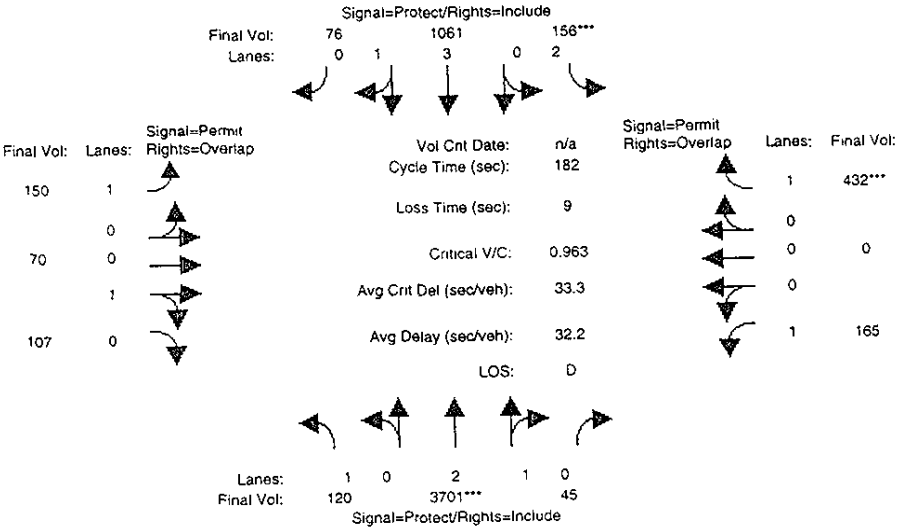
99-088

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5506: ALMADEN/FOXWORTHY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	0	10
Volume Module:												
Base Vol:	120	3701	45	156	1061	76	150	70	107	165	0	432
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	120	3701	45	156	1061	76	150	70	107	165	0	432
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	120	3701	45	156	1061	76	150	70	107	165	0	432
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	120	3701	45	156	1061	76	150	70	107	165	0	432
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	3701	45	156	1061	76	150	70	107	165	0	432
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	120	3701	45	156	1061	76	150	70	107	165	0	432
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.88	1.04	1.00	0.97	1.00	1.00	0.97	1.06	0.97
Lanes:	1.00	2.96	0.04	2.00	3.72	0.28	1.00	0.40	0.60	1.00	0.00	1.00
Final Sat.:	1750	5533	67	3150	6998	501	1750	712	1088	1750	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.67	0.67	0.05	0.15	0.15	0.09	0.10	0.10	0.09	0.00	0.25
Crit Moves:		****		****								****
Green Time:	42.3	126	126.4	9.4	93.5	93.5	37.3	37.3	79.5	37.3	0.0	46.6
Volume/Cap:	0.30	0.96	0.96	0.96	0.30	0.30	0.42	0.48	0.22	0.46	0.00	0.96
Delay/Veh:	43.9	25.3	25.3	109.5	19.3	19.3	48.3	49.3	24.3	49.0	0.0	75.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.9	25.3	25.3	109.5	19.3	19.3	48.3	49.3	24.3	49.0	0.0	75.3
DesignQueue:	9	138	2	15	54	4	12	6	6	14	0	35

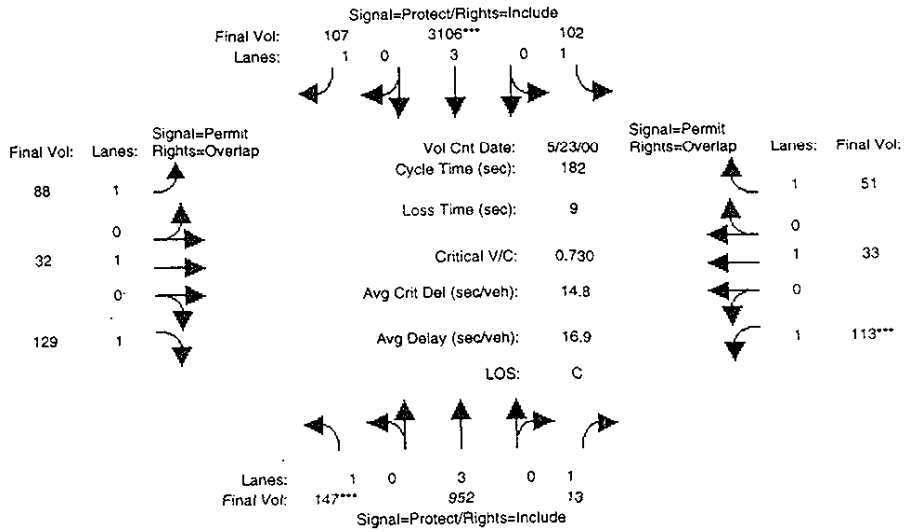
98-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #5506: ALMADEN/FOXWORTHY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module: >> Count Date: 23 May 2000 <<												
Base Vol:	147	952	13	102	3106	107	88	32	129	113	33	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	147	952	13	102	3106	107	88	32	129	113	33	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	147	952	13	102	3106	107	88	32	129	113	33	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	147	952	13	102	3106	107	88	32	129	113	33	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	147	952	13	102	3106	107	88	32	129	113	33	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	147	952	13	102	3106	107	88	32	129	113	33	51
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	1750	1900	1750	1750	1900	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.17	0.01	0.06	0.54	0.06	0.05	0.02	0.07	0.06	0.02	0.03
Crit Moves:	****				****					****		
Green/Cycle:	0.12	0.64	0.64	0.22	0.75	0.75	0.09	0.09	0.20	0.09	0.09	0.31
Volume/Cap:	0.73	0.26	0.01	0.26	0.73	0.08	0.57	0.19	0.36	0.73	0.20	0.09
Delay/Veh:	67.6	10.8	9.1	44.4	10.2	4.7	64.0	58.5	47.6	72.0	58.6	33.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.6	10.8	9.1	44.4	10.2	4.7	64.0	58.5	47.6	72.0	58.6	33.8
DesignQueue:	13	36	0	8	93	3	8	3	11	11	3	4

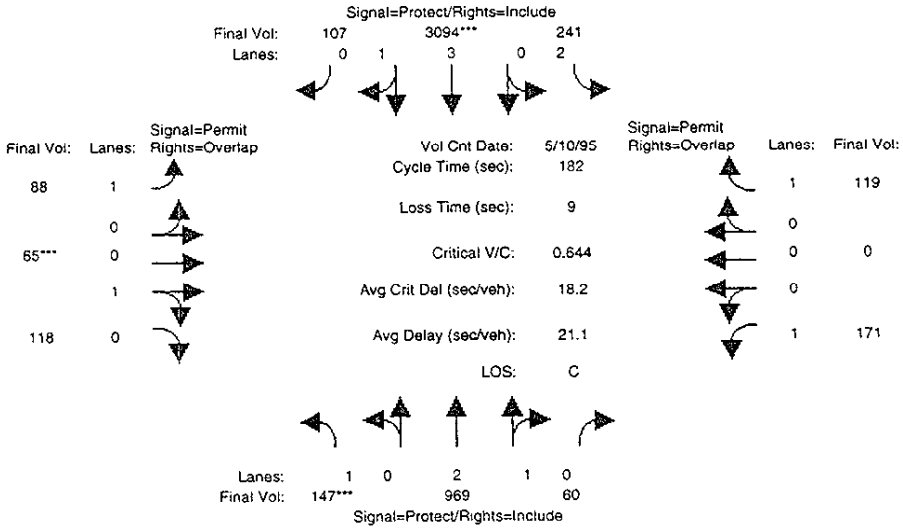
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5506: ALMADEN/FOXWORTHY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	0	10
Volume Module: >> Count Date: 10 May 1995 <<												
Base Vol:	147	969	60	241	3094	107	88	65	118	171	0	119
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	147	969	60	241	3094	107	88	65	118	171	0	119
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	147	969	60	241	3094	107	88	65	118	171	0	119
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	147	969	60	241	3094	107	88	65	118	171	0	119
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	147	969	60	241	3094	107	88	65	118	171	0	119
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	147	969	60	241	3094	107	88	65	118	171	0	119
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.88	1.04	1.00	0.97	1.00	1.00	0.97	1.06	0.97
Lanes:	1.00	2.82	0.18	2.00	3.86	0.14	1.00	0.36	0.64	1.00	0.00	1.00
Final Sat.:	1750	5273	327	3150	7249	251	1750	639	1161	1750	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.18	0.18	0.08	0.43	0.43	0.05	0.10	0.10	0.10	0.00	0.07
Crit Moves:	****				****			****				
Green Time:	23.7	102	101.9	42.4	121	120.6	28.7	28.7	52.4	28.7	0.0	71.1
Volume/Cap:	0.64	0.33	0.33	0.33	0.64	0.64	0.32	0.64	0.35	0.62	0.00	0.17
Delay/Veh:	61.3	16.4	16.4	44.2	14.0	14.0	51.9	58.0	39.2	57.3	0.0	27.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.3	16.4	16.4	44.2	14.0	14.0	51.9	58.0	39.2	57.3	0.0	27.6
DesignQueue:	13	45	3	19	119	4	8	6	9	15	0	7

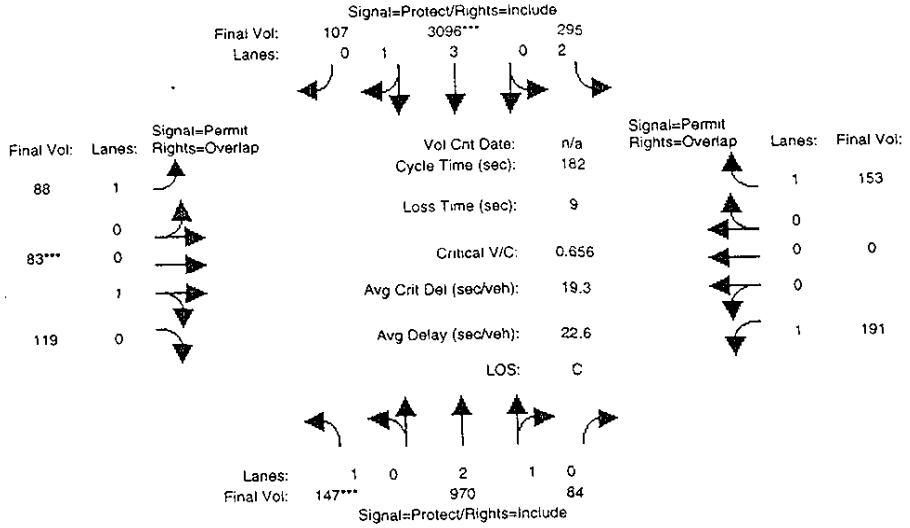
98-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5506: ALMADEN/FOXWORTHY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	0	10
Volume Module:												
Base Vol:	147	969	60	241	3094	107	88	65	118	171	0	119
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	147	969	60	241	3094	107	88	65	118	171	0	119
Added Vol:	0	1	24	54	2	0	0	18	1	20	0	34
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	147	970	84	295	3096	107	88	83	119	191	0	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	147	970	84	295	3096	107	88	83	119	191	0	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	147	970	84	295	3096	107	88	83	119	191	0	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	147	970	84	295	3096	107	88	83	119	191	0	153
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.88	1.04	1.00	0.97	1.00	1.00	0.97	1.06	0.97
Lanes:	1.00	2.75	0.25	2.00	3.86	0.14	1.00	0.41	0.59	1.00	0.00	1.00
Final Sat.:	1750	5153	446	3150	7249	251	1750	740	1060	1750	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.19	0.19	0.09	0.43	0.43	0.05	0.11	0.11	0.11	0.00	0.09
Crit Moves:	****				****			****				
Green Time:	23.3	94.7	94.7	47.1	119	118.5	31.1	31.1	54.5	31.1	0.0	78.3
Volume/Cap:	0.66	0.36	0.36	0.36	0.66	0.66	0.29	0.66	0.38	0.64	0.00	0.20
Delay/Veh:	62.0	19.6	19.6	42.0	14.9	14.9	50.2	57.0	38.5	56.5	0.0	24.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.0	19.6	19.6	42.0	14.9	14.9	50.2	57.0	38.5	56.5	0.0	24.6
DesignQueue:	13	49	4	23	123	4	7	7	9	16	0	9

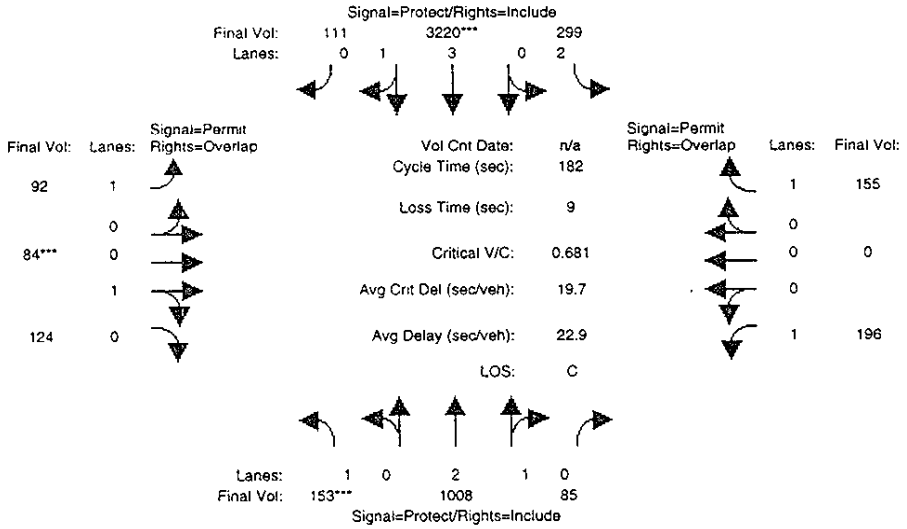
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5506: ALMADEN/FOXWORTHY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	0	10
Volume Module:												
Base Vol:	153	1008	85	299	3220	111	92	84	124	196	0	155
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	153	1008	85	299	3220	111	92	84	124	196	0	155
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	153	1008	85	299	3220	111	92	84	124	196	0	155
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	153	1008	85	299	3220	111	92	84	124	196	0	155
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	1008	85	299	3220	111	92	84	124	196	0	155
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	153	1008	85	299	3220	111	92	84	124	196	0	155
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.88	1.04	1.00	0.97	1.00	1.00	0.97	1.06	0.97
Lanes:	1.00	2.76	0.24	2.00	3.86	0.14	1.00	0.40	0.60	1.00	0.00	1.00
Final Sat.:	1750	5164	435	3150	7250	250	1750	727	1073	1750	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.20	0.20	0.09	0.44	0.44	0.05	0.12	0.12	0.11	0.00	0.09
Crit Moves:	****				****			****				
Green Time:	23.4	95.6	95.6	46.5	119	118.7	30.9	30.9	54.3	30.9	0.0	77.4
Volume/Cap:	0.68	0.37	0.37	0.37	0.68	0.68	0.31	0.68	0.39	0.66	0.00	0.21
Delay/Veh:	63.1	19.4	19.4	42.5	15.3	15.3	50.5	58.0	38.8	57.4	0.0	25.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.1	19.4	19.4	42.5	15.3	15.3	50.5	58.0	38.8	57.4	0.0	25.1
DesignQueue:	14	51	4	23	128	4	8	7	9	17	0	9

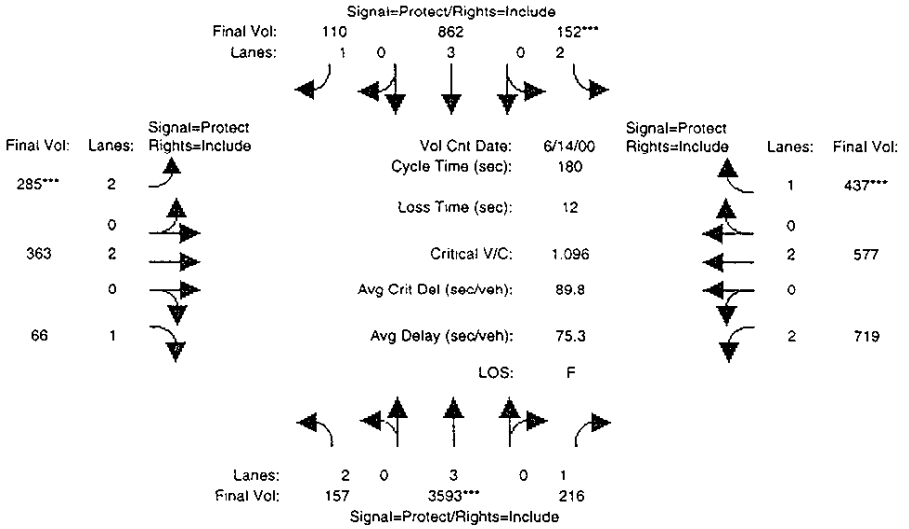
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #5512: ALMADEN/BRANHAM



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	80	10	7	90	10	7	10	10	7	10	10
Volume Module: >> Count Date: 14 Jun 2000 <<												
Base Vol:	157	3593	216	152	862	110	285	363	66	719	577	437
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	3593	216	152	862	110	285	363	66	719	577	437
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	157	3593	216	152	862	110	285	363	66	719	577	437
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	157	3593	216	152	862	110	285	363	66	719	577	437
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	3593	216	152	862	110	285	363	66	719	577	437
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	157	3593	216	152	862	110	285	363	66	719	577	437
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.83	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3000	3800	1200	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.63	0.12	0.05	0.15	0.06	0.10	0.10	0.06	0.23	0.15	0.25
Crit Moves:		****		****			****					****
Green/Cycle:	0.12	0.57	0.57	0.04	0.50	0.50	0.09	0.09	0.09	0.22	0.23	0.23
Volume/Cap:	0.42	1.10	0.21	1.10	0.30	0.13	1.10	1.03	0.59	1.03	0.67	1.10
Delay/Veh:	56.3	78.7	14.1	162.4	20.2	18.3	140.7	108	65.3	87.9	49.5	122.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.3	78.7	14.1	162.4	20.2	18.3	140.7	108	65.3	87.9	49.5	122.4
DesignQueue:	14	183	9	15	45	6	27	34	6	59	46	36

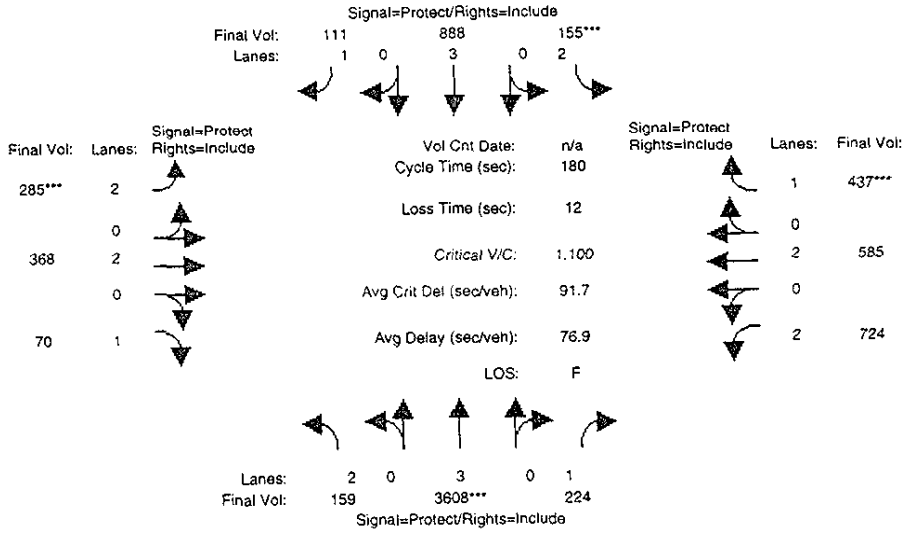
99-088

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5512: ALMADEN/BRANHAM



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	80	10	7	90	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	159	3608	224	155	888	111	285	368	70	724	585	437
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	3608	224	155	888	111	285	368	70	724	585	437
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	3608	224	155	888	111	285	368	70	724	585	437
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	3608	224	155	888	111	285	368	70	724	585	437
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	3608	224	155	888	111	285	368	70	724	585	437
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	159	3608	224	155	888	111	285	368	70	724	585	437
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.83	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3000	3800	1200	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.63	0.13	0.05	0.16	0.06	0.10	0.10	0.06	0.23	0.15	0.25
Crit Moves:		****		****			****					****
Green Time:	21.6	104	103.6	8.1	90.0	90.0	15.5	16.7	16.7	39.7	40.9	40.9
Volume/Cap:	0.42	1.10	0.22	1.10	0.31	0.13	1.10	1.04	0.63	1.04	0.68	1.10
Delay/Veh:	56.2	80.6	14.2	163.6	20.3	18.3	142.6	112	67.0	92.2	49.8	124.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.2	80.6	14.2	163.6	20.3	18.3	142.6	112	67.0	92.2	49.8	124.3
DesignQueue:	14	184	10	15	46	6	27	34	6	59	47	36

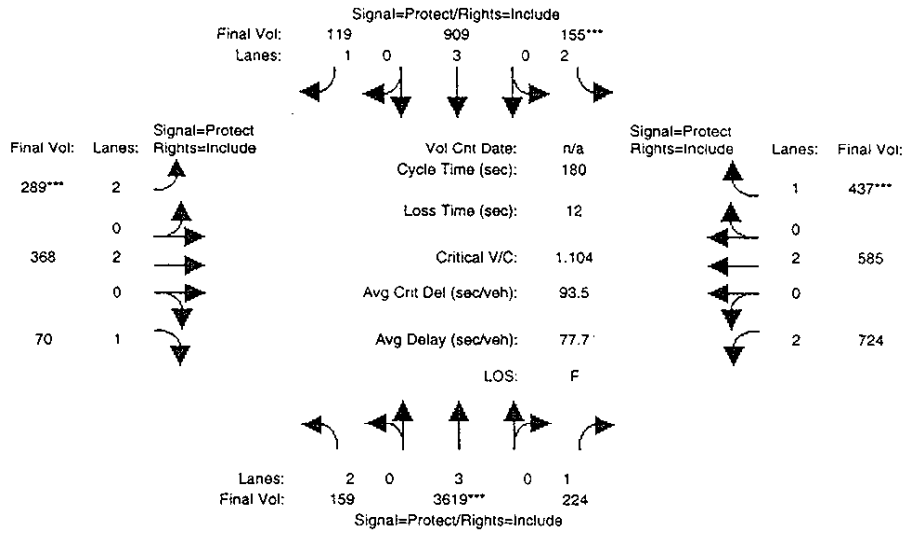
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5512: ALMADEN/BRANHAM



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	80	10	7	90	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	159	3608	224	155	888	111	285	368	70	724	585	437
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	3608	224	155	888	111	285	368	70	724	585	437
Added Vol:	0	11	0	0	21	8	4	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	3619	224	155	909	119	289	368	70	724	585	437
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	3619	224	155	909	119	289	368	70	724	585	437
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	3619	224	155	909	119	289	368	70	724	585	437
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	159	3619	224	155	909	119	289	368	70	724	585	437
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.83	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3000	3800	1200	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.63	0.13	0.05	0.16	0.07	0.10	0.10	0.06	0.23	0.15	0.25
Crit Moves:		****		****			****					****
Green Time:	21.6	104	103.5	8.0	90.0	90.0	15.7	16.7	16.7	39.7	40.7	40.7
Volume/Cap:	0.42	1.10	0.22	1.10	0.32	0.14	1.10	1.04	0.63	1.04	0.68	1.10
Delay/Veh:	56.3	82.5	14.2	165.4	20.4	18.4	143.9	112	67.0	92.0	49.9	126.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.3	82.5	14.2	165.4	20.4	18.4	143.9	112	67.0	92.0	49.9	126.0
DesignQueue:	14	185	10	15	47	6	27	34	6	59	47	36

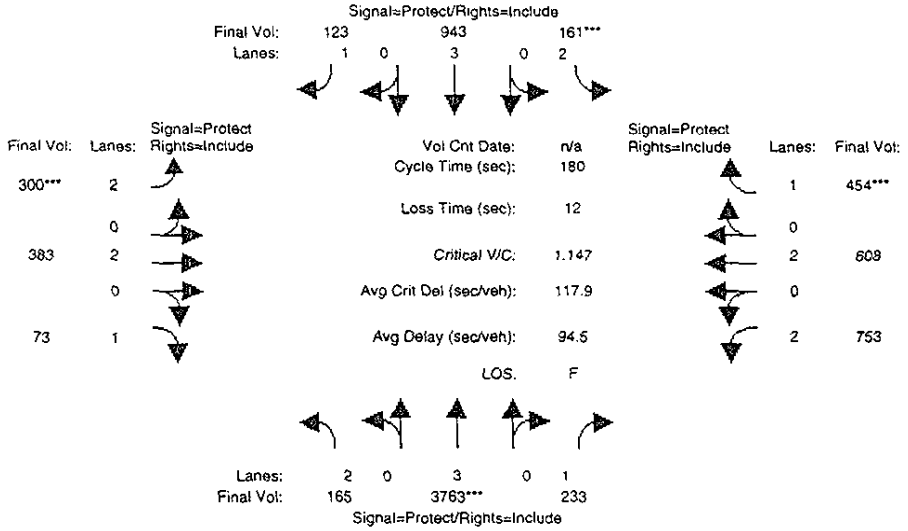
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5512: ALMADEN/BRANHAM



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	80	10	7	90	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	165	3763	233	161	943	123	300	383	73	753	608	454
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	3763	233	161	943	123	300	383	73	753	608	454
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	3763	233	161	943	123	300	383	73	753	608	454
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	165	3763	233	161	943	123	300	383	73	753	608	454
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	3763	233	161	943	123	300	383	73	753	608	454
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	165	3763	233	161	943	123	300	383	73	753	608	454
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.83	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3000	3800	1200	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.66	0.13	0.05	0.17	0.07	0.10	0.10	0.06	0.24	0.16	0.26
Crit Moves:		****		****			****					****
Green Time:	21.6	104	103.6	8.0	90.0	90.0	15.7	16.7	16.7	39.7	40.7	40.7
Volume/Cap:	0.44	1.15	0.23	1.15	0.33	0.14	1.15	1.08	0.65	1.08	0.71	1.15
Delay/Veh:	56.4	107	14.2	188.2	20.5	18.4	165.8	128	68.6	108.4	50.6	148.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.4	107	14.2	188.2	20.5	18.4	165.8	128	68.6	108.4	50.6	148.2
DesignQueue:	15	193	10	16	49	6	28	36	7	62	49	37

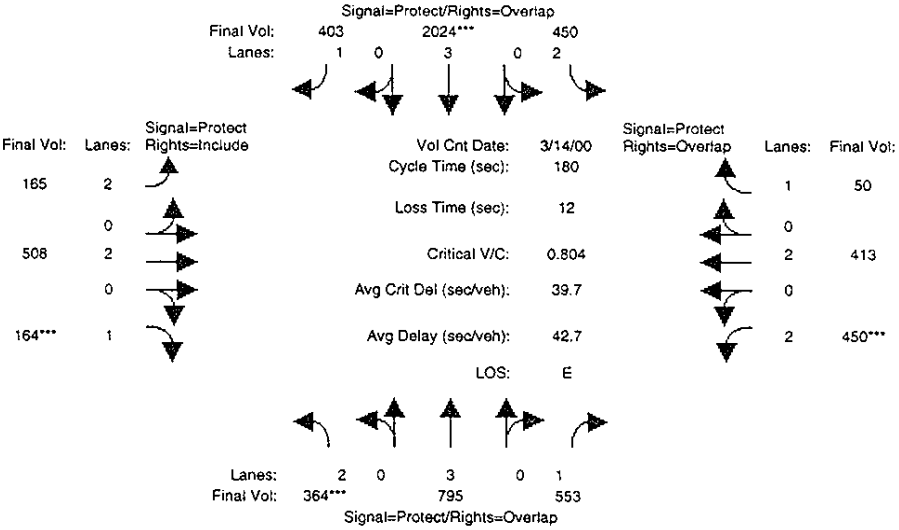
99-088

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #5512: ALMADEN/BRANHAM



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	80	10	7	90	10	7	10	10	7	10	10
Volume Module: >> Count Date: 14 Mar 2000 <<												
Base Vol:	364	795	553	450	2024	403	165	508	164	450	413	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	364	795	553	450	2024	403	165	508	164	450	413	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	364	795	553	450	2024	403	165	508	164	450	413	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	364	795	553	450	2024	403	165	508	164	450	413	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	364	795	553	450	2024	403	165	508	164	450	413	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	364	795	553	450	2024	403	165	508	164	450	413	50
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.83	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3000	3800	1200	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.14	0.32	0.14	0.36	0.23	0.06	0.13	0.14	0.14	0.11	0.03
Crit Moves:	****				****				****	****		
Green/Cycle:	0.13	0.44	0.60	0.18	0.50	0.60	0.10	0.15	0.15	0.16	0.20	0.39
Volume/Cap:	0.91	0.31	0.53	0.78	0.71	0.38	0.53	0.89	0.91	0.91	0.53	0.07
Delay/Veh:	76.6	24.6	16.3	58.2	27.1	14.1	59.7	68.6	87.4	71.8	49.3	26.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.35	1.35	1.00	0.78	0.72	1.00	1.16	1.16	1.00	1.48	1.48
AdjDel/Veh:	76.6	33.2	22.0	58.2	21.0	10.2	59.7	79.7	101.0	71.8	72.9	39.3
DesignQueue:	33	46	24	38	112	17	15	45	14	39	34	3

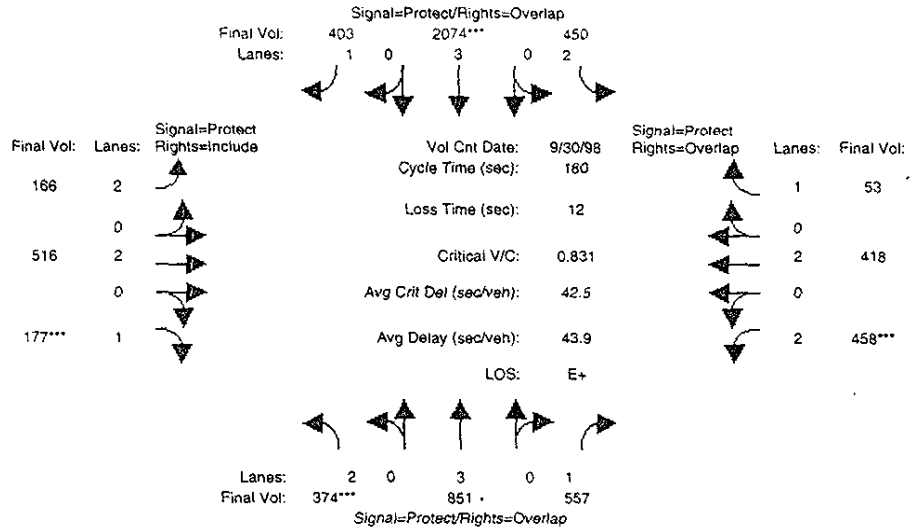
99-089

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5512: ALMADEN/BRANHAM



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	80	10	7	90	10	7	10	10	7	10	10
Volume Module: >> Count Date: 30 Sep 1998 <<												
Base Vol:	374	851	557	450	2074	403	166	516	177	458	418	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	374	851	557	450	2074	403	166	516	177	458	418	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	374	851	557	450	2074	403	166	516	177	458	418	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	374	851	557	450	2074	403	166	516	177	458	418	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	374	851	557	450	2074	403	166	516	177	458	418	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	374	851	557	450	2074	403	166	516	177	458	418	53
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.83	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3000	3800	1200	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.15	0.32	0.14	0.36	0.23	0.06	0.14	0.15	0.15	0.11	0.03
Crit Moves:	****				****				****	****		
Green Time:	22.5	80.0	107.6	32.5	90.0	108.6	18.6	28.0	28.0	27.6	36.9	69.4
Volume/Cap:	0.95	0.34	0.53	0.79	0.73	0.38	0.54	0.87	0.95	0.95	0.54	0.08
Delay/Veh:	83.3	24.8	16.7	58.8	27.6	14.1	59.7	66.2	94.7	78.4	49.1	26.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.35	1.35	1.00	0.78	0.72	1.00	1.17	1.14	1.00	1.48	1.48
AdjDel/Veh:	83.3	33.5	22.5	58.8	21.6	10.2	59.7	77.4	108.0	78.4	72.7	39.4
DesignQueue:	34	49	24	38	115	17	15	45	15	40	34	13

99 - 088

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5512: ALMADEN/BRANHAM

Signal=Protect/Rights=Overlap

Final Vol:	407		2085***		450
Lanes:	1	0	3	0	2

Final Vol:	Lanes:	Signal=Protect Rights=Include
174	2	
	0	
516	2	
	0	
177***	1	

Vol Cnt Date:	n/a
Cycle Time (sec):	180
Loss Time (sec):	12
Critical V/C:	0.833
Avg Crit Del (sec/veh):	42.5
Avg Delay (sec/veh):	43.9
LOS:	E+

Signal=Protect Rights=Overlap	Lanes:	Final Vol:
	1	53
	0	
	2	418
	0	
	2	458***

Lanes:	2	0	3	0	1
Final Vol:	374***		872		557

Signal=Protect/Rights=Overlap

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	80	10	7	90	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	374	851	557	450	2074	403	166	516	177	458	418	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	374	851	557	450	2074	403	166	516	177	458	418	53
Added Vol:	0	21	0	0	11	4	8	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	374	872	557	450	2085	407	174	516	177	458	418	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	374	872	557	450	2085	407	174	516	177	458	418	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	374	872	557	450	2085	407	174	516	177	458	418	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	374	872	557	450	2085	407	174	516	177	458	418	53
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.83	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3000	3800	1200	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.15	0.32	0.14	0.37	0.23	0.06	0.14	0.15	0.15	0.11	0.03
Crit Moves:	****				****				****	****		
Green Time:	22.5	80.0	107.6	32.5	90.0	109.2	19.2	28.0	28.0	27.6	36.3	68.8
Volume/Cap:	0.95	0.34	0.53	0.79	0.73	0.38	0.54	0.87	0.95	0.95	0.54	0.08
Delay/Veh:	83.3	25.0	16.7	58.8	27.7	13.9	59.5	66.2	94.7	78.4	49.6	26.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.35	1.35	1.00	0.79	0.72	1.00	1.17	1.14	1.00	1.48	1.48
AdjDel/Veh:	83.3	33.7	22.5	58.8	21.7	10.0	59.5	77.4	108.0	78.4	73.4	39.8
DesignQueue:	34	50	24	38	115	17	16	45	15	40	34	3

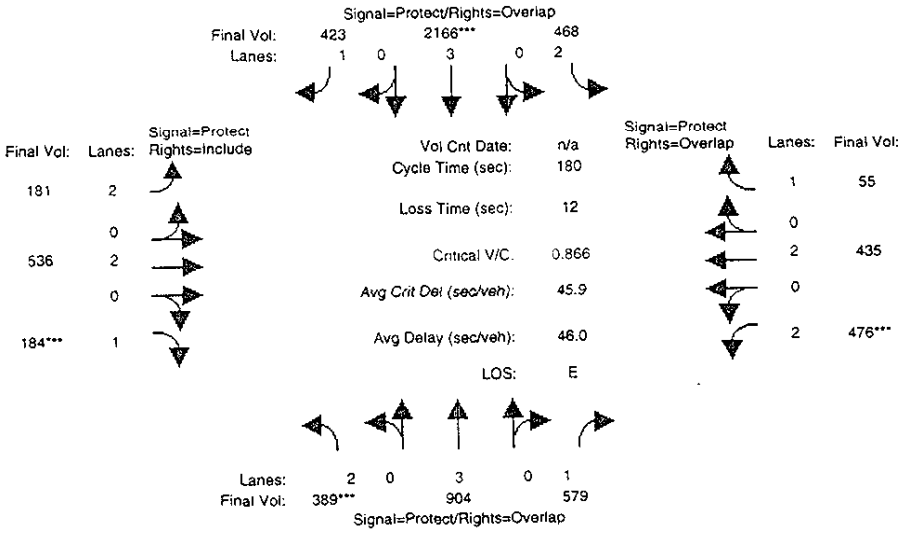
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5512: ALMADEN/BRANHAM



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	80	10	7	90	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	389	904	579	468	2166	423	181	536	184	476	435	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	389	904	579	468	2166	423	181	536	184	476	435	55
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	389	904	579	468	2166	423	181	536	184	476	435	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	389	904	579	468	2166	423	181	536	184	476	435	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	389	904	579	468	2166	423	181	536	184	476	435	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	389	904	579	468	2166	423	181	536	184	476	435	55
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.83	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3000	3800	1200	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.16	0.33	0.15	0.38	0.24	0.06	0.14	0.15	0.15	0.11	0.03
Crit Moves:	****				****				****	****		
Green Time:	22.5	80.0	107.5	32.5	90.0	109.2	19.2	27.9	27.9	27.5	36.3	68.8
Volume/Cap:	0.99	0.36	0.55	0.82	0.76	0.40	0.57	0.91	0.99	0.99	0.57	0.08
Delay/Veh:	91.5	25.1	17.1	60.5	28.5	14.1	59.9	69.7	104.7	86.3	50.0	26.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.35	1.35	1.00	0.80	0.72	1.00	1.16	1.12	1.00	1.48	1.48
AdjDel/Veh:	91.5	33.9	23.0	60.5	22.8	10.2	59.9	80.6	117.8	86.3	73.9	39.9
DesignQueue:	35	52	25	40	120	18	16	47	16	42	36	3

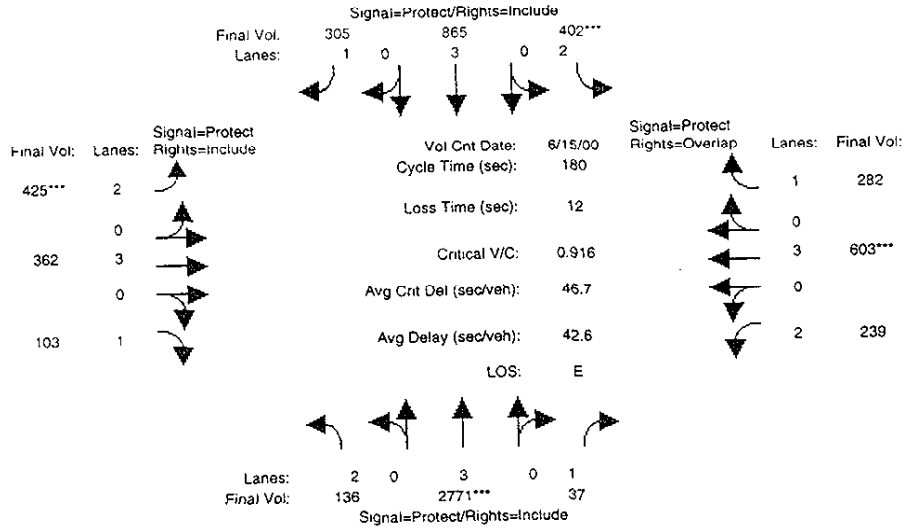
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #5513: ALMADEN/BLOSSOM HILL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 15 Jun 2000 <<												
Base Vol:	136	2771	37	402	865	305	425	362	103	239	603	282
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	136	2771	37	402	865	305	425	362	103	239	603	282
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	136	2771	37	402	865	305	425	362	103	239	603	282
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	136	2771	37	402	865	305	425	362	103	239	603	282
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	136	2771	37	402	865	305	425	362	103	239	603	282
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	136	2771	37	402	865	305	425	362	103	239	603	282
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1200	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.49	0.02	0.13	0.15	0.17	0.13	0.06	0.09	0.08	0.11	0.16
Crit Moves:		****		****			****				****	
Green/Cycle:	0.13	0.53	0.53	0.14	0.54	0.54	0.15	0.14	0.14	0.12	0.12	0.25
Volume/Cap:	0.32	0.92	0.04	0.92	0.28	0.32	0.92	0.46	0.62	0.62	0.92	0.63
Delay/Veh:	53.9	32.9	15.4	75.0	17.3	17.8	73.8	54.4	60.0	58.9	72.4	47.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.9	32.9	15.4	75.0	17.3	17.8	73.8	54.4	60.0	58.9	72.4	47.3
DesignQueue:	12	149	2	36	42	15	37	32	9	21	55	22

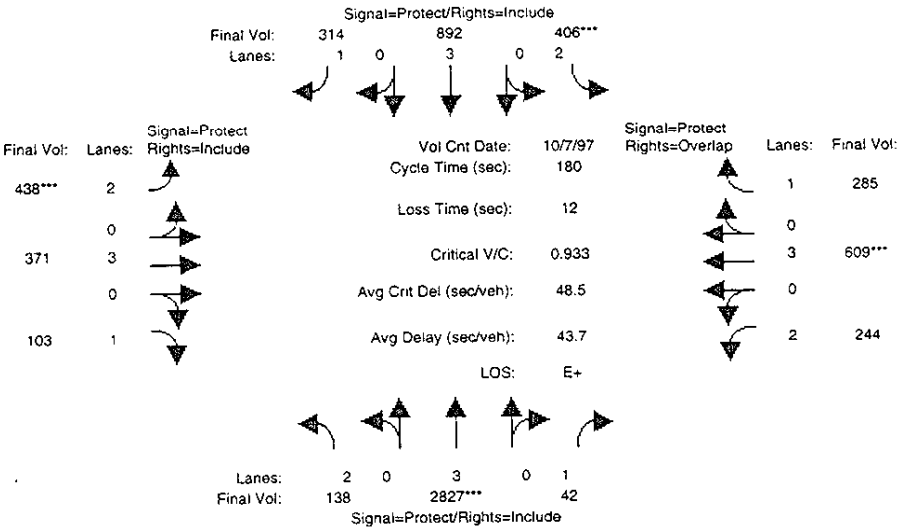
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5513: ALMADEN/BLOSSOM HILL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 7 Oct 1997 <<												
Base Vol:	138	2827	42	406	892	314	438	371	103	244	609	285
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	2827	42	406	892	314	438	371	103	244	609	285
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	138	2827	42	406	892	314	438	371	103	244	609	285
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	138	2827	42	406	892	314	438	371	103	244	609	285
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	2827	42	406	892	314	438	371	103	244	609	285
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	138	2827	42	406	892	314	438	371	103	244	609	285
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1200	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.50	0.02	0.13	0.16	0.18	0.14	0.07	0.09	0.08	0.11	0.16
Crit Moves:		****		****			****				****	
Green Time:	23.7	95.7	95.7	24.9	96.9	96.9	26.8	24.9	24.9	22.5	20.6	45.5
Volume/Cap:	0.33	0.93	0.05	0.93	0.29	0.33	0.93	0.47	0.62	0.62	0.93	0.64
Delay/Veh:	54.1	34.3	15.4	77.9	17.3	17.8	76.1	54.6	60.3	58.9	74.9	47.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.1	34.3	15.4	77.9	17.3	17.8	76.1	54.6	60.3	58.9	74.9	47.9
DesignQueue:	12	152	2	36	43	15	38	33	9	22	55	22

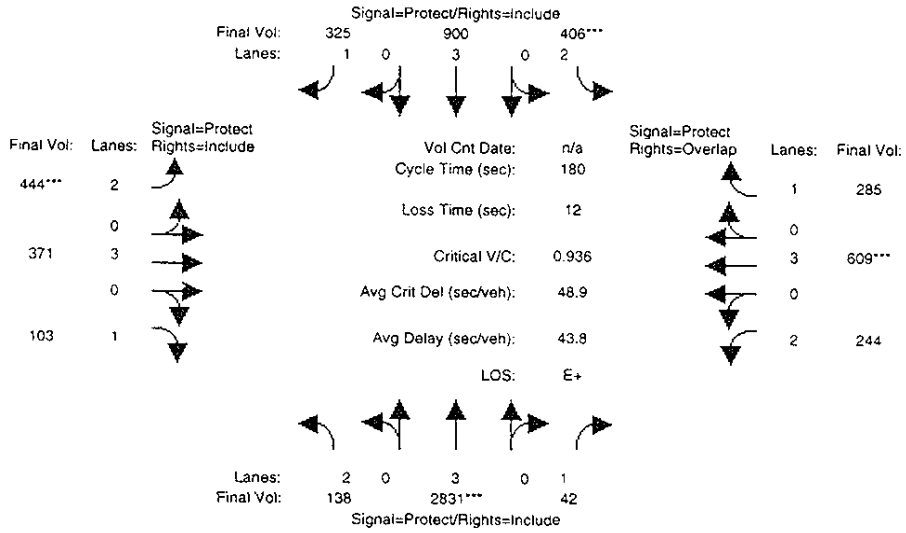
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5513: ALMADEN/BLOSSOM HILL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	138	2827	42	406	892	314	438	371	103	244	609	285
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	2827	42	406	892	314	438	371	103	244	609	285
Added Vol:	0	4	0	0	8	11	6	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	138	2831	42	406	900	325	444	371	103	244	609	285
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	138	2831	42	406	900	325	444	371	103	244	609	285
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	2831	42	406	900	325	444	371	103	244	609	285
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	138	2831	42	406	900	325	444	371	103	244	609	285
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1200	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.04	0.50	0.02	0.13	0.16	0.19	0.14	0.07	0.09	0.08	0.11	0.16
Crit Moves:		****		****			****				****	
Green Time:	23.0	95.5	95.5	24.8	97.4	97.4	27.1	25.1	25.1	22.6	20.6	45.3
Volume/Cap:	0.34	0.94	0.05	0.94	0.29	0.34	0.94	0.47	0.62	0.62	0.94	0.65
Delay/Veh:	54.7	34.6	15.4	78.4	17.1	17.8	76.3	54.5	60.1	58.7	75.3	48.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.7	34.6	15.4	78.4	17.1	17.8	76.3	54.5	60.1	58.7	75.3	48.0
DesignQueue:	12	153	2	36	43	16	39	32	9	22	56	22

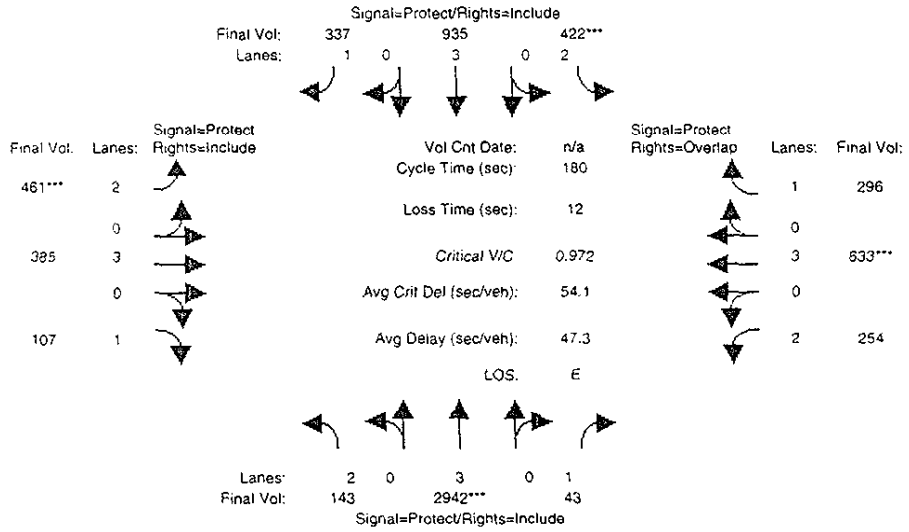
99-088

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5513: ALMADEN/BLOSSOM HILL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	143	2942	43	422	935	337	461	385	107	254	633	296
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	143	2942	43	422	935	337	461	385	107	254	633	296
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	143	2942	43	422	935	337	461	385	107	254	633	296
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	143	2942	43	422	935	337	461	385	107	254	633	296
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	143	2942	43	422	935	337	461	385	107	254	633	296
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	143	2942	43	422	935	337	461	385	107	254	633	296
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1200	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.05	0.52	0.02	0.13	0.16	0.19	0.15	0.07	0.09	0.08	0.11	0.17
Crit Moves:		****		****			****				****	
Green Time:	23.0	95.5	95.5	24.8	97.4	97.4	27.1	25.0	25.0	22.6	20.6	45.4
Volume/Cap:	0.36	0.97	0.05	0.97	0.30	0.36	0.97	0.49	0.64	0.64	0.97	0.67
Delay/Veh:	54.8	39.2	15.4	85.5	17.3	17.9	83.3	54.8	61.2	59.3	81.5	48.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.8	39.2	15.4	85.5	17.3	17.9	83.3	54.8	61.2	59.3	81.5	48.8
DesignQueue:	13	160	2	37	45	16	40	34	9	23	58	23

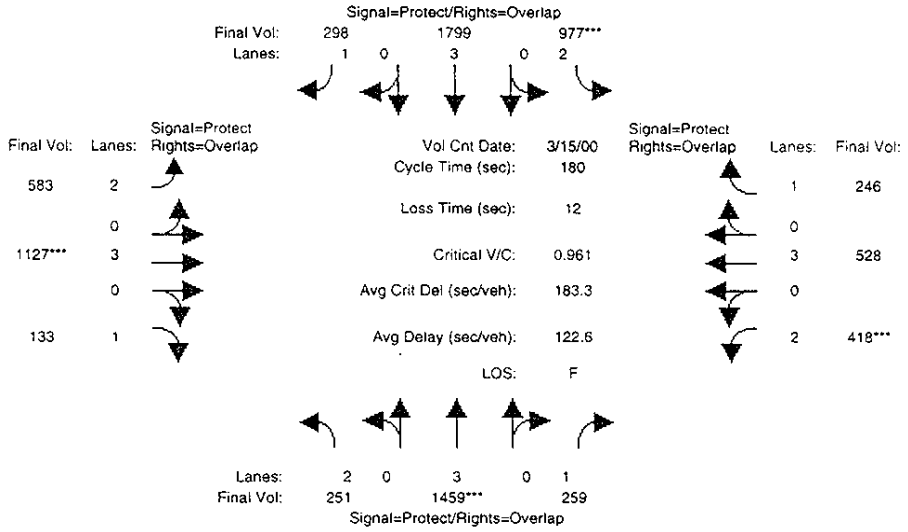
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #5513: ALMADEN/BLOSSOM HILL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	80	10	7	80	10	7	10	10	7	10	10
Volume Module: >> Count Date: 15 Mar 2000 <<												
Base Vol:	251	1459	259	977	1799	298	583	1127	133	418	528	246
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	1459	259	977	1799	298	583	1127	133	418	528	246
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	251	1459	259	977	1799	298	583	1127	133	418	528	246
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	251	1459	259	977	1799	298	583	1127	133	418	528	246
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	251	1459	259	977	1799	298	583	1127	133	418	528	246
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	251	1459	259	977	1799	298	583	1127	133	418	528	246
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1200	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.26	0.15	0.31	0.32	0.17	0.19	0.20	0.11	0.13	0.09	0.14
Crit Moves:		****		****				****		****		
Green/Cycle:	0.24	0.44	0.55	0.24	0.44	0.61	0.17	0.15	0.39	0.10	0.08	0.32
Volume/Cap:	0.34	0.58	0.27	1.31	0.71	0.28	1.10	1.31	0.29	1.31	1.10	0.44
Delay/Veh:	43.4	28.6	16.6	254.7	31.5	12.4	123.1	257	28.9	275.4	130	37.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.28	1.35	1.00	1.12	1.48	1.00	1.12	1.48
AdjDel/Veh:	43.4	28.6	16.6	254.7	40.3	16.8	123.1	288	42.8	275.4	146	54.9
DesignQueue:	19	87	12	80	109	12	51	101	8	39	50	17

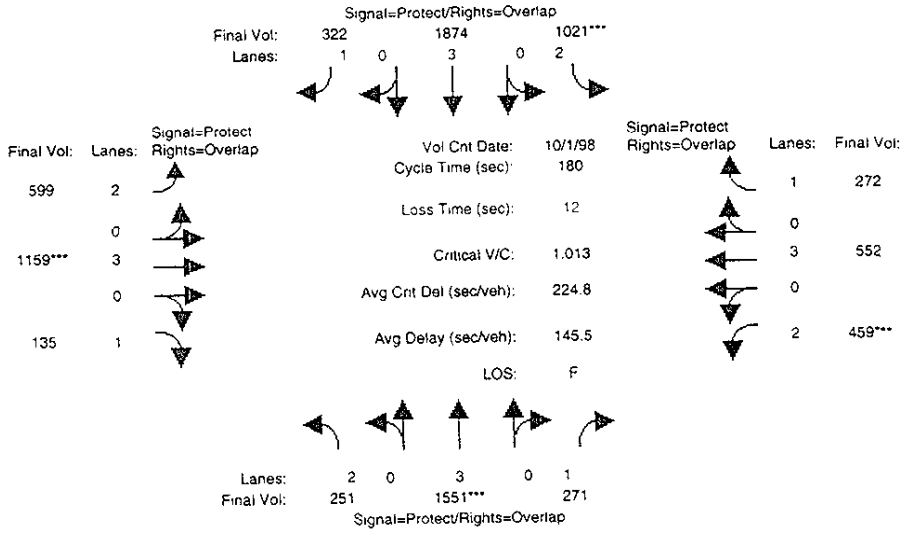
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5513: ALMADEN/BLOSSOM HILL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	80	10	7	80	10	7	10	10	7	10	10
Volume Module: >> Count Date: 1 Oct 1998 <<												
Base Vol:	251	1551	271	1021	1874	322	599	1159	135	459	552	272
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	1551	271	1021	1874	322	599	1159	135	459	552	272
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	251	1551	271	1021	1874	322	599	1159	135	459	552	272
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	251	1551	271	1021	1874	322	599	1159	135	459	552	272
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	251	1551	271	1021	1874	322	599	1159	135	459	552	272
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	251	1551	271	1021	1874	322	599	1159	135	459	552	272
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1200	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.27	0.15	0.32	0.33	0.18	0.19	0.20	0.11	0.15	0.10	0.16
Crit Moves:		****		****				****		****		
Green Time:	42.4	80.0	99.0	42.4	80.0	110.2	30.2	26.6	69.0	19.0	15.4	57.8
Volume/Cap:	0.34	0.61	0.28	1.38	0.74	0.30	1.13	1.38	0.29	1.38	1.13	0.48
Delay/Veh:	43.6	29.3	16.4	318.8	32.3	12.6	138.2	321	29.4	337.3	144	37.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.26	1.35	1.00	1.12	1.48	1.00	1.12	1.48
AdjDel/Veh:	43.6	29.3	16.4	318.8	40.7	17.1	138.2	359	43.6	337.3	162	56.1
DesignQueue:	20	93	13	84	114	13	52	104	8	42	52	19

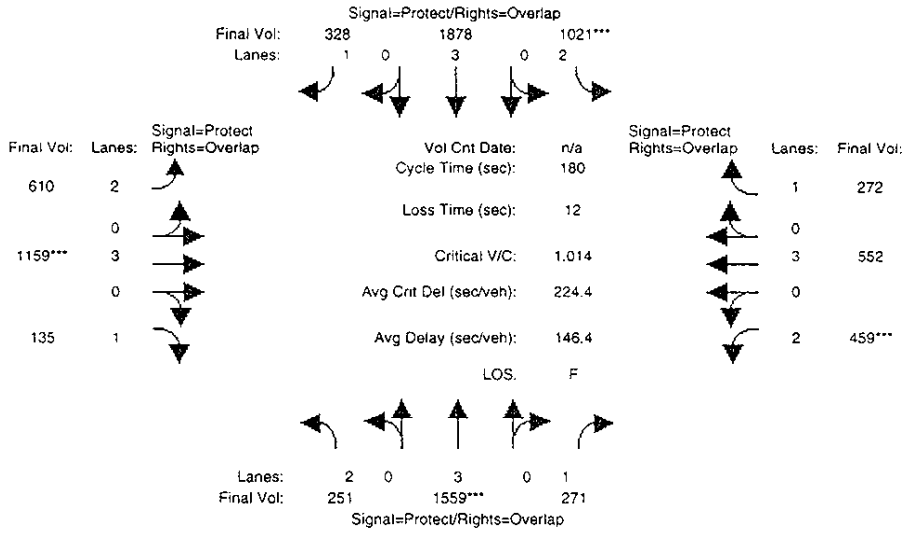
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5513: ALMADEN/BLOSSOM HILL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	80	10	7	80	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	251	1551	271	1021	1874	322	599	1159	135	459	552	272
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	1551	271	1021	1874	322	599	1159	135	459	552	272
Added Vol:	0	8	0	0	4	6	11	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	251	1559	271	1021	1878	328	610	1159	135	459	552	272
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	251	1559	271	1021	1878	328	610	1159	135	459	552	272
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	251	1559	271	1021	1878	328	610	1159	135	459	552	272
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	251	1559	271	1021	1878	328	610	1159	135	459	552	272
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1200	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.27	0.15	0.32	0.33	0.19	0.19	0.20	0.11	0.15	0.10	0.16
Crit Moves:		****		****				****		****		
Green Time:	42.4	80.0	99.0	42.4	80.0	110.4	30.4	26.6	69.0	19.0	15.2	57.6
Volume/Cap:	0.34	0.62	0.28	1.38	0.74	0.31	1.15	1.38	0.29	1.38	1.15	0.49
Delay/Veh:	43.6	29.4	16.4	318.8	32.3	12.6	145.4	321	29.4	337.3	152	38.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.26	1.35	1.00	1.12	1.48	1.00	1.12	1.48
AdjDel/Veh:	43.6	29.4	16.4	318.8	40.7	17.1	145.4	359	43.6	337.3	170	56.2
DesignQueue:	20	93	13	84	114	13	53	104	8	42	52	19

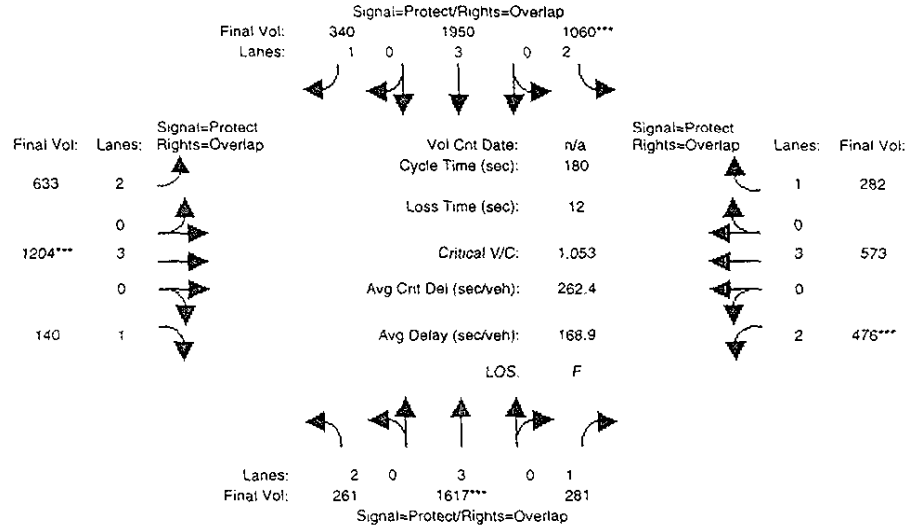
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5513: ALMADEN/BLOSSOM HILL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	80	10	7	80	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	261	1617	281	1060	1950	340	633	1204	140	476	573	282
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	261	1617	281	1060	1950	340	633	1204	140	476	573	282
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	261	1617	281	1060	1950	340	633	1204	140	476	573	282
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	261	1617	281	1060	1950	340	633	1204	140	476	573	282
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	261	1617	281	1060	1950	340	633	1204	140	476	573	282
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	261	1617	281	1060	1950	340	633	1204	140	476	573	282
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.67	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	5700	1750	3150	5700	1200	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.28	0.16	0.34	0.34	0.19	0.20	0.21	0.12	0.15	0.10	0.16
Crit Moves:		****		****				****		****		
Green Time:	42.4	80.0	99.0	42.4	80.0	110.4	30.4	26.6	69.0	19.0	15.2	57.6
Volume/Cap:	0.35	0.64	0.29	1.43	0.77	0.32	1.19	1.43	0.30	1.43	1.19	0.50
Delay/Veh:	43.7	29.9	16.5	376.1	33.1	12.7	170.9	377	29.6	394.1	177	38.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.24	1.35	1.00	1.12	1.48	1.00	1.12	1.48
AdjDel/Veh:	43.7	29.9	16.5	376.1	41.1	17.2	170.9	423	43.8	394.1	199	56.7
DesignQueue:	20	97	13	87	119	14	55	109	9	44	54	20

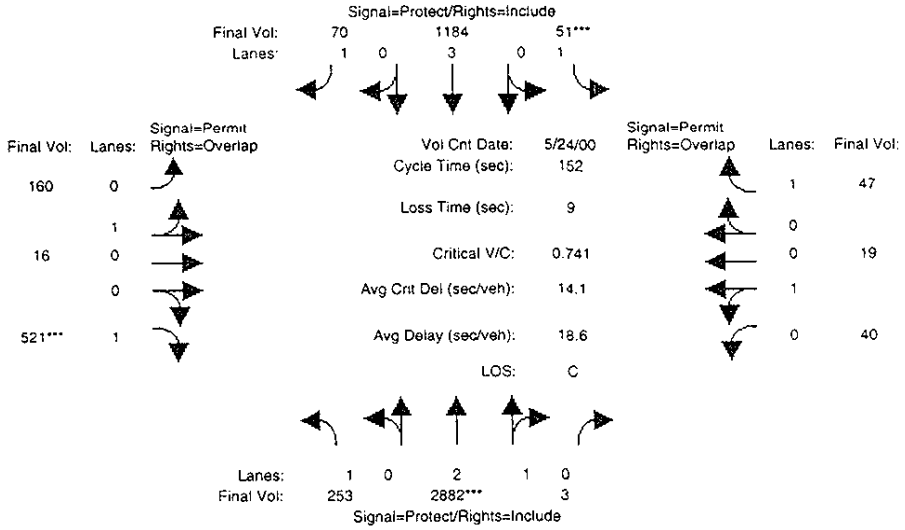
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #5521: ALMADEN/CHERRY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module: >> Count Date: 24 May 2000 <<												
Base Vol:	253	2882	3	51	1184	70	160	16	521	40	19	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	253	2882	3	51	1184	70	160	16	521	40	19	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	253	2882	3	51	1184	70	160	16	521	40	19	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	253	2882	3	51	1184	70	160	16	521	40	19	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	253	2882	3	51	1184	70	160	16	521	40	19	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	253	2882	3	51	1184	70	160	16	521	40	19	47
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.06	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Lanes:	1.00	2.99	0.01	1.00	3.00	1.00	0.91	0.09	1.00	0.68	0.32	1.00
Final Sat.:	1750	5594	6	1750	5700	1750	1636	164	1750	1220	580	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.52	0.52	0.03	0.21	0.04	0.10	0.10	0.30	0.03	0.03	0.03
Crit Moves:		****		****					****			
Green/Cycle:	0.30	0.69	0.69	0.05	0.43	0.43	0.21	0.21	0.51	0.21	0.21	0.25
Volume/Cap:	0.48	0.75	0.75	0.63	0.48	0.09	0.48	0.48	0.59	0.16	0.16	0.11
Delay/Veh:	33.4	12.1	12.1	64.1	23.5	19.3	41.2	41.2	20.7	37.8	37.8	33.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.4	12.1	12.1	64.1	23.5	19.3	41.2	41.2	20.7	37.8	37.8	33.3
DesignQueue:	15	87	0	4	60	3	11	1	23	3	1	3

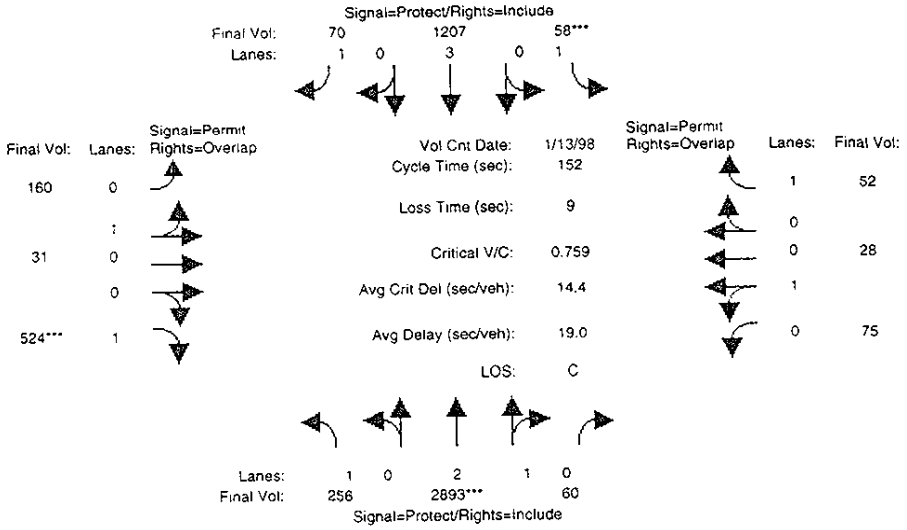
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5521: ALMADEN/CHERRY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module: >> Count Date: 13 Jan 1998 <<												
Base Vol:	256	2893	60	58	1207	70	160	31	524	75	28	52
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	256	2893	60	58	1207	70	160	31	524	75	28	52
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	256	2893	60	58	1207	70	160	31	524	75	28	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	256	2893	60	58	1207	70	160	31	524	75	28	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	256	2893	60	58	1207	70	160	31	524	75	28	52
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	256	2893	60	58	1207	70	160	31	524	75	28	52
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.06	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Lanes:	1.00	2.94	0.06	1.00	3.00	1.00	0.84	0.16	1.00	0.73	0.27	1.00
Final Sat.:	1750	5486	114	1750	5700	1750	1508	292	1750	1311	489	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.53	0.53	0.03	0.21	0.04	0.11	0.11	0.30	0.06	0.06	0.03
Crit Moves:		****		****					****			
Green Time:	45.9	105	105.4	7.0	66.5	66.5	30.6	30.6	76.5	30.6	30.6	37.6
Volume/Cap:	0.48	0.76	0.76	0.72	0.48	0.09	0.53	0.53	0.59	0.28	0.28	0.12
Delay/Veh:	33.5	12.1	12.1	71.4	23.3	19.1	42.4	42.4	21.1	39.2	39.2	33.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.5	12.1	12.1	71.4	23.3	19.1	42.4	42.4	21.1	39.2	39.2	33.7
DesignQueue:	16	87	2	5	61	3	11	2	24	5	2	3

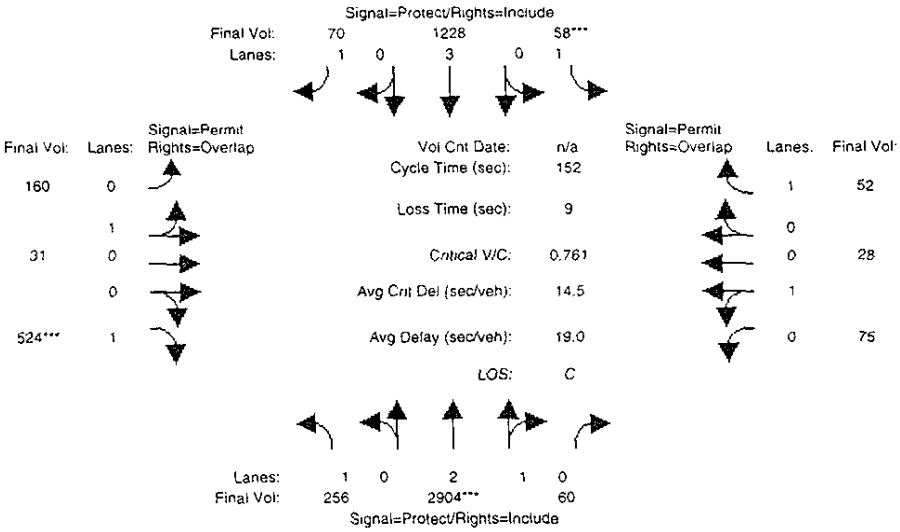
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5521: ALMADEN/CHERRY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module:												
Base Vol:	256	2893	60	58	1207	70	160	31	524	75	28	52
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	256	2893	60	58	1207	70	160	31	524	75	28	52
Added Vol:	0	11	0	0	21	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	256	2904	60	58	1228	70	160	31	524	75	28	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	256	2904	60	58	1228	70	160	31	524	75	28	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	256	2904	60	58	1228	70	160	31	524	75	28	52
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	256	2904	60	58	1228	70	160	31	524	75	28	52
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.06	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Lanes:	1.00	2.94	0.06	1.00	3.00	1.00	0.84	0.16	1.00	0.73	0.27	1.00
Final Sat.:	1750	5486	113	1750	5700	1750	1508	292	1750	1311	489	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.53	0.53	0.03	0.22	0.04	0.11	0.11	0.30	0.06	0.06	0.03
Crit Moves:		****		****					****			
Green Time:	45.5	105	105.5	7.0	67.0	67.0	30.5	30.5	76.0	30.5	30.5	37.5
Volume/Cap:	0.49	0.76	0.76	0.72	0.49	0.09	0.53	0.53	0.60	0.28	0.28	0.12
Delay/Veh:	33.8	12.2	12.2	71.4	23.2	18.8	42.4	42.4	21.4	39.3	39.3	33.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.8	12.2	12.2	71.4	23.2	18.8	42.4	42.4	21.4	39.3	39.3	33.8
DesignQueue:	16	87	2	5	61	3	11	2	24	5	2	3

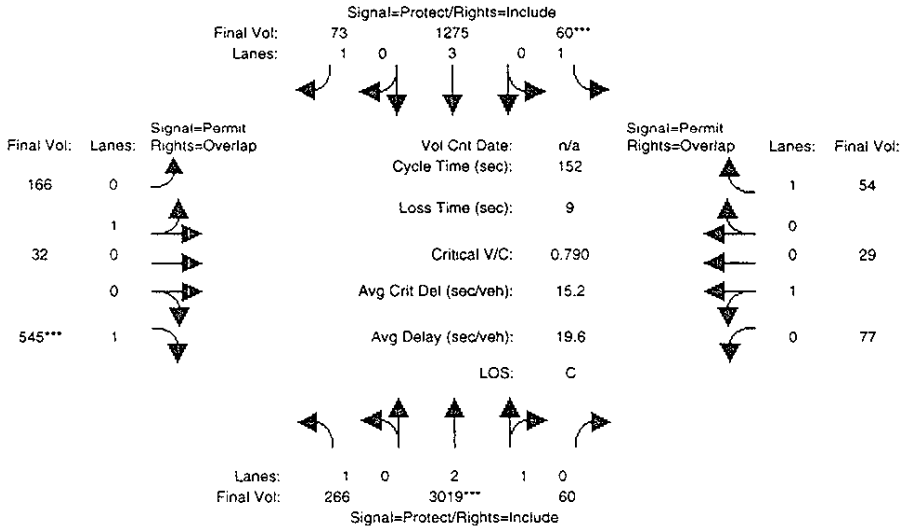
99-088

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5521: ALMADEN/CHERRY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module:												
Base Vol:	266	3019	60	60	1275	73	166	32	545	77	29	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	266	3019	60	60	1275	73	166	32	545	77	29	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	266	3019	60	60	1275	73	166	32	545	77	29	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	266	3019	60	60	1275	73	166	32	545	77	29	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	3019	60	60	1275	73	166	32	545	77	29	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	266	3019	60	60	1275	73	166	32	545	77	29	54
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.06	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Lanes:	1.00	2.94	0.06	1.00	3.00	1.00	0.84	0.16	1.00	0.73	0.27	1.00
Final Sat.:	1750	5491	109	1750	5700	1750	1509	291	1750	1308	492	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.55	0.55	0.03	0.22	0.04	0.11	0.11	0.31	0.06	0.06	0.03
Crit Moves:		****		****					****			
Green Time:	45.5	105	105.4	7.0	66.9	66.9	30.6	30.6	76.1	30.6	30.6	37.6
Volume/Cap:	0.51	0.79	0.79	0.74	0.51	0.09	0.55	0.55	0.62	0.29	0.29	0.12
Delay/Veh:	34.1	12.9	12.9	74.2	23.4	18.9	42.8	42.8	21.9	39.3	39.3	33.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.1	12.9	12.9	74.2	23.4	18.9	42.8	42.8	21.9	39.3	39.3	33.8
DesignQueue:	16	91	2	5	64	3	12	2	25	5	2	3

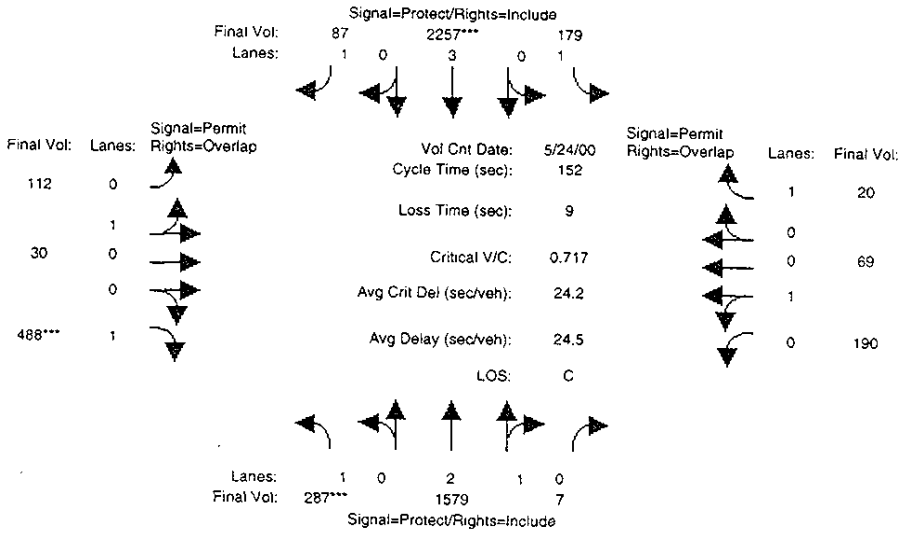
99 = 083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #5521: ALMADEN/CHERRY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module: >> Count Date: 24 May 2000 <<												
Base Vol:	287	1579	7	179	2257	87	112	30	488	190	69	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	287	1579	7	179	2257	87	112	30	488	190	69	20
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	287	1579	7	179	2257	87	112	30	488	190	69	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	287	1579	7	179	2257	87	112	30	488	190	69	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	287	1579	7	179	2257	87	112	30	488	190	69	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	287	1579	7	179	2257	87	112	30	488	190	69	20
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.06	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Lanes:	1.00	2.99	0.01	1.00	3.00	1.00	0.79	0.21	1.00	0.73	0.27	1.00
Final Sat.:	1750	5575	25	1750	5700	1750	1420	380	1750	1320	480	1750
Capacity Analysis Module:												
Vol/Sat:	0.16	0.28	0.28	0.10	0.40	0.05	0.08	0.08	0.28	0.14	0.14	0.01
Crit Moves:	****				****				****			
Green/Cycle:	0.23	0.57	0.57	0.21	0.55	0.55	0.16	0.16	0.39	0.16	0.16	0.37
Volume/Cap:	0.72	0.49	0.49	0.49	0.72	0.09	0.49	0.49	0.72	0.90	0.90	0.03
Delay/Veh:	45.3	14.8	14.8	41.3	19.8	12.2	45.3	45.3	32.5	67.7	67.7	23.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.3	14.8	14.8	41.3	19.8	12.2	45.3	45.3	32.5	67.7	67.7	23.4
DesignQueue:	19	61	0	12	95	3	8	2	27	14	5	1

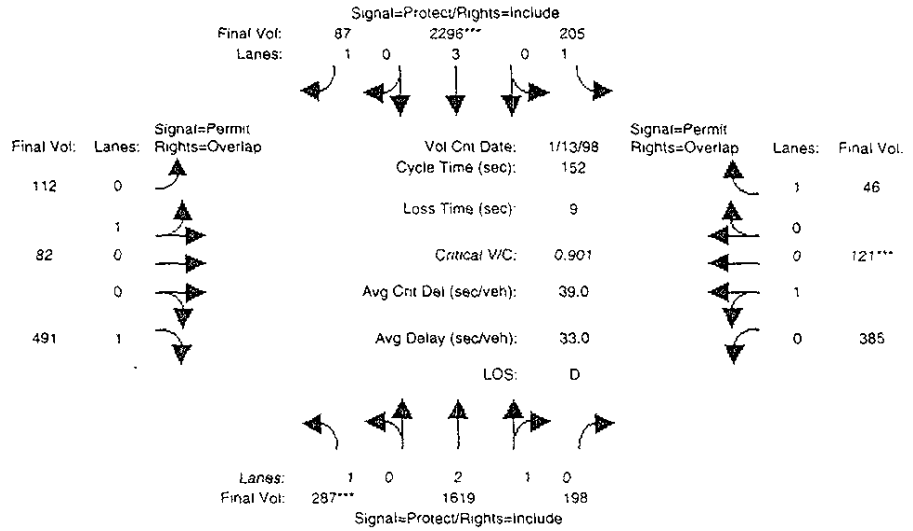
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5521: ALMADEN/CHERRY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module: >> Count Date: 13 Jan 1998 <<												
Base Vol:	287	1619	198	205	2296	87	112	82	491	385	121	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	287	1619	198	205	2296	87	112	82	491	385	121	46
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	287	1619	198	205	2296	87	112	82	491	385	121	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	287	1619	198	205	2296	87	112	82	491	385	121	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	287	1619	198	205	2296	87	112	82	491	385	121	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	287	1619	198	205	2296	87	112	82	491	385	121	46
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.06	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Lanes:	1.00	2.66	0.34	1.00	3.00	1.00	0.58	0.42	1.00	0.76	0.24	1.00
Final Sat.:	1750	4989	610	1750	5700	1750	1039	761	1750	1370	430	1750
Capacity Analysis Module:												
Vol/Sat:	0.16	0.32	0.32	0.12	0.40	0.05	0.11	0.11	0.28	0.28	0.28	0.03
Crit Moves:	****				****						****	
Green Time:	27.7	70.2	70.2	25.4	67.9	67.9	47.4	47.4	75.1	47.4	47.4	72.8
Volume/Cap:	0.90	0.70	0.70	0.70	0.90	0.11	0.35	0.35	0.57	0.90	0.90	0.05
Delay/Veh:	65.3	25.4	25.4	50.4	33.2	18.6	30.8	30.8	21.2	50.6	50.6	16.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.3	25.4	25.4	50.4	33.2	18.6	30.8	30.8	21.2	50.6	50.6	16.1
DesignQueue:	21	80	10	15	120	4	7	5	23	24	8	2

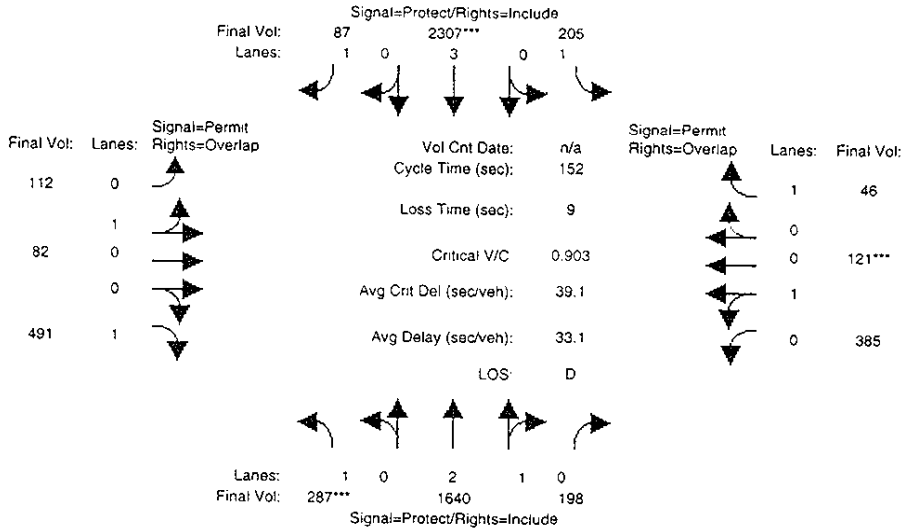
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5521: ALMADEN/CHERRY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module:												
Base Vol:	287	1619	198	205	2296	87	112	82	491	385	121	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	287	1619	198	205	2296	87	112	82	491	385	121	46
Added Vol:	0	21	0	0	11	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	287	1640	198	205	2307	87	112	82	491	385	121	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	287	1640	198	205	2307	87	112	82	491	385	121	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	287	1640	198	205	2307	87	112	82	491	385	121	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	287	1640	198	205	2307	87	112	82	491	385	121	46
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.06	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Lanes:	1.00	2.66	0.34	1.00	3.00	1.00	0.58	0.42	1.00	0.76	0.24	1.00
Final Sat.:	1750	4996	603	1750	5700	1750	1039	761	1750	1370	430	1750
Capacity Analysis Module:												
Vol/Sat:	0.16	0.33	0.33	0.12	0.40	0.05	0.11	0.11	0.28	0.28	0.28	0.03
Crit Moves:	****				****						****	
Green Time:	27.6	70.5	70.5	25.2	68.1	68.1	47.3	47.3	74.9	47.3	47.3	72.5
Volume/Cap:	0.90	0.71	0.71	0.71	0.90	0.11	0.35	0.35	0.57	0.90	0.90	0.06
Delay/Veh:	65.7	25.3	25.3	50.8	33.2	18.5	30.9	30.9	21.3	50.9	50.9	16.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.7	25.3	25.3	50.8	33.2	18.5	30.9	30.9	21.3	50.9	50.9	16.2
DesignQueue:	21	81	10	15	120	4	7	5	23	24	8	2

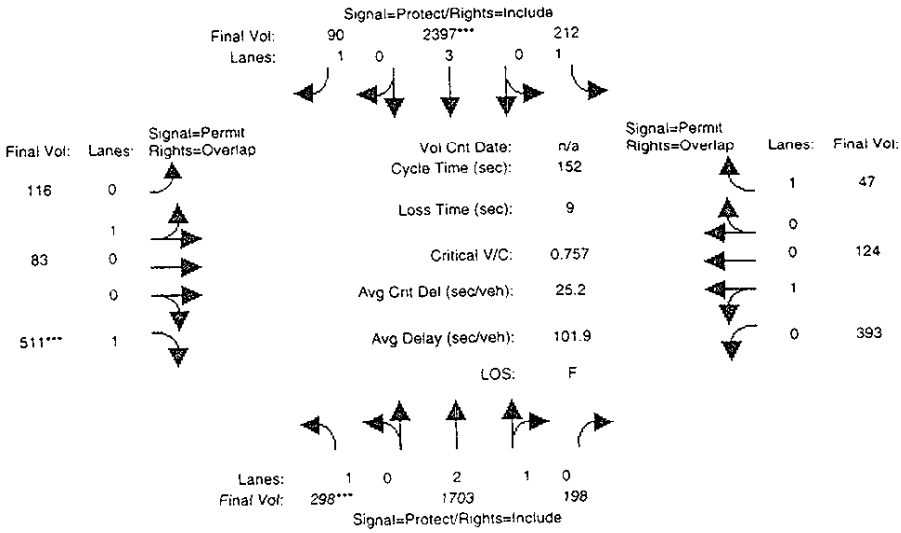
99-088

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5521: ALMADEN/CHERRY



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module:												
Base Vol:	298	1703	198	212	2397	90	116	83	511	393	124	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	298	1703	198	212	2397	90	116	83	511	393	124	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	298	1703	198	212	2397	90	116	83	511	393	124	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	298	1703	198	212	2397	90	116	83	511	393	124	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	298	1703	198	212	2397	90	116	83	511	393	124	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	298	1703	198	212	2397	90	116	83	511	393	124	47
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.06	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Lanes:	1.00	2.68	0.32	1.00	3.00	1.00	0.58	0.42	1.00	0.76	0.24	1.00
Final Sat.:	1750	5016	583	1750	5700	1750	1049	751	1750	1368	432	1750
Capacity Analysis Module:												
Vol/Sat:	0.17	0.34	0.34	0.12	0.42	0.05	0.11	0.11	0.29	0.29	0.29	0.03
Crit Moves:	****				****				****			
Green Time:	34.2	87.4	87.4	31.2	84.4	84.4	24.4	24.4	58.6	24.4	24.4	55.6
Volume/Cap:	0.76	0.59	0.59	0.59	0.76	0.09	0.69	0.69	0.76	1.79	1.79	0.07
Delay/Veh:	47.5	16.0	16.0	43.4	20.5	12.0	50.3	50.3	34.2	960.6	961	23.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.5	16.0	16.0	43.4	20.5	12.0	50.3	50.3	34.2	960.6	961	23.9
DesignQueue:	20	67	8	15	101	3	8	6	29	30	9	3

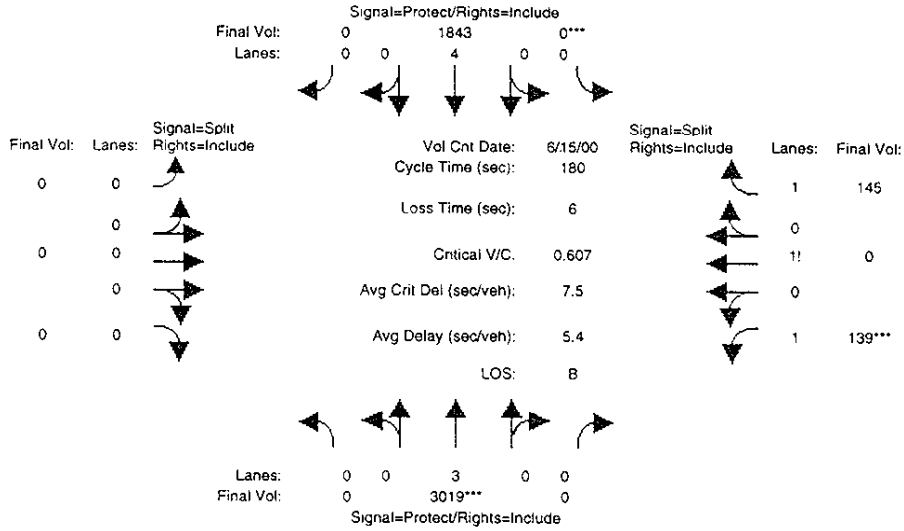
99-088

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #5522: 85/ALMADEN (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	131	0	0	131	0	0	0	0	10	0	10
Volume Module: >> Count Date: 15 Jun 2000 <<												
Base Vol:	0	3019	0	0	1843	0	0	0	0	139	0	145
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3019	0	0	1843	0	0	0	0	139	0	145
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3019	0	0	1843	0	0	0	0	139	0	145
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3019	0	0	1843	0	0	0	0	139	0	145
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3019	0	0	1843	0	0	0	0	139	0	145
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	3019	0	0	1843	0	0	0	0	139	0	145
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.89	1.06	1.08
Lanes:	0.00	3.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.54	0.00	1.46
Final Sat.:	0	5700	0	0	7600	0	0	0	0	2453	0	2833
Capacity Analysis Module:												
Vol/Sat:	0.00	0.53	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.06	0.00	0.05
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.87	0.00	0.00	0.87	0.00	0.00	0.00	0.00	0.09	0.00	0.09
Volume/Cap:	0.00	0.61	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.61	0.00	0.55
Delay/Veh:	0.0	2.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	61.2	0.0	60.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	2.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	61.2	0.0	60.2
DesignQueue:	0	44	0	0	25	0	0	0	0	13	0	13

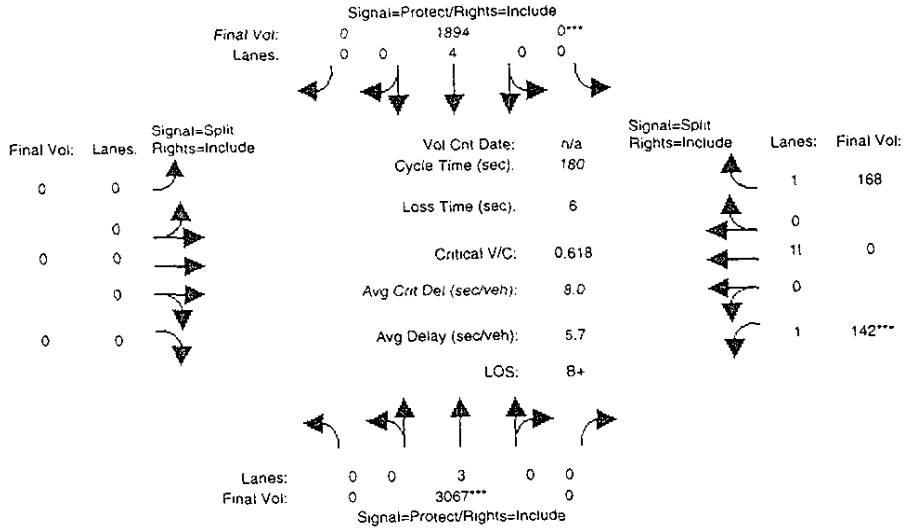
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5522: 85/ALMADEN (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	131	0	0	131	0	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	3067	0	0	1894	0	0	0	0	142	0	168
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3067	0	0	1894	0	0	0	0	142	0	168
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3067	0	0	1894	0	0	0	0	142	0	168
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3067	0	0	1894	0	0	0	0	142	0	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3067	0	0	1894	0	0	0	0	142	0	168
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	3067	0	0	1894	0	0	0	0	142	0	168
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.89	1.06	1.08
Lanes:	0.00	3.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.51	0.00	1.49
Final Sat.:	0	5700	0	0	7600	0	0	0	0	2403	0	2894
Capacity Analysis Module:												
Vol/Sat:	0.00	0.54	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.06	0.00	0.06
Crit Moves:		****		****						****		
Green Time:	0.0	157	0.0	0.0	157	0.0	0.0	0.0	0.0	17.2	0.0	17.2
Volume/Cap:	0.00	0.62	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.62	0.00	0.61
Delay/Veh:	0.0	2.6	0.0	0.0	1.5	0.0	0.0	0.0	0.0	61.1	0.0	60.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	2.6	0.0	0.0	1.5	0.0	0.0	0.0	0.0	61.1	0.0	60.9
DesignQueue:	0	46	0	0	26	0	0	0	0	13	0	15

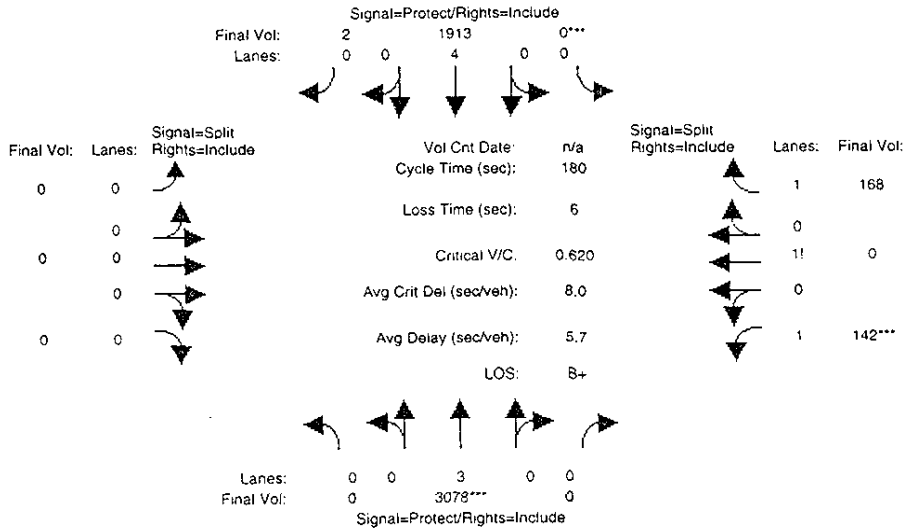
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5522: 85/ALMADEN (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	131	0	0	131	10	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	3067	0	0	1894	0	0	0	0	142	0	168
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3067	0	0	1894	0	0	0	0	142	0	168
Added Vol:	0	11	0	0	19	2	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3078	0	0	1913	2	0	0	0	142	0	168
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3078	0	0	1913	2	0	0	0	142	0	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3078	0	0	1913	2	0	0	0	142	0	168
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	3078	0	0	1913	2	0	0	0	142	0	168
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.04	1.00	0.97	1.06	0.97	0.89	1.06	1.08
Lanes:	0.00	3.00	0.00	0.00	3.99	0.01	0.00	0.00	0.00	1.51	0.00	1.49
Final Sat.:	0	5700	0	0	7492	8	0	0	0	2403	0	2894
Capacity Analysis Module:												
Vol/Sat:	0.00	0.54	0.00	0.00	0.26	0.26	0.00	0.00	0.00	0.06	0.00	0.06
Crit Moves:		****		****						****		
Green Time:	0.0	157	0.0	0.0	157	156.8	0.0	0.0	0.0	17.2	0.0	17.2
Volume/Cap:	0.00	0.62	0.00	0.00	0.29	0.29	0.00	0.00	0.00	0.62	0.00	0.61
Delay/Veh:	0.0	2.6	0.0	0.0	1.5	1.5	0.0	0.0	0.0	61.2	0.0	60.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	2.6	0.0	0.0	1.5	1.5	0.0	0.0	0.0	61.2	0.0	60.9
DesignQueue:	0	46	0	0	26	0	0	0	0	13	0	15

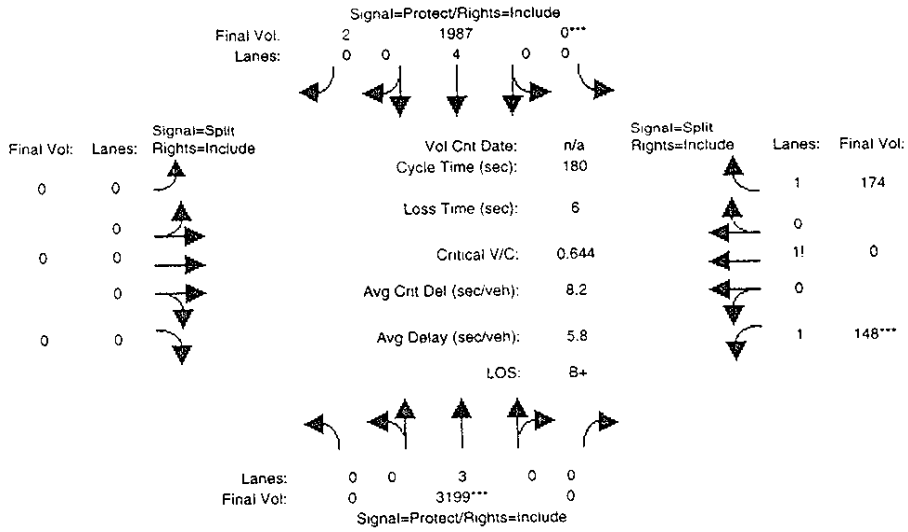
99-083

Copyright (c) 1998 Dowling Associates Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5522: 85/ALMADEN (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	131	0	0	131	10	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	3199	0	0	1987	2	0	0	0	148	0	174
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3199	0	0	1987	2	0	0	0	148	0	174
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	3199	0	0	1987	2	0	0	0	148	0	174
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	3199	0	0	1987	2	0	0	0	148	0	174
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	3199	0	0	1987	2	0	0	0	148	0	174
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	3199	0	0	1987	2	0	0	0	148	0	174
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.04	1.00	0.97	1.06	0.97	0.89	1.06	1.08
Lanes:	0.00	3.00	0.00	0.00	3.99	0.01	0.00	0.00	0.00	1.51	0.00	1.49
Final Sat.:	0	5700	0	0	7492	8	0	0	0	2406	0	2891
Capacity Analysis Module:												
Vol/Sat:	0.00	0.56	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.06	0.00	0.06
Crit Moves:		****		****						****		
Green Time:	0.0	157	0.0	0.0	157	156.8	0.0	0.0	0.0	17.2	0.0	17.2
Volume/Cap:	0.00	0.64	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.64	0.00	0.63
Delay/Veh:	0.0	2.8	0.0	0.0	1.6	1.6	0.0	0.0	0.0	61.6	0.0	61.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	2.8	0.0	0.0	1.6	1.6	0.0	0.0	0.0	61.6	0.0	61.3
DesignQueue:	0	48	0	0	28	0	0	0	0	14	0	16

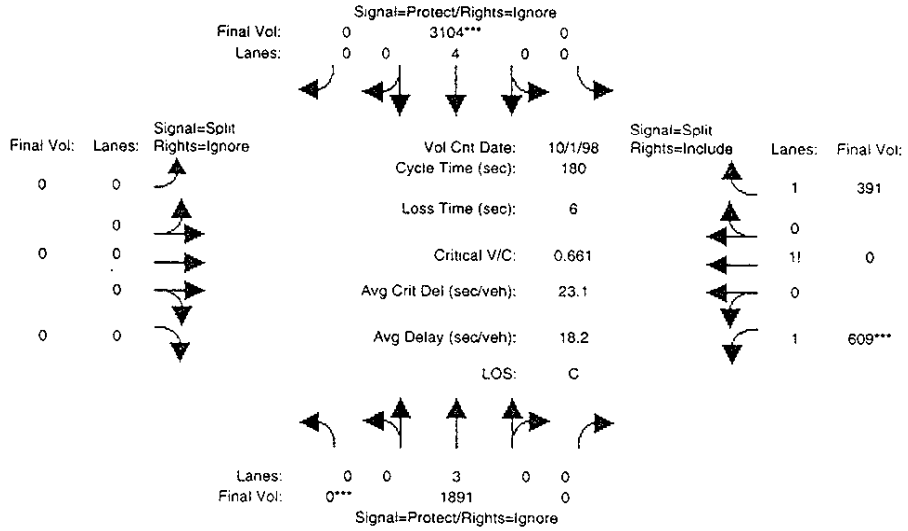
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #5522: 85/ALMADEN (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	131	0	0	131	0	0	0	0	10	0	10
Volume Module: >> Count Date: 1 Oct 1998 <<												
Base Vol:	0	1891	0	0	3104	0	0	0	0	609	0	391
Growth Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	1891	0	0	3104	0	0	0	0	609	0	391
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1891	0	0	3104	0	0	0	0	609	0	391
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	1891	0	0	3104	0	0	0	0	609	0	391
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1891	0	0	3104	0	0	0	0	609	0	391
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	1891	0	0	3104	0	0	0	0	609	0	391
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.89	1.06	1.08
Lanes:	0.00	3.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.65	0.00	1.35
Final Sat.:	0	5700	0	0	7600	0	0	0	0	2639	0	2608
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.23	0.00	0.15
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.73	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.24	0.00	0.24
Volume/Cap:	0.00	0.46	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.97	0.00	0.63
Delay/Veh:	0.0	7.6	0.0	0.0	8.7	0.0	0.0	0.0	0.0	66.5	0.0	47.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	0.72	0.72	1.00	1.00	1.00	1.13	1.48	1.44
AdjDel/Veh:	0.0	7.6	0.0	0.0	6.2	0.0	0.0	0.0	0.0	75.4	0.0	68.0
DesignQueue:	0	56	0	0	95	0	0	0	0	49	0	31

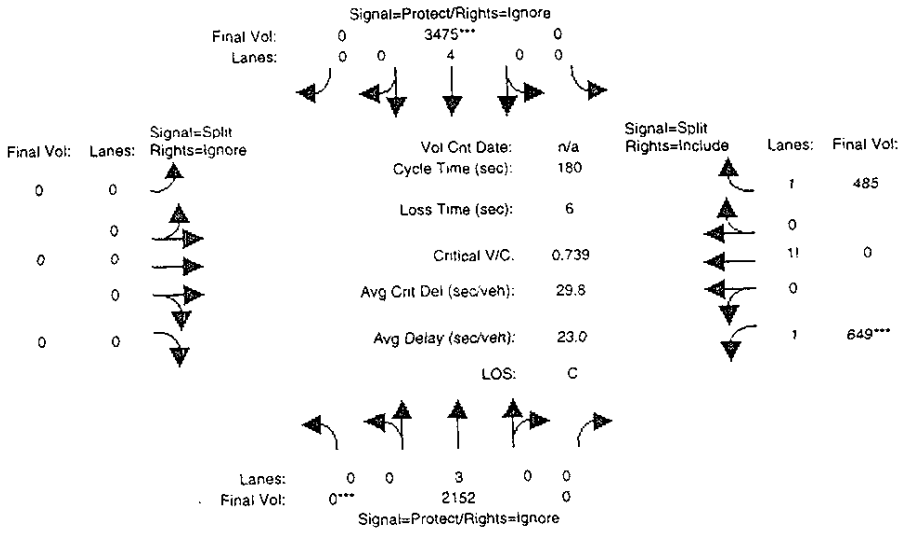
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5522: 85/ALMADEN (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Min. Green:	0	131	0	0	131	10	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	2152	0	0	3475	1	0	0	0	649	0	485
Growth Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	2152	0	0	3475	0	0	0	0	649	0	485
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2152	0	0	3475	0	0	0	0	649	0	485
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	2152	0	0	3475	0	0	0	0	649	0	485
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2152	0	0	3475	0	0	0	0	649	0	485
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	2152	0	0	3475	0	0	0	0	649	0	485
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.04	0.97	0.97	1.06	0.97	0.89	1.06	1.08
Lanes:	0.00	3.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.62	0.00	1.38
Final Sat.:	0	5700	0	0	7500	0	0	0	0	2583	0	2676
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.25	0.00	0.18
Crit Moves:	****				****					****		
Green Time:	0.0	131	0.0	0.0	131	0.0	0.0	0.0	0.0	43.0	0.0	43.0
Volume/Cap:	0.00	0.52	0.00	0.00	0.64	0.00	0.00	0.00	0.00	1.05	0.00	0.76
Delay/Veh:	0.0	8.2	0.0	0.0	9.6	0.0	0.0	0.0	0.0	88.8	0.0	50.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	0.74	0.72	1.00	1.00	1.00	1.12	1.48	1.26
AdjDel/Veh:	0.0	8.2	0.0	0.0	7.1	0.0	0.0	0.0	0.0	99.4	0.0	62.9
DesignQueue:	0	65	0	0	108	0	0	0	0	52	0	39

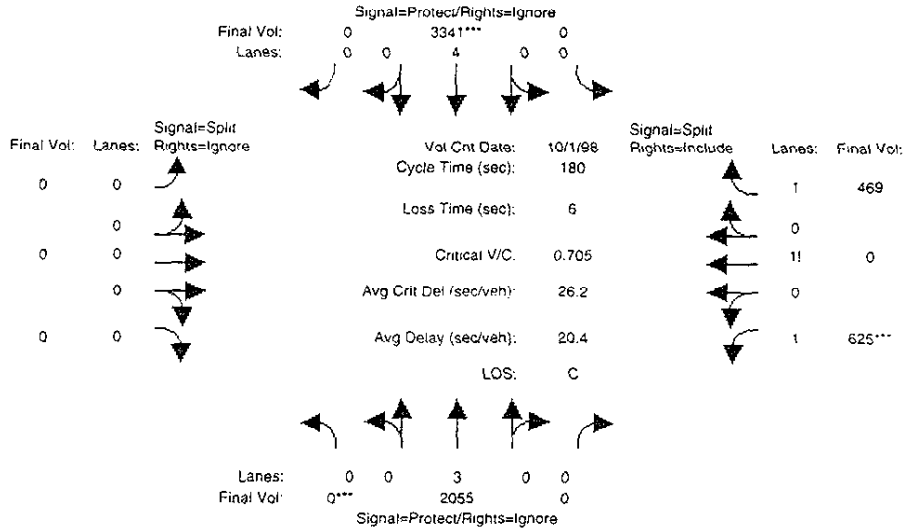
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5522: 85/ALMADEN (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	131	0	0	131	0	0	0	0	10	0	10
Volume Module: >> Count Date: 1 Oct 1998 <<												
Base Vol:	0	2055	0	0	3341	0	0	0	0	625	0	469
Growth Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	2055	0	0	3341	0	0	0	0	625	0	469
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2055	0	0	3341	0	0	0	0	625	0	469
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	2055	0	0	3341	0	0	0	0	625	0	469
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2055	0	0	3341	0	0	0	0	625	0	469
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	2055	0	0	3341	0	0	0	0	625	0	469
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.89	1.06	1.08
Lanes:	0.00	3.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.62	0.00	1.38
Final Sat.:	0	5700	0	0	7600	0	0	0	0	2581	0	2678
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.24	0.00	0.18
Crit Moves:	****				****					****		
Green Time:	0.0	131	0.0	0.0	131	0.0	0.0	0.0	0.0	43.0	0.0	43.0
Volume/Cap:	0.00	0.50	0.00	0.00	0.60	0.00	0.00	0.00	0.00	1.01	0.00	0.73
Delay/Veh:	0.0	8.0	0.0	0.0	9.2	0.0	0.0	0.0	0.0	76.6	0.0	49.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	0.72	0.72	1.00	1.00	1.00	1.12	1.48	1.29
AdjDel/Veh:	0.0	8.0	0.0	0.0	6.6	0.0	0.0	0.0	0.0	85.8	0.0	63.9
DesignQueue:	0	62	0	0	103	0	0	0	0	50	0	37

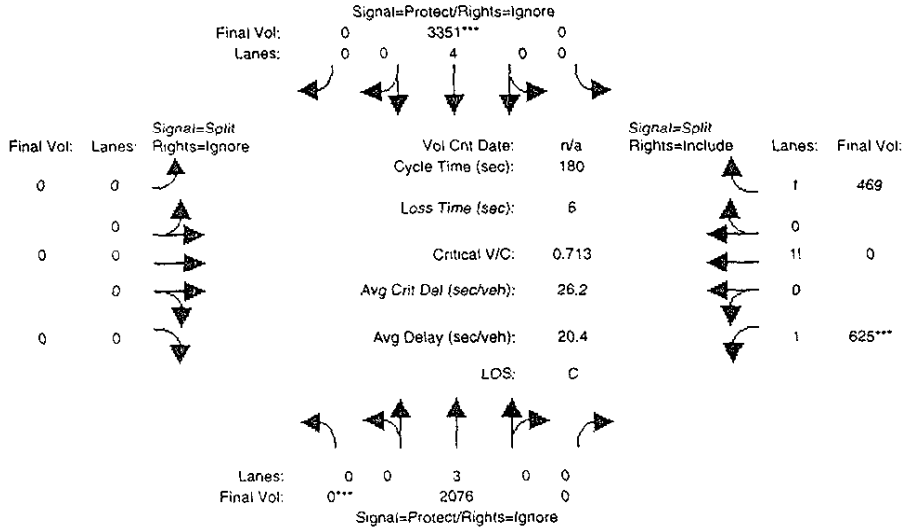
99 - 083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5522: 85/ALMADEN (N)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	131	0	0	131	10	0	0	0	10	0	10
Volume Module:												
Base Vol:	0	2055	0	0	3341	0	0	0	0	625	0	469
Growth Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	2055	0	0	3341	0	0	0	0	625	0	469
Added Vol:	0	21	0	0	10	1	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	2076	0	0	3351	0	0	0	0	625	0	469
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	2076	0	0	3351	0	0	0	0	625	0	469
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2076	0	0	3351	0	0	0	0	625	0	469
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	2076	0	0	3351	0	0	0	0	625	0	469
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.04	0.97	0.97	1.06	0.97	0.89	1.06	1.08
Lanes:	0.00	3.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.62	0.00	1.38
Final Sat.:	0	5700	0	0	7500	0	0	0	0	2581	0	2678
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.24	0.00	0.18
Crit Moves:	****				****					****		
Green Time:	0.0	131	0.0	0.0	131	0.0	0.0	0.0	0.0	43.0	0.0	43.0
Volume/Cap:	0.00	0.50	0.00	0.00	0.61	0.00	0.00	0.00	0.00	1.01	0.00	0.73
Delay/Veh:	0.0	8.1	0.0	0.0	9.3	0.0	0.0	0.0	0.0	76.6	0.0	49.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	0.73	0.72	1.00	1.00	1.00	1.12	1.48	1.29
AdjDel/Veh:	0.0	8.1	0.0	0.0	6.8	0.0	0.0	0.0	0.0	85.8	0.0	63.9
DesignQueue:	0	63	0	0	103	0	0	0	0	50	0	37

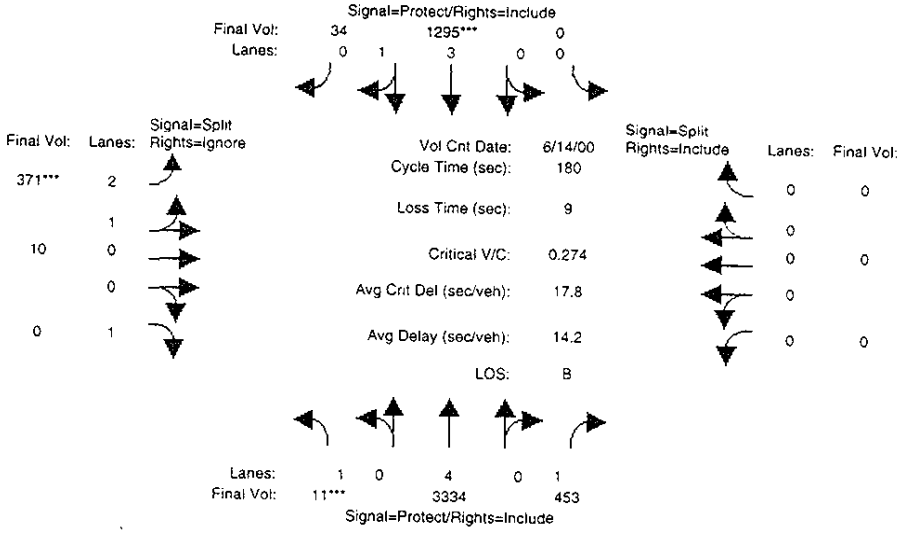
98-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #5523: 85/ALMADEN (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	8	110	10	0	110	10	10	10	10	0	0	0
Volume Module: >> Count Date: 14 Jun 2000 <<												
Base Vol:	11	3334	453	0	1295	34	371	10	358	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	11	3334	453	0	1295	34	371	10	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	3334	453	0	1295	34	371	10	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	11	3334	453	0	1295	34	371	10	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	3334	453	0	1295	34	371	10	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	11	3334	453	0	1295	34	371	10	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.04	1.00	0.91	1.00	0.97	0.97	1.06	0.97
Lanes:	1.00	4.00	1.00	0.00	3.89	0.11	2.93	0.07	1.00	0.00	0.00	0.00
Final Sat.:	1750	7600	1750	0	7308	192	4819	130	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.44	0.26	0.00	0.18	0.18	0.08	0.08	0.00	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green/Cycle:	0.04	0.68	0.68	0.00	0.63	0.63	0.27	0.27	0.00	0.00	0.00	0.00
Volume/Cap:	0.14	0.65	0.38	0.00	0.28	0.28	0.28	0.28	0.00	0.00	0.00	0.00
Delay/Veh:	62.9	13.0	9.8	0.0	11.3	11.3	39.1	39.1	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.9	13.0	9.8	0.0	11.3	11.3	39.1	39.1	0.0	0.0	0.0	0.0
DesignQueue:	1	122	16	0	50	1	27	1	0	0	0	0

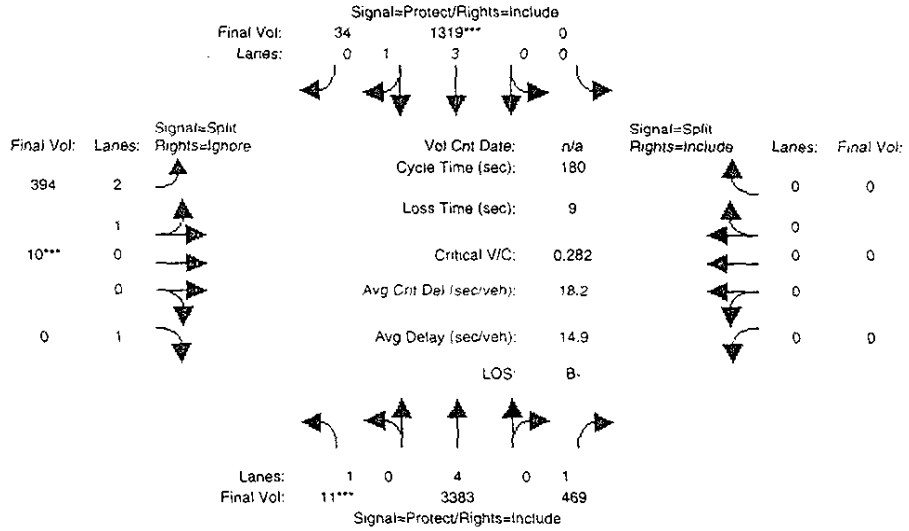
99-083

Copyright c. 1998 Dowling Associates Inc
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5523: 85/ALMADEN (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	8	110	10	0	110	10	10	10	10	0	0	0
Volume Module:												
Base Vol:	11	3383	469	0	1319	34	394	10	395	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	11	3383	469	0	1319	34	394	10	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	3383	469	0	1319	34	394	10	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	11	3383	469	0	1319	34	394	10	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	3383	469	0	1319	34	394	10	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	11	3383	469	0	1319	34	394	10	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.04	1.00	0.91	1.00	0.97	0.97	1.06	0.97
Lanes:	1.00	4.00	1.00	0.00	3.90	0.10	2.93	0.07	1.00	0.00	0.00	0.00
Final Sat.:	1750	7600	1750	0	7311	188	4827	123	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.45	0.27	0.00	0.18	0.18	0.08	0.08	0.00	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green Time:	8.0	120	120.2	0.0	112	112.2	50.8	50.8	0.0	0.0	0.0	0.0
Volume/Cap:	0.14	0.67	0.40	0.00	0.29	0.29	0.29	0.29	0.00	0.00	0.00	0.00
Delay/Veh:	62.9	13.8	10.4	0.0	11.8	11.8	38.4	38.4	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.9	13.8	10.4	0.0	11.8	11.8	38.4	38.4	0.0	0.0	0.0	0.0
DesignQueue:	1	127	17	0	52	1	29	1	0	0	0	0

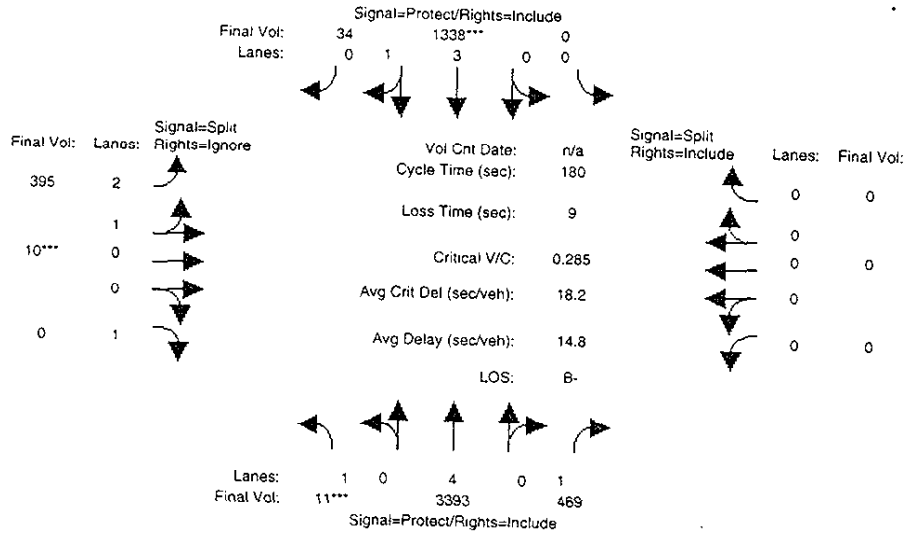
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5523: 85/ALMADEN (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	8	110	10	0	110	10	10	10	10	0	0	0
Volume Module:												
Base Vol:	11	3383	469	0	1319	34	394	10	395	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	11	3383	469	0	1319	34	394	10	0	0	0	0
Added Vol:	0	10	0	0	19	0	1	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	3393	469	0	1338	34	395	10	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	11	3393	469	0	1338	34	395	10	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	3393	469	0	1338	34	395	10	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	11	3393	469	0	1338	34	395	10	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.04	1.00	0.91	1.00	0.97	0.97	1.06	0.97
Lanes:	1.00	4.00	1.00	0.00	3.90	0.10	2.93	0.07	1.00	0.00	0.00	0.00
Final Sat.:	1750	7600	1750	0	7314	186	4827	122	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.45	0.27	0.00	0.18	0.18	0.08	0.08	0.00	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green Time:	8.0	121	120.6	0.0	113	112.6	50.4	50.4	0.0	0.0	0.0	0.0
Volume/Cap:	0.14	0.67	0.40	0.00	0.29	0.29	0.29	0.29	0.00	0.00	0.00	0.00
Delay/Veh:	62.9	13.7	10.3	0.0	11.7	11.7	38.7	38.7	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.9	13.7	10.3	0.0	11.7	11.7	38.7	38.7	0.0	0.0	0.0	0.0
DesignQueue:	1	127	17	0	53	1	29	1	0	0	0	0

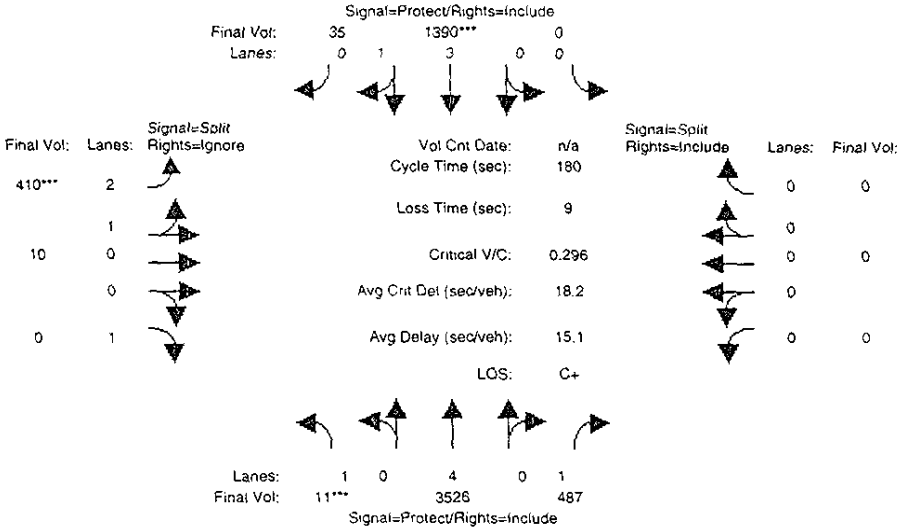
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5523: 85/ALMADEN (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	8	110	10	0	110	10	10	10	10	0	0	0
Volume Module:												
Base Vol:	11	3526	487	0	1390	35	410	10	409	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	11	3526	487	0	1390	35	410	10	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	3526	487	0	1390	35	410	10	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	11	3526	487	0	1390	35	410	10	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	3526	487	0	1390	35	410	10	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	11	3526	487	0	1390	35	410	10	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.04	1.00	0.91	1.00	0.97	0.97	1.06	0.97
Lanes:	1.00	4.00	1.00	0.00	3.90	0.10	2.93	0.07	1.00	0.00	0.00	0.00
Final Sat.:	1750	7600	1750	0	7315	184	4831	118	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.46	0.28	0.00	0.19	0.19	0.08	0.08	0.00	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	8.0	121	120.7	0.0	113	112.7	50.3	50.3	0.0	0.0	0.0	0.0
Volume/Cap:	0.14	0.69	0.42	0.00	0.30	0.30	0.30	0.30	0.00	0.00	0.00	0.00
Delay/Veh:	62.9	14.2	10.4	0.0	11.8	11.8	38.8	38.8	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.9	14.2	10.4	0.0	11.8	11.8	38.8	38.8	0.0	0.0	0.0	0.0
DesignQueue:	1	132	17	0	55	1	30	1	0	0	0	0

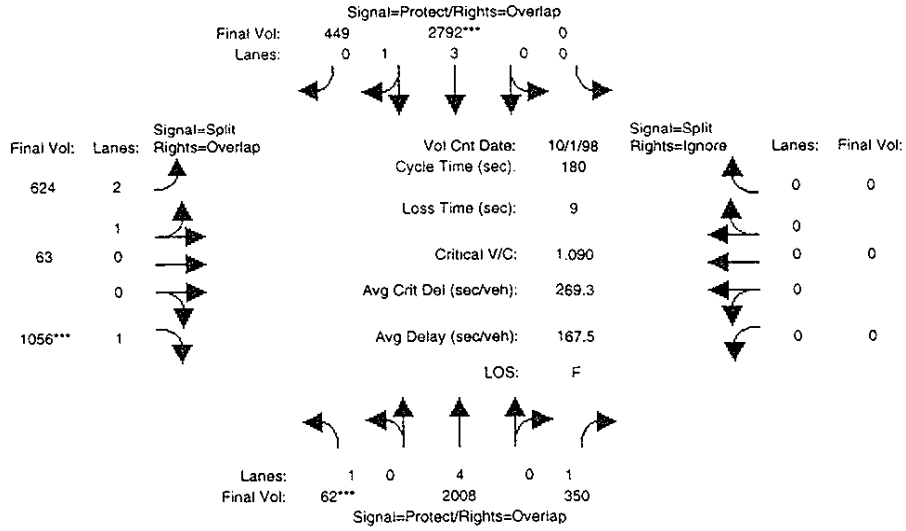
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

City of San Jose Citywide Traffix Database
(modified July 20, 1998)
Kaufman and Broad Communications Hill Traffic Feasibility Study

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #5523: 85/ALMADEN (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	8	110	10	0	110	10	10	10	10	0	0	0
Volume Module: >> Count Date: 1 Oct 1998 <<												
Base Vol:	62	2008	350	0	2792	449	624	63	1056	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Initial Bse:	62	2008	350	0	2792	449	624	63	1056	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	2008	350	0	2792	449	624	63	1056	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	62	2008	350	0	2792	449	624	63	1056	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	2008	350	0	2792	449	624	63	1056	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	62	2008	350	0	2792	449	624	63	1056	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.05	1.00	0.91	1.00	0.97	0.97	1.06	0.97
Lanes:	1.00	4.00	1.00	0.00	3.42	0.58	2.75	0.25	1.00	0.00	0.00	0.00
Final Sat.:	1750	7600	1750	0	6459	1039	4493	454	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.26	0.20	0.00	0.43	0.43	0.14	0.14	0.60	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.04	0.66	0.66	0.00	0.61	0.91	0.29	0.29	0.34	0.00	0.00	0.00
Volume/Cap:	0.80	0.40	0.31	0.00	0.71	0.48	0.47	0.47	1.78	0.00	0.00	0.00
Delay/Veh:	92.2	11.1	10.2	0.0	18.6	1.1	39.7	39.7	948.3	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	0.77	0.72	1.48	1.48	1.12	1.00	1.00	1.00
AdjDel/Veh:	92.2	11.1	10.2	0.0	14.4	0.8	58.8	58.8	1062	0.0	0.0	0.0
DesignQueue:	6	74	13	0	122	5	45	5	82	0	0	0

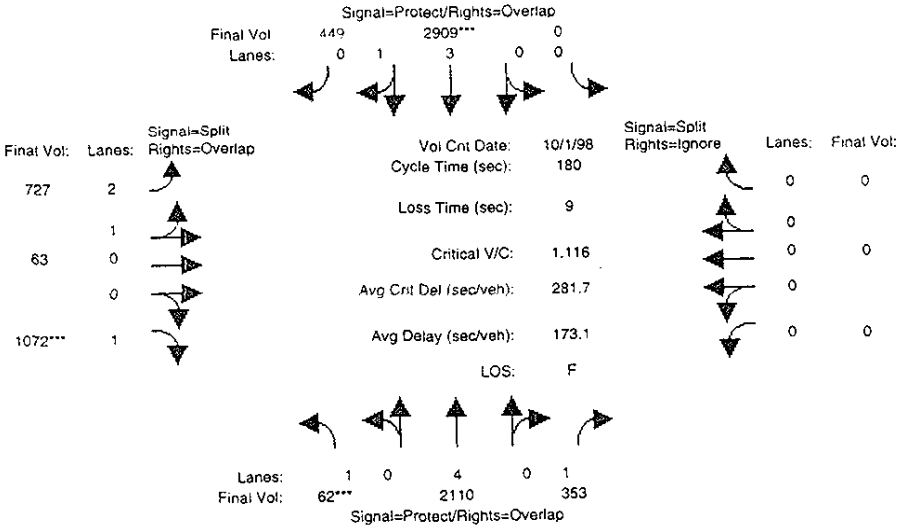
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5523: 85/ALMADEN (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	8	110	10	0	110	10	10	10	10	0	0	0
Volume Module: >> Count Date: 1 Oct 1998 <<												
Base Vol:	62	2110	353	0	2909	449	727	63	1072	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Initial Bse:	62	2110	353	0	2909	449	727	63	1072	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	2110	353	0	2909	449	727	63	1072	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	62	2110	353	0	2909	449	727	63	1072	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	2110	353	0	2909	449	727	63	1072	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	62	2110	353	0	2909	449	727	63	1072	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.05	1.00	0.91	1.00	0.97	0.97	1.06	0.97
Lanes:	1.00	4.00	1.00	0.00	3.44	0.56	2.78	0.22	1.00	0.00	0.00	0.00
Final Sat.:	1750	7600	1750	0	6496	1003	4552	394	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.20	0.00	0.45	0.45	0.16	0.16	0.61	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	8.0	118	118.0	0.0	110	163.0	53.0	53.0	61.0	0.0	0.0	0.0
Volume/Cap:	0.80	0.42	0.31	0.00	0.73	0.49	0.54	0.54	1.81	0.00	0.00	0.00
Delay/Veh:	92.2	11.3	10.2	0.0	19.2	1.2	40.9	40.9	1007	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	0.79	0.72	1.48	1.48	1.12	1.00	1.00	1.00
AdjDel/Veh:	92.2	11.3	10.2	0.0	15.1	0.8	60.5	60.5	1128	0.0	0.0	0.0
DesignQueue:	6	78	13	0	128	5	53	5	83	0	0	0

99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5523: 85/ALMADEN (S)

Signal=Protect/Rights=Overlap

Final Vol:	449	2919***	0		
Lanes:	0 1	3	0 0		

Final Vol:	Lanes:	Signal=Split Rights=Overlap			Signal=Split Rights=Ignore	Lanes:	Final Vol:
729	2		Vol Cnt Date:	n/a		0	0
	1		Cycle Time (sec):	180		0	
63	0		Loss Time (sec):	9		0	0
	0		Critical V/C:	1.118		0	
1072***	1		Avg Crit Del (sec/veh):	281.1		0	0
			Avg Delay (sec/veh):	172.5			
			LOS.	F			

Lanes:	1 0	4	0 1		
Final Vol:	62***	2129	353		

Signal=Protect/Rights=Overlap

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	8	110	10	0	110	10	10	10	10	0	0	0
Volume Module:												
Base Vol:	62	2110	353	0	2909	449	727	63	1072	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Initial Bse:	62	2110	353	0	2909	449	727	63	1072	0	0	0
Added Vol:	0	19	0	0	10	0	2	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	2129	353	0	2919	449	729	63	1072	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	62	2129	353	0	2919	449	729	63	1072	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	2129	353	0	2919	449	729	63	1072	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	62	2129	353	0	2919	449	729	63	1072	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.05	1.00	0.91	1.00	0.97	0.97	1.06	0.97
Lanes:	1.00	4.00	1.00	0.00	3.44	0.56	2.78	0.22	1.00	0.00	0.00	0.00
Final Sat.:	1750	7600	1750	0	6498	1000	4553	393	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.20	0.00	0.45	0.45	0.16	0.16	0.61	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	8.0	118	118.0	0.0	110	163.0	53.0	53.0	61.0	0.0	0.0	0.0
Volume/Cap:	0.80	0.43	0.31	0.00	0.74	0.50	0.54	0.54	1.81	0.00	0.00	0.00
Delay/Veh:	92.2	11.3	10.2	0.0	19.2	1.2	40.9	40.9	1007	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	0.79	0.72	1.48	1.48	1.12	1.00	1.00	1.00
AdjDel/Veh:	92.2	11.3	10.2	0.0	15.1	0.8	60.5	60.5	1128	0.0	0.0	0.0
DesignQueue:	6	79	13	0	129	5	53	5	83	0	0	0

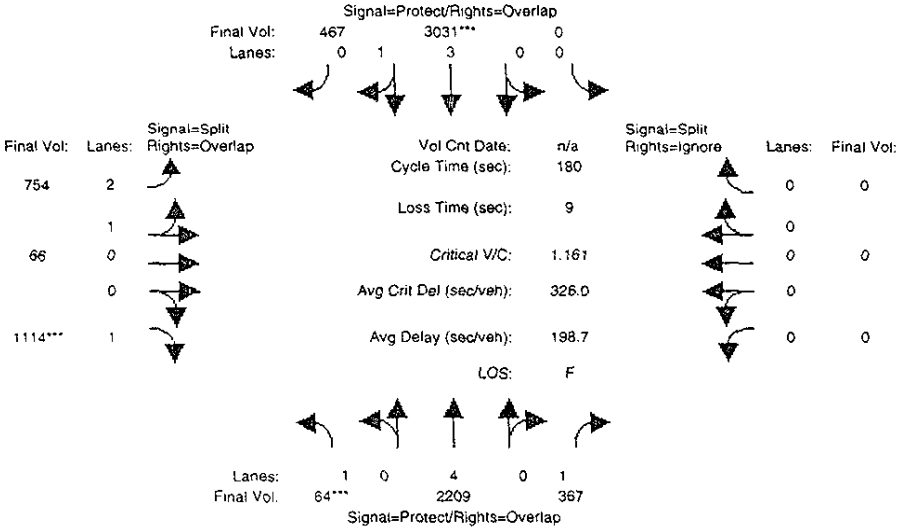
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5523: 85/ALMADEN (S)



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	8	110	10	0	110	10	10	10	10	0	0	0
Volume Module:												
Base Vol:	64	2209	367	0	3031	467	754	66	1114	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Initial Bse:	64	2209	367	0	3031	467	754	66	1114	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	2209	367	0	3031	467	754	66	1114	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	64	2209	367	0	3031	467	754	66	1114	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	2209	367	0	3031	467	754	66	1114	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	64	2209	367	0	3031	467	754	66	1114	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.97	1.05	1.00	0.91	1.00	0.97	0.97	1.06	0.97
Lanes:	1.00	4.00	1.00	0.00	3.44	0.56	2.78	0.22	1.00	0.00	0.00	0.00
Final Sat.:	1750	7600	1750	0	6497	1001	4549	398	1750	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.29	0.21	0.00	0.47	0.47	0.17	0.17	0.64	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	8.0	118	118.0	0.0	110	163.0	53.0	53.0	61.0	0.0	0.0	0.0
Volume/Cap:	0.82	0.44	0.32	0.00	0.76	0.52	0.56	0.56	1.88	0.00	0.00	0.00
Delay/Veh:	96.5	11.5	10.3	0.0	20.0	1.2	41.2	41.2	1172	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	0.80	0.72	1.48	1.48	1.12	1.00	1.00	1.00
AdjDel/Veh:	96.5	11.5	10.3	0.0	16.0	0.9	61.0	61.0	1313	0.0	0.0	0.0
DesignQueue:	6	82	13	0	134	5	55	5	87	0	0	0

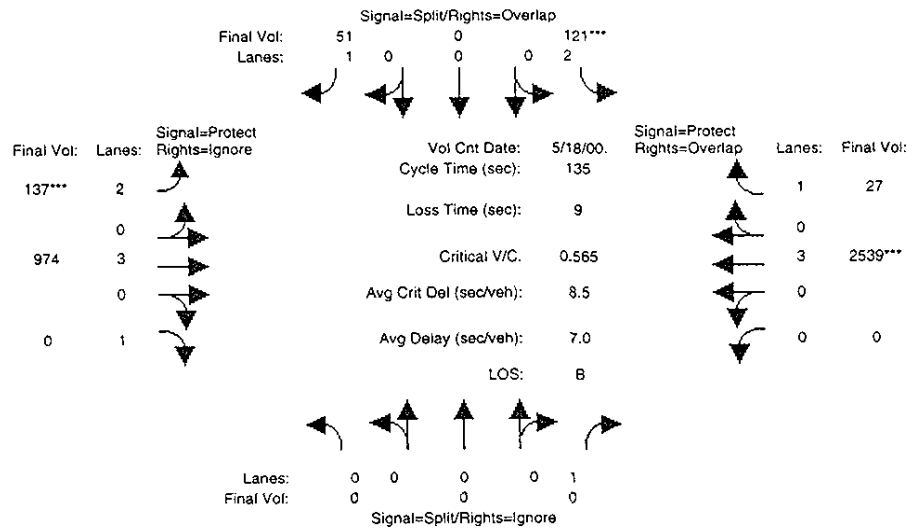
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #5708: COPPERFIELD/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	7	10	10	0	10	10
Volume Module: >> Count Date: 18 May 2000 <<												
Base Vol:	0	0	49	121	0	51	137	974	20	0	2539	27
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	0	0	121	0	51	137	974	0	0	2539	27
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	121	0	51	137	974	0	0	2539	27
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	121	0	51	137	974	0	0	2539	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	121	0	51	137	974	0	0	2539	27
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	0	0	121	0	51	137	974	0	0	2539	27
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	1.00	2.00	0.00	1.00	2.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	1750	3150	0	1750	3150	5700	1750	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.03	0.04	0.17	0.00	0.00	0.45	0.02
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.07	0.00	0.15	0.08	0.86	0.00	0.00	0.78	0.86
Volume/Cap:	0.00	0.00	0.00	0.52	0.00	0.19	0.57	0.20	0.00	0.00	0.57	0.02
Delay/Veh:	0.0	0.0	0.0	47.4	0.0	38.2	48.1	1.2	0.0	0.0	4.5	1.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	47.4	0.0	38.2	48.1	1.2	0.0	0.0	4.5	1.1
DesignQueue:	0	0	0	8	0	3	10	11	0	0	47	0

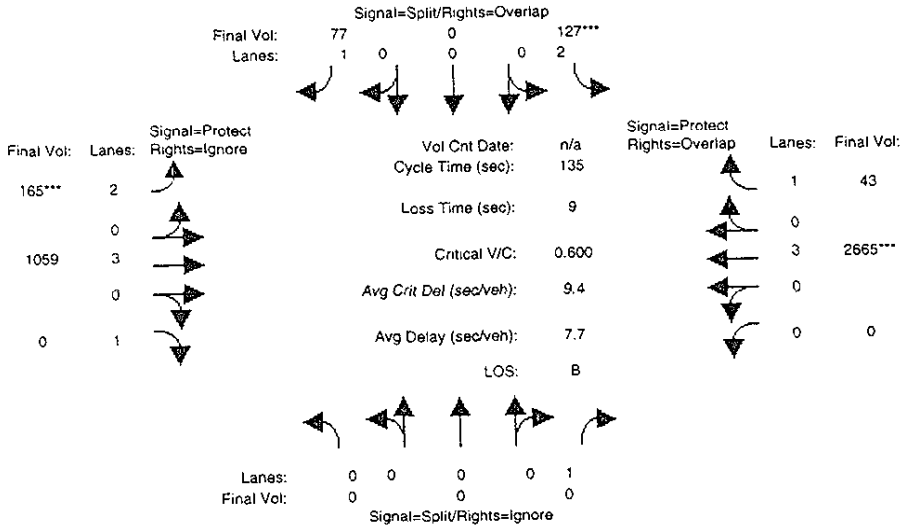
99-089

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5708: COPPERFIELD/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	10	0	10	10
Volume Module:												
Base Vol:	0	0	50	127	0	77	165	1059	20	0	2665	43
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	0	0	127	0	77	165	1059	0	0	2665	43
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	127	0	77	165	1059	0	0	2665	43
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	127	0	77	165	1059	0	0	2665	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	127	0	77	165	1059	0	0	2665	43
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	0	0	127	0	77	165	1059	0	0	2665	43
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	1.00	2.00	0.00	1.00	2.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	1750	3150	0	1750	3150	5700	1750	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.04	0.05	0.19	0.00	0.00	0.47	0.02
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	10.0	0.0	21.7	11.7	116	0.0	0.0	104	114.3
Volume/Cap:	0.00	0.00	0.00	0.54	0.00	0.27	0.61	0.22	0.00	0.00	0.61	0.03
Delay/Veh:	0.0	0.0	0.0	47.8	0.0	37.9	47.9	1.3	0.0	0.0	5.2	1.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	47.8	0.0	37.9	47.9	1.3	0.0	0.0	5.2	1.2
DesignQueue:	0	0	0	9	0	5	11	12	0	0	52	0

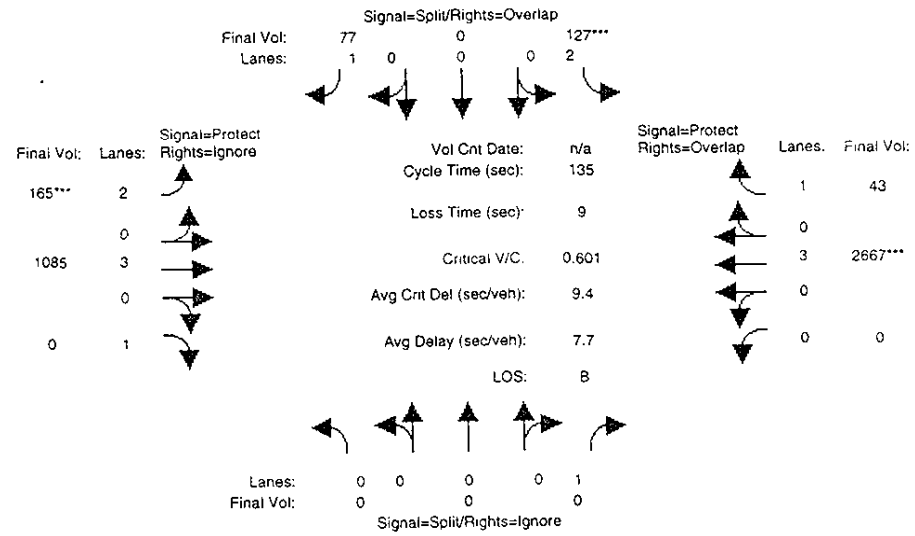
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5708: COPPERFIELD/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	10	0	10	10
Volume Module:												
Base Vol:	0	0	50	127	0	77	165	1059	20	0	2665	43
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	0	0	127	0	77	165	1059	0	0	2665	43
Added Vol:	0	0	0	0	0	0	0	26	0	0	2	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	127	0	77	165	1085	0	0	2667	43
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	127	0	77	165	1085	0	0	2667	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	127	0	77	165	1085	0	0	2667	43
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	0	0	127	0	77	165	1085	0	0	2667	43
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	1.00	2.00	0.00	1.00	2.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	1750	3150	0	1750	3150	5700	1750	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.04	0.05	0.19	0.00	0.00	0.47	0.02
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	10.0	0.0	21.7	11.7	116	0.0	0.0	104	114.3
Volume/Cap:	0.00	0.00	0.00	0.54	0.00	0.27	0.61	0.22	0.00	0.00	0.61	0.03
Delay/Veh:	0.0	0.0	0.0	47.8	0.0	37.9	47.9	1.3	0.0	0.0	5.2	1.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	47.8	0.0	37.9	47.9	1.3	0.0	0.0	5.2	1.2
DesignQueue:	0	0	0	9	0	5	11	12	0	0	52	0

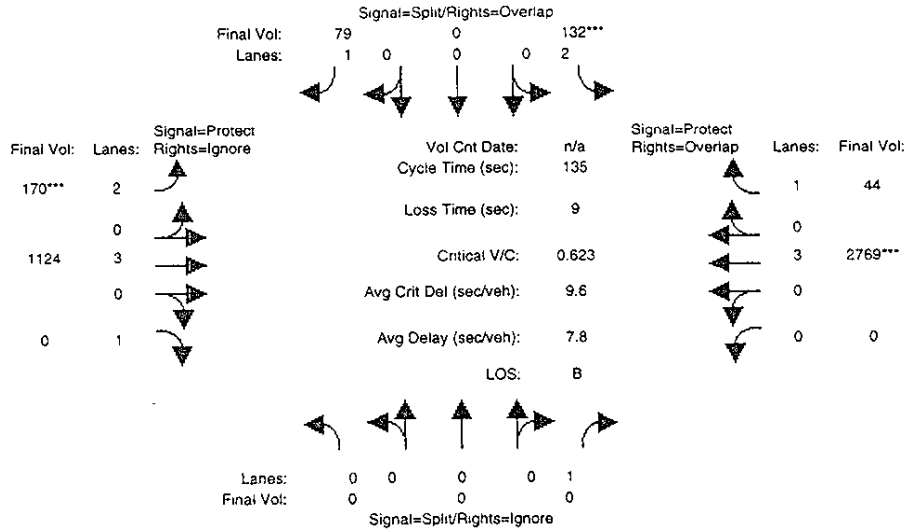
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5708: COPPERFIELD/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	10	0	10	10
Volume Module:												
Base Vol:	0	0	52	132	0	79	170	1124	21	0	2769	44
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	0	0	132	0	79	170	1124	0	0	2769	44
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	132	0	79	170	1124	0	0	2769	44
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	132	0	79	170	1124	0	0	2769	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	132	0	79	170	1124	0	0	2769	44
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	0	0	132	0	79	170	1124	0	0	2769	44
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	1.00	2.00	0.00	1.00	2.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	1750	3150	0	1750	3150	5700	1750	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.05	0.05	0.20	0.00	0.00	0.49	0.03
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	10.0	0.0	21.6	11.6	116	0.0	0.0	104	114.4
Volume/Cap:	0.00	0.00	0.00	0.57	0.00	0.28	0.63	0.23	0.00	0.00	0.63	0.03
Delay/Veh:	0.0	0.0	0.0	48.3	0.0	38.1	48.5	1.3	0.0	0.0	5.3	1.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	48.3	0.0	38.1	48.5	1.3	0.0	0.0	5.3	1.2
DesignQueue:	0	0	0	9	0	5	12	13	0	0	54	1

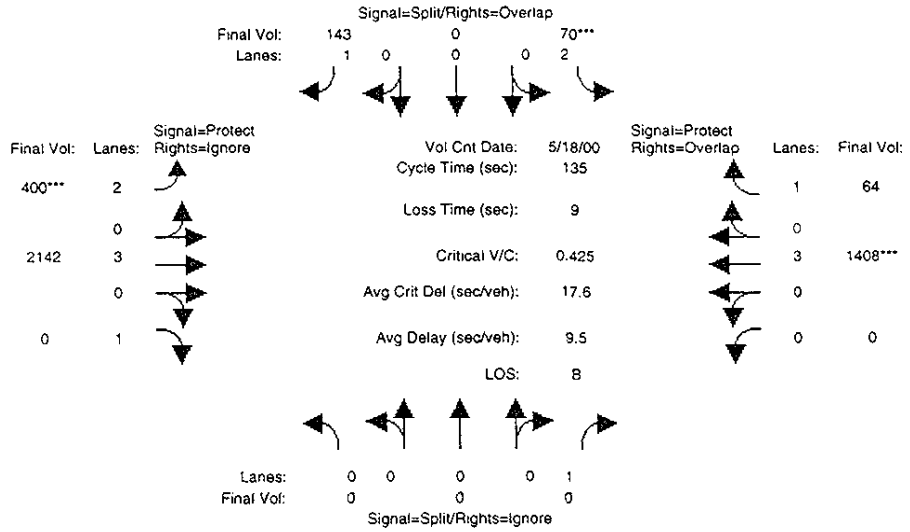
99-088

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #5708: COPPERFIELD/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	7	10	10	0	10	10
Volume Module: >> Count Date: 18 May 2000 <<												
Base Vol:	0	0	40	70	0	143	400	2142	117	0	1408	64
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	0	0	70	0	143	400	2142	0	0	1408	64
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	70	0	143	400	2142	0	0	1408	64
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	70	0	143	400	2142	0	0	1408	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	70	0	143	400	2142	0	0	1408	64
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	0	0	70	0	143	400	2142	0	0	1408	64
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	1.00	2.00	0.00	1.00	2.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	1750	3150	0	1750	3150	5700	1750	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.02	0.00	0.08	0.13	0.38	0.00	0.00	0.25	0.04
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.07	0.00	0.37	0.29	0.86	0.00	0.00	0.57	0.64
Volume/Cap:	0.00	0.00	0.00	0.30	0.00	0.22	0.44	0.44	0.00	0.00	0.44	0.06
Delay/Veh:	0.0	0.0	0.0	45.2	0.0	22.5	29.7	1.7	0.0	0.0	12.8	6.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	45.2	0.0	22.5	29.7	1.7	0.0	0.0	12.8	6.8
DesignQueue:	0	0	0	5	0	7	22	25	0	0	49	2

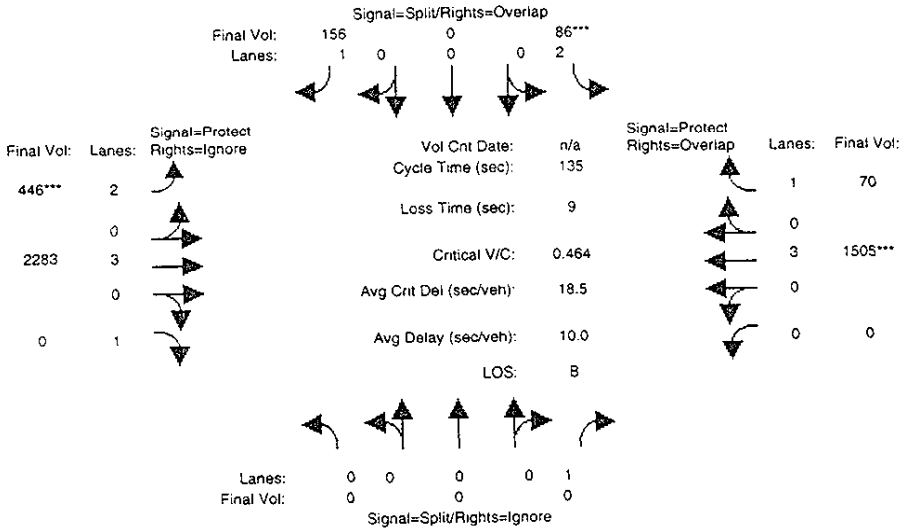
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5708: COPPERFIELD/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	7	10	10	0	10	10
Volume Module:												
Base Vol:	0	0	41	86	0	156	446	2283	117	0	1505	70
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	0	0	86	0	156	446	2283	0	0	1505	70
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	86	0	156	446	2283	0	0	1505	70
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	86	0	156	446	2283	0	0	1505	70
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	86	0	156	446	2283	0	0	1505	70
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	0	0	86	0	156	446	2283	0	0	1505	70
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	1.00	2.00	0.00	1.00	2.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	1750	3150	0	1750	3150	5700	1750	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.09	0.14	0.40	0.00	0.00	0.26	0.04
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	10.0	0.0	50.5	40.5	116	0.0	0.0	75.5	85.5
Volume/Cap:	0.00	0.00	0.00	0.37	0.00	0.24	0.47	0.47	0.00	0.00	0.47	0.06
Delay/Veh:	0.0	0.0	0.0	45.7	0.0	22.1	29.6	1.7	0.0	0.0	13.6	7.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	45.7	0.0	22.1	29.6	1.7	0.0	0.0	13.6	7.2
DesignQueue:	0	0	0	6	0	7	24	27	0	0	53	2

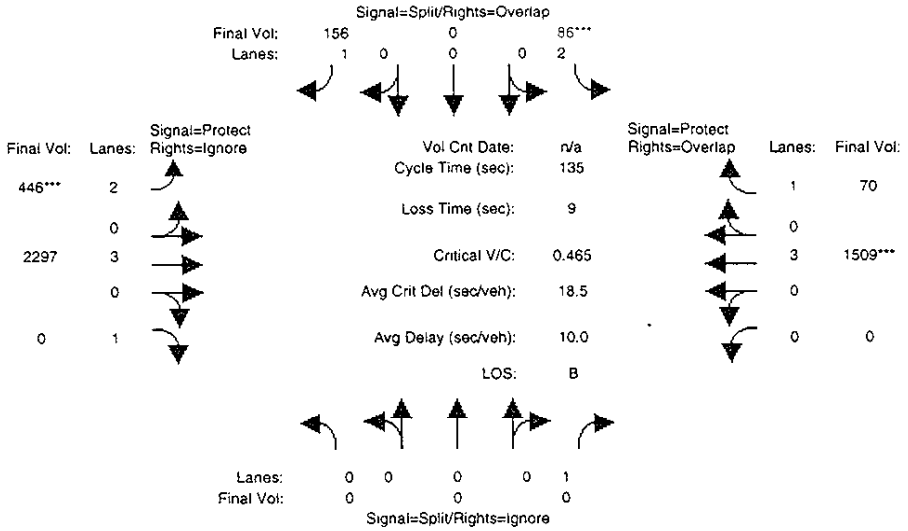
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5708: COPPERFIELD/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	7	10	10	0	10	10
Volume Module:												
Base Vol:	0	0	41	86	0	156	446	2283	117	0	1505	70
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	0	0	86	0	156	446	2283	0	0	1505	70
Added Vol:	0	0	0	0	0	0	0	14	0	0	4	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	86	0	156	446	2297	0	0	1509	70
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	86	0	156	446	2297	0	0	1509	70
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	86	0	156	446	2297	0	0	1509	70
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	0	0	86	0	156	446	2297	0	0	1509	70
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	1.00	2.00	0.00	1.00	2.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	1750	3150	0	1750	3150	5700	1750	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.09	0.14	0.40	0.00	0.00	0.26	0.04
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	10.0	0.0	50.4	40.4	116	0.0	0.0	75.6	85.6
Volume/Cap:	0.00	0.00	0.00	0.37	0.00	0.24	0.47	0.47	0.00	0.00	0.47	0.06
Delay/Veh:	0.0	0.0	0.0	45.7	0.0	22.1	29.6	1.8	0.0	0.0	13.6	7.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	45.7	0.0	22.1	29.6	1.8	0.0	0.0	13.6	7.2
DesignQueue:	0	0	0	6	0	7	24	27	0	0	54	2

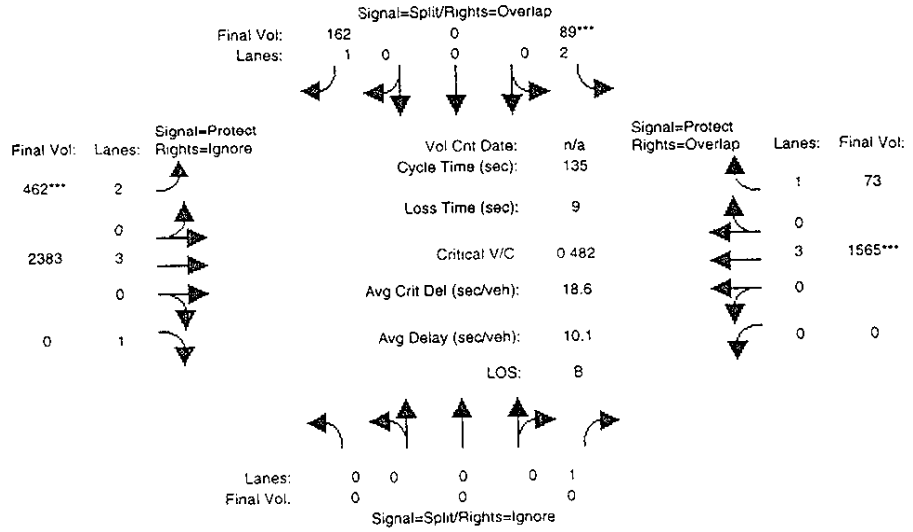
99-088

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5708: COPPERFIELD/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	7	10	10	0	10	10
Volume Module:												
Base Vol:	0	0	43	89	0	162	462	2383	122	0	1565	73
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	0	0	0	89	0	162	462	2383	0	0	1565	73
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	89	0	162	462	2383	0	0	1565	73
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	89	0	162	462	2383	0	0	1565	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	89	0	162	462	2383	0	0	1565	73
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	0	0	0	89	0	162	462	2383	0	0	1565	73
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.97	1.06	0.97
Lanes:	0.00	0.00	1.00	2.00	0.00	1.00	2.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	1750	3150	0	1750	3150	5700	1750	0	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.09	0.15	0.42	0.00	0.00	0.27	0.04
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	10.0	0.0	50.4	40.4	116	0.0	0.0	75.6	85.6
Volume/Cap:	0.00	0.00	0.00	0.38	0.00	0.25	0.49	0.49	0.00	0.00	0.49	0.07
Delay/Veh:	0.0	0.0	0.0	45.8	0.0	22.2	29.9	1.8	0.0	0.0	13.8	7.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	45.8	0.0	22.2	29.9	1.8	0.0	0.0	13.8	7.2
DesignQueue:	0	0	0	6	0	8	25	28	0	0	56	2

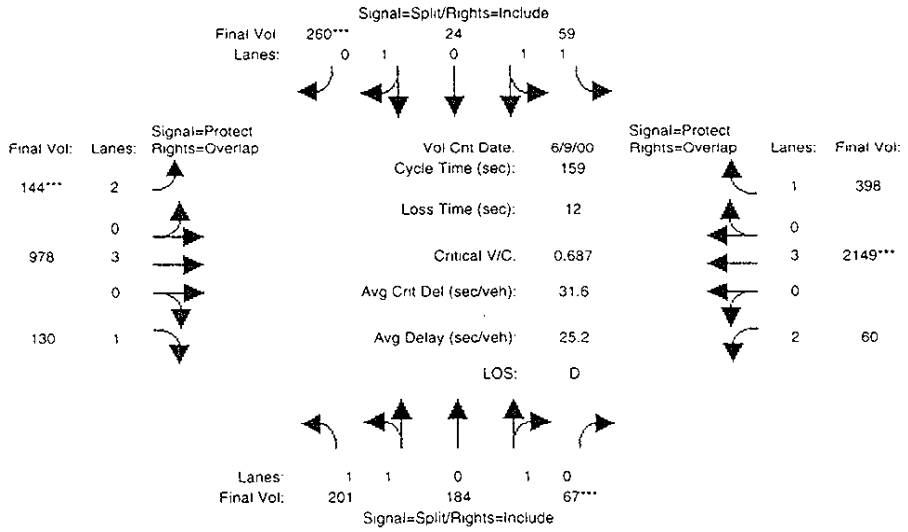
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #5711: CAPITOL/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Volume Module: >> Count Date: 9 Jun 2000 <<												
Base Vol:	201	184	67	59	24	260	144	978	130	60	2149	398
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	184	67	59	24	260	144	978	130	60	2149	398
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	201	184	67	59	24	260	144	978	130	60	2149	398
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	201	184	67	59	24	260	144	978	130	60	2149	398
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	184	67	59	24	260	144	978	130	60	2149	398
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	201	184	67	59	24	260	144	978	130	60	2149	398
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.47	1.31	1.00	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	1.19	1.23	0.58	1.45	0.55	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3148	2882	1049	2546	1036	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.02	0.02	0.15	0.05	0.17	0.07	0.02	0.38	0.23
Crit Moves:			****			****	****				****	
Green/Cycle:	0.09	0.09	0.09	0.22	0.22	0.22	0.07	0.55	0.65	0.06	0.55	0.77
Volume/Cap:	0.69	0.69	0.69	0.11	0.11	0.69	0.69	0.31	0.12	0.30	0.69	0.30
Delay/Veh:	55.2	55.2	55.2	38.0	38.0	46.3	61.3	14.6	8.2	54.4	20.2	4.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.36	1.36	1.36	1.48	1.48	1.36	1.00	1.00	1.00	1.00	0.76	0.72
AdjDel/Veh:	75.0	75.0	75.0	56.2	56.2	62.9	61.3	14.6	8.2	54.4	15.4	3.1
DesignQueue:	16	15	5	4	2	19	12	40	4	5	95	9

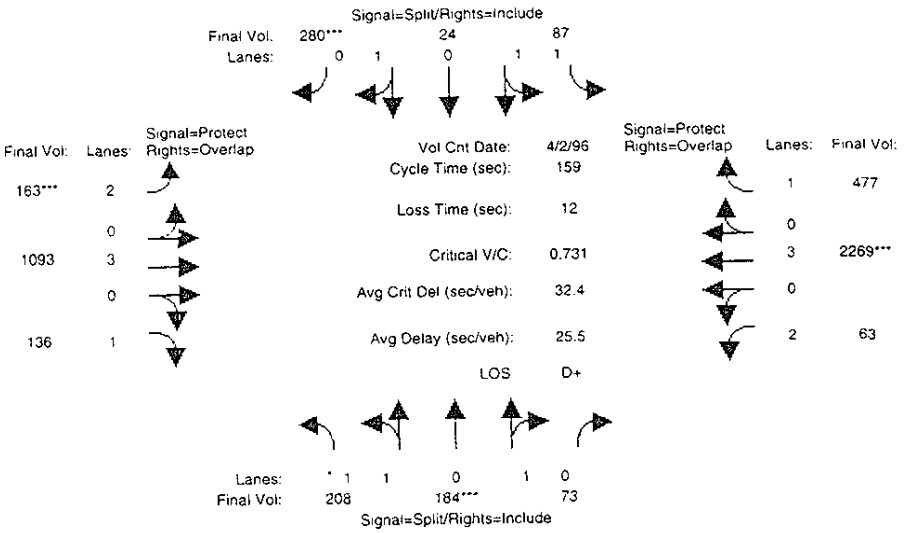
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5711: CAPITOL/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Volume Module: >> Count Date: 2 Apr 1996 <<												
Base Vol:	208	184	73	87	24	280	163	1093	136	63	2269	477
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	184	73	87	24	280	163	1093	136	63	2269	477
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	208	184	73	87	24	280	163	1093	136	63	2269	477
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	184	73	87	24	280	163	1093	136	63	2269	477
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	184	73	87	24	280	163	1093	136	63	2269	477
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	208	184	73	87	24	280	163	1093	136	63	2269	477
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.47	1.31	1.00	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	1.19	1.19	0.62	1.59	0.41	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3159	2795	1109	2791	770	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.07	0.03	0.03	0.16	0.05	0.19	0.08	0.02	0.40	0.27
Crit Moves:		****				****	****				****	
Green Time:	14.3	14.3	14.3	34.8	34.8	34.8	11.3	87.9	102.2	10.0	86.6	121.4
Volume/Cap:	0.73	0.73	0.73	0.14	0.14	0.73	0.73	0.35	0.12	0.32	0.73	0.36
Delay/Veh:	56.5	56.5	56.5	38.0	38.0	47.4	62.8	15.0	8.4	54.5	21.4	4.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.30	1.30	1.30	1.48	1.48	1.30	1.00	1.00	1.00	1.00	0.79	0.72
AdjDel/Veh:	73.3	73.3	73.3	56.3	56.3	61.5	62.8	15.0	8.4	54.5	16.8	3.4
DesignQueue:	17	15	6	6	2	20	14	45	4	5	102	11

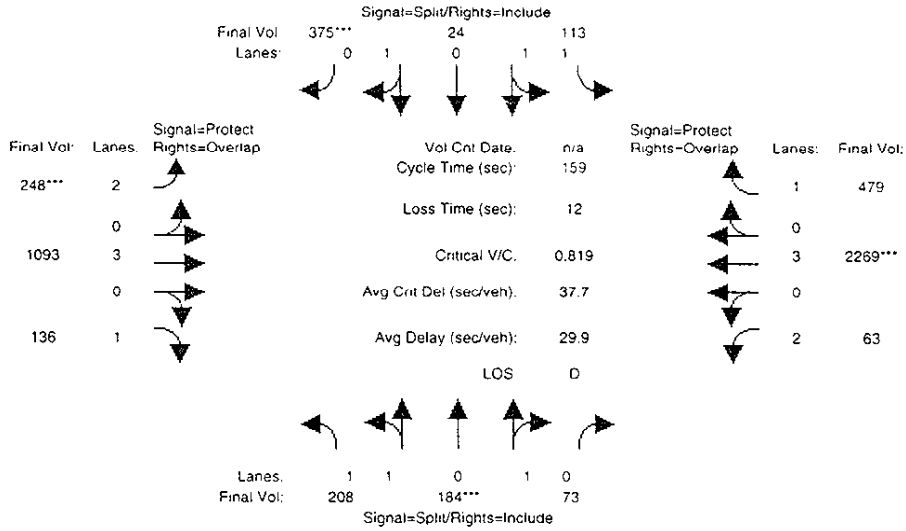
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5711: CAPITOL/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Volume Module:												
Base Vol:	208	184	73	87	24	280	163	1093	136	63	2269	477
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	184	73	87	24	280	163	1093	136	63	2269	477
Added Vol:	0	0	0	26	0	95	85	0	0	0	0	2
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	208	184	73	113	24	375	248	1093	136	63	2269	479
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	184	73	113	24	375	248	1093	136	63	2269	479
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	184	73	113	24	375	248	1093	136	63	2269	479
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	208	184	73	113	24	375	248	1093	136	63	2269	479
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.47	1.31	1.00	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	1.19	1.19	0.62	1.67	0.33	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3159	2795	1109	2927	622	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.07	0.04	0.04	0.21	0.08	0.19	0.08	0.02	0.40	0.27
Crit Moves:		****				****	****				****	
Green Time:	12.8	12.8	12.8	41.6	41.6	41.6	15.3	82.6	95.4	10.0	77.3	118.9
Volume/Cap:	0.82	0.82	0.82	0.15	0.15	0.82	0.82	0.37	0.13	0.32	0.82	0.37
Delay/Veh:	61.1	61.1	61.1	34.3	34.3	47.8	64.5	17.3	10.5	54.5	28.0	5.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.19	1.19	1.19	1.48	1.48	1.19	1.00	1.00	1.00	1.00	0.83	0.72
AdjDel/Veh:	72.9	72.9	72.9	50.7	50.7	57.0	64.5	17.3	10.5	54.5	23.1	3.9
DesignQueue:	17	15	6	7	2	26	20	49	5	5	115	11

99-083

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations Method (Future Volume Alternative)

Intersection #5711 CAPITOL/NARVAEZ

Cycle (sec):	159	Critical Vol./Cap. (X):	0.819
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	29.9
Optimal Cycle:	94	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ovl			Ovl		
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Lanes:	1 1	0 1	0	1 1	0 1	0	2 0	3 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	208	184	73	87	24	280	163	1093	136	63	2269	477
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	184	73	87	24	280	163	1093	136	63	2269	477
Added Vol:	0	0	0	26	0	95	85	0	0	0	0	2
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	208	184	73	113	24	375	248	1093	136	63	2269	479
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	184	73	113	24	375	248	1093	136	63	2269	479
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	184	73	113	24	375	248	1093	136	63	2269	479
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	208	184	73	113	24	375	248	1093	136	63	2269	479
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.47	1.31	1.00	0.97	1.06	0.97	0.88	1.05	1.00	0.88	1.06	0.97
Lanes:	1.19	1.19	0.62	1.67	0.33	1.00	2.00	3.54	0.46	2.00	3.00	1.00
Final Sat.:	3159	2795	1109	2927	622	1750	3150	6669	830	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.07	0.04	0.04	0.21	0.08	0.16	0.16	0.02	0.40	0.27
Crit Moves:		****				****	****				****	
Green Time:	12.8	12.8	12.8	41.6	41.6	41.6	15.3	82.6	95.4	10.0	77.3	118.9
Volume/Cap:	0.82	0.82	0.82	0.15	0.15	0.82	0.82	0.32	0.27	0.32	0.82	0.37
Delay/Veh:	61.1	61.1	61.1	34.3	34.3	47.8	64.5	16.7	11.6	54.5	28.0	5.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.19	1.19	1.19	1.48	1.48	1.19	1.00	1.00	1.00	1.00	0.83	0.72
AdjDel/Veh:	72.9	72.9	72.9	50.7	50.7	57.0	64.5	16.7	11.6	54.5	23.1	3.9
DesignQueue:	17	15	6	7	2	26	20	48	5	5	115	11

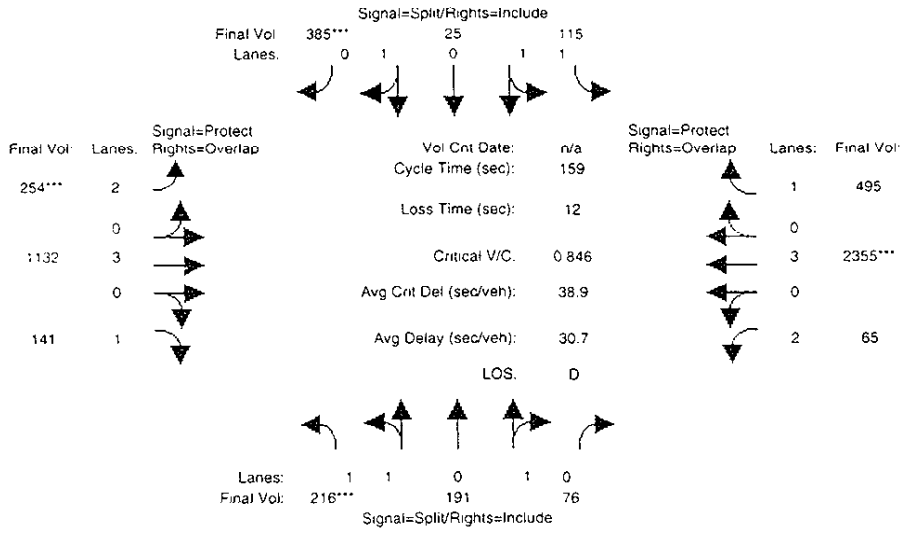
Traffix 7.1.0607 (c) 1999 Dowling Assoc. Licensed to Hexagon Trans. San Jose

99-082

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5711: CAPITOL/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Volume Module:												
Base Vol:	216	191	76	115	25	385	254	1132	141	65	2355	495
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	191	76	115	25	385	254	1132	141	65	2355	495
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	191	76	115	25	385	254	1132	141	65	2355	495
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	216	191	76	115	25	385	254	1132	141	65	2355	495
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	216	191	76	115	25	385	254	1132	141	65	2355	495
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	216	191	76	115	25	385	254	1132	141	65	2355	495
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.47	1.31	1.00	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	1.19	1.19	0.62	1.67	0.33	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3158	2792	1111	2916	634	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.07	0.04	0.04	0.22	0.08	0.20	0.08	0.02	0.41	0.28
Crit Moves:	****					****	****				****	
Green Time:	12.9	12.9	12.9	41.3	41.3	41.3	15.2	82.8	95.7	10.0	77.6	119.0
Volume/Cap:	0.85	0.85	0.85	0.15	0.15	0.85	0.85	0.38	0.13	0.33	0.85	0.38
Delay/Veh:	62.7	62.7	62.7	34.4	34.4	49.8	67.2	17.4	10.4	54.5	28.8	5.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.18	1.18	1.18	1.48	1.48	1.18	1.00	1.00	1.00	1.00	0.84	0.72
AdjDel/Veh:	74.1	74.1	74.1	51.0	51.0	58.8	67.2	17.4	10.4	54.5	24.2	3.9
DesignQueue:	18	16	6	8	2	27	21	51	5	5	119	12

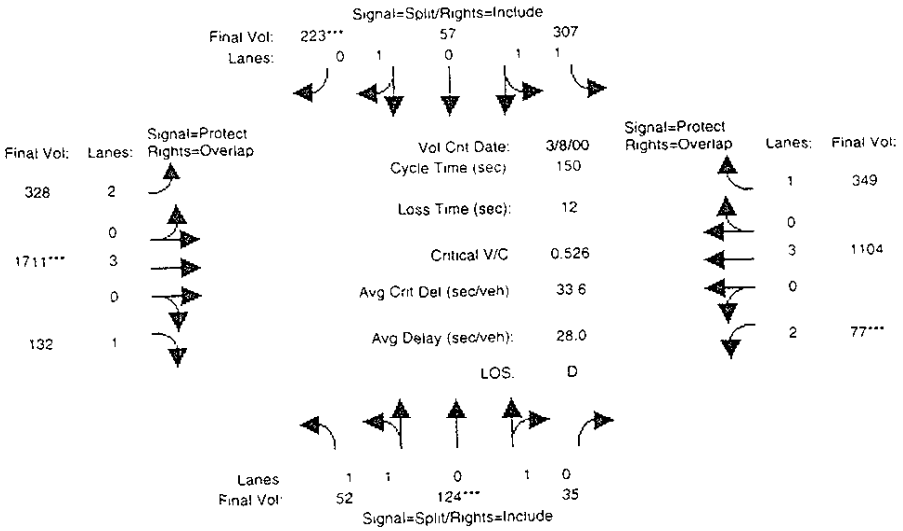
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #5711: CAPITOL/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	14	10	14	14	10	14	65	10	14	55	10
Volume Module:	>> Count Date: 8 Mar 2000 <<											
Base Vol:	52	124	35	307	57	223	328	1711	132	77	1104	349
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	124	35	307	57	223	328	1711	132	77	1104	349
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	52	124	35	307	57	223	328	1711	132	77	1104	349
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	52	124	35	307	57	223	328	1711	132	77	1104	349
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	124	35	307	57	223	328	1711	132	77	1104	349
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	52	124	35	307	57	223	328	1711	132	77	1104	349
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.46	1.35	1.00	0.98	1.00	1.00	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.45	0.55	1.69	0.31	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2625	3523	994	2991	555	1800	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.04	0.10	0.10	0.12	0.10	0.30	0.08	0.02	0.19	0.20
Crit Moves:		****				****		****		****		
Green/Cycle:	0.09	0.09	0.09	0.21	0.21	0.21	0.25	0.52	0.61	0.09	0.37	0.58
Volume/Cap:	0.21	0.38	0.38	0.48	0.48	0.58	0.42	0.58	0.12	0.26	0.53	0.34
Delay/Veh:	47.8	48.8	48.8	39.5	39.5	40.8	36.4	19.1	9.3	48.1	28.6	12.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.48	1.48	1.48	1.48	1.48	1.48	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	70.8	72.2	72.2	58.4	58.4	60.4	36.4	19.1	9.3	48.1	20.6	9.1
DesignQueue:	4	9	3	21	4	15	21	74	4	6	61	13

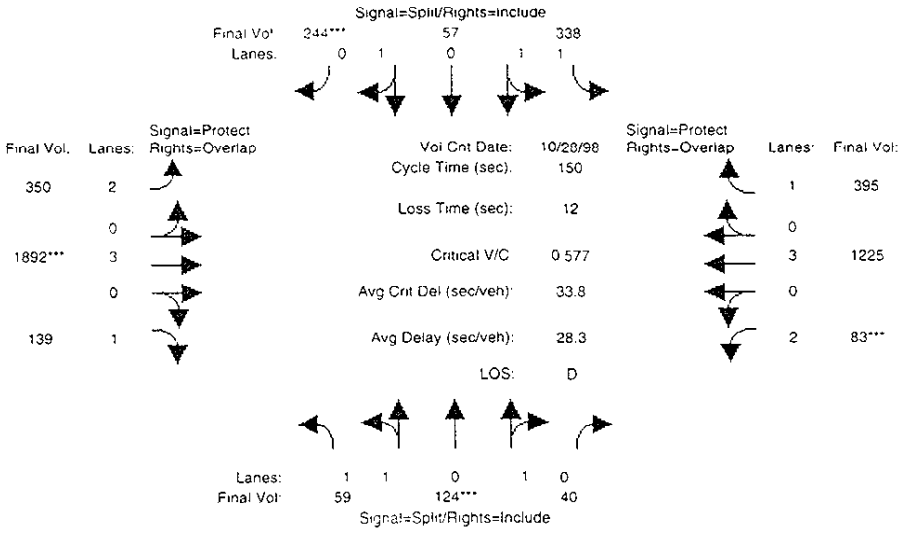
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5711: CAPITOL/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	14	10	14	14	10	14	65	10	14	55	10
Volume Module: >> Count Date: 28 Oct 1998 <<												
Base Vol:	59	124	40	338	57	244	350	1892	139	83	1225	395
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	59	124	40	338	57	244	350	1892	139	83	1225	395
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	59	124	40	338	57	244	350	1892	139	83	1225	395
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	59	124	40	338	57	244	350	1892	139	83	1225	395
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	124	40	338	57	244	350	1892	139	83	1225	395
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	59	124	40	338	57	244	350	1892	139	83	1225	395
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.46	1.35	1.00	0.98	1.00	1.00	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.39	0.61	1.72	0.28	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2625	3392	1094	3034	512	1800	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.04	0.11	0.11	0.14	0.11	0.33	0.08	0.03	0.21	0.23
Crit Moves:		****				****		****		****		
Green Time:	14.0	14.0	14.0	31.9	31.9	31.9	37.1	78.1	92.1	14.0	55.0	86.9
Volume/Cap:	0.24	0.39	0.39	0.52	0.52	0.64	0.45	0.64	0.13	0.28	0.59	0.39
Delay/Veh:	48.0	48.9	48.9	40.1	40.1	41.8	36.6	19.9	9.2	48.3	29.4	13.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.48	1.48	1.48	1.48	1.48	1.43	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	71.0	72.3	72.3	59.4	59.4	59.7	36.6	19.9	9.2	48.3	21.2	9.5
DesignQueue:	4	9	3	23	4	17	22	83	5	6	69	15

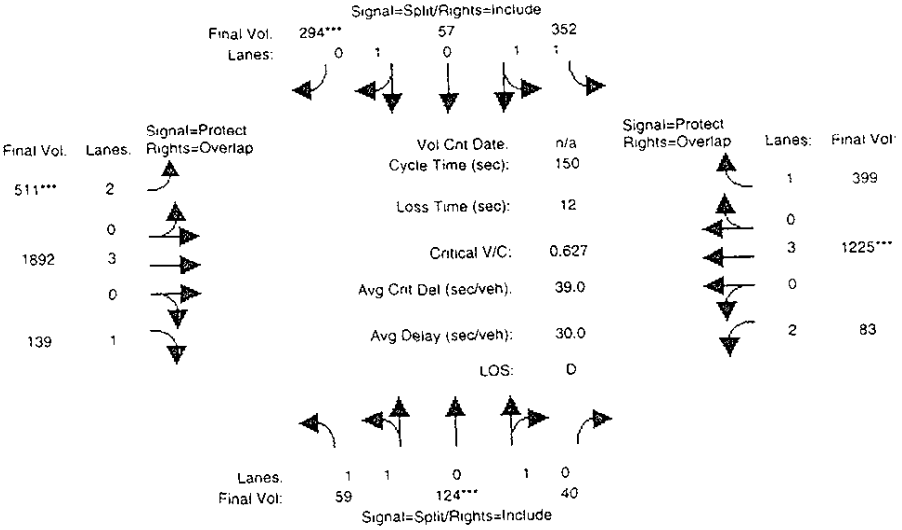
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans, San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5711: CAPITOL/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	14	10	14	14	10	14	65	10	14	55	10
Volume Module:												
Base Vol:	59	124	40	338	57	244	350	1892	139	83	1225	395
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	59	124	40	338	57	244	350	1892	139	83	1225	395
Added Vol:	0	0	0	14	0	50	161	0	0	0	0	4
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	59	124	40	352	57	294	511	1892	139	83	1225	399
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	59	124	40	352	57	294	511	1892	139	83	1225	399
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	124	40	352	57	294	511	1892	139	83	1225	399
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	59	124	40	352	57	294	511	1892	139	83	1225	399
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.46	1.35	1.00	0.98	1.00	1.00	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.39	0.61	1.73	0.27	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2625	3392	1094	3049	494	1800	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.04	0.12	0.12	0.16	0.16	0.33	0.08	0.03	0.21	0.23
Crit Moves:		****				****	****				****	
Green Time:	14.0	14.0	14.0	34.6	34.6	34.6	34.4	73.5	87.5	15.8	55.0	89.6
Volume/Cap:	0.24	0.39	0.39	0.50	0.50	0.71	0.71	0.68	0.14	0.25	0.59	0.38
Delay/Veh:	48.0	48.9	48.9	38.4	38.4	41.9	42.6	22.6	10.7	46.9	29.4	12.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.48	1.48	1.48	1.48	1.48	1.33	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	71.0	72.3	72.3	56.8	56.8	55.8	42.6	22.6	10.7	46.9	21.2	8.7
DesignQueue:	4	9	3	23	4	20	34	88	5	6	69	14

99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations Method (Future Volume Alternative)

Intersection #5711 CAPITOL/NARVAEZ

Cycle (sec): 150 Critical Vol./Cap. (X): 0.627
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 29.5
Optimal Cycle: 119 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ovl			Ovl		
Min. Green:	14	14	10	14	14	10	14	65	10	14	55	10
Lanes:	1 1	0 1	0	1 1	0 1	0	2 0	3 1	0	2 0	3 0	.1
Volume Module:												
Base Vol:	59	124	40	338	57	244	350	1892	139	83	1225	395
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	59	124	40	338	57	244	350	1892	139	83	1225	395
Added Vol:	0	0	0	14	0	50	161	0	0	0	0	4
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	59	124	40	352	57	294	511	1892	139	83	1225	399
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	59	124	40	352	57	294	511	1892	139	83	1225	399
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	124	40	352	57	294	511	1892	139	83	1225	399
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	59	124	40	352	57	294	511	1892	139	83	1225	399
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.46	1.35	1.00	0.98	1.00	1.00	0.88	1.04	1.00	0.88	1.06	0.97
Lanes:	1.00	1.39	0.61	1.73	0.27	1.00	2.00	3.71	0.29	2.00	3.00	1.00
Final Sat.:	2625	3392	1094	3049	494	1800	3150	6986	513	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.04	0.12	0.12	0.16	0.16	0.27	0.27	0.03	0.21	0.23
Crit Moves:		****				****	****				****	
Green Time:	14.0	14.0	14.0	34.6	34.6	34.6	34.4	73.5	87.5	15.8	55.0	89.6
Volume/Cap:	0.24	0.39	0.39	0.50	0.50	0.71	0.71	0.55	0.46	0.25	0.59	0.38
Delay/Veh:	48.0	48.9	48.9	38.4	38.4	41.9	42.6	20.5	13.6	46.9	29.4	12.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.48	1.48	1.48	1.48	1.48	1.33	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	71.0	72.3	72.3	56.8	56.8	55.8	42.6	20.5	13.6	46.9	21.2	8.7
DesignQueue:	4	9	3	23	4	20	34	86	5	6	69	14

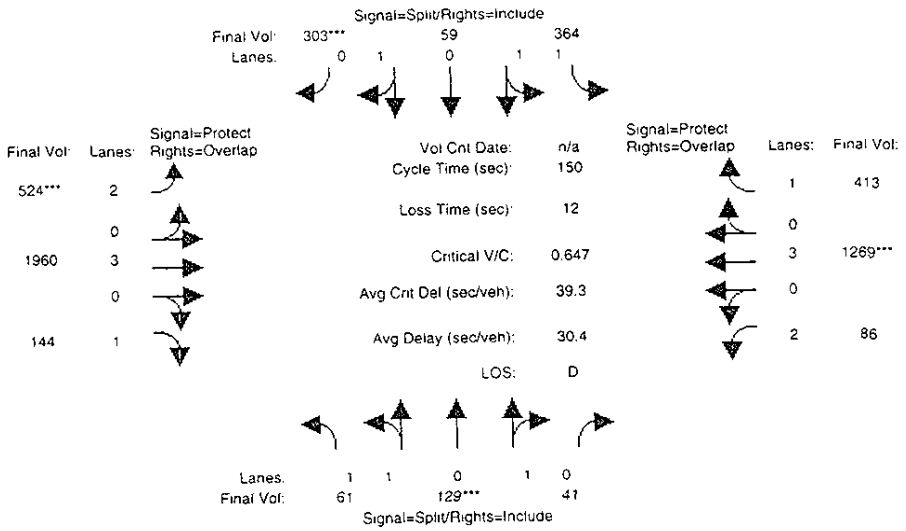
Traffix 7.1.0607 (c) 1999 Dowling Assoc. Licensed to Hexagon Trans. San Jose

99-083

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5711: CAPITOL/NARVAEZ



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	14	10	14	14	10	14	65	10	14	55	10
Volume Module:												
Base Vol:	61	129	41	364	59	303	524	1960	144	86	1269	413
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	129	41	364	59	303	524	1960	144	86	1269	413
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	61	129	41	364	59	303	524	1960	144	86	1269	413
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	61	129	41	364	59	303	524	1960	144	86	1269	413
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	129	41	364	59	303	524	1960	144	86	1269	413
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	61	129	41	364	59	303	524	1960	144	86	1269	413
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.46	1.35	1.00	0.98	1.00	1.00	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	1.00	1.40	0.60	1.73	0.27	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2625	3407	1083	3049	494	1800	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.04	0.12	0.12	0.17	0.17	0.34	0.08	0.03	0.22	0.24
Crit Moves:		****				****	****				****	
Green Time:	14.0	14.0	14.0	34.7	34.7	34.7	34.3	73.5	87.5	15.8	55.0	89.7
Volume/Cap:	0.25	0.41	0.41	0.52	0.52	0.73	0.73	0.70	0.14	0.26	0.61	0.39
Delay/Veh:	48.0	49.0	49.0	38.5	38.5	42.4	43.3	23.2	10.8	47.0	29.8	12.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.48	1.48	1.48	1.48	1.48	1.30	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	71.0	72.5	72.5	57.0	57.0	55.2	43.3	23.2	10.8	47.0	21.6	8.8
DesignQueue:	5	10	3	24	4	20	35	92	5	6	71	15

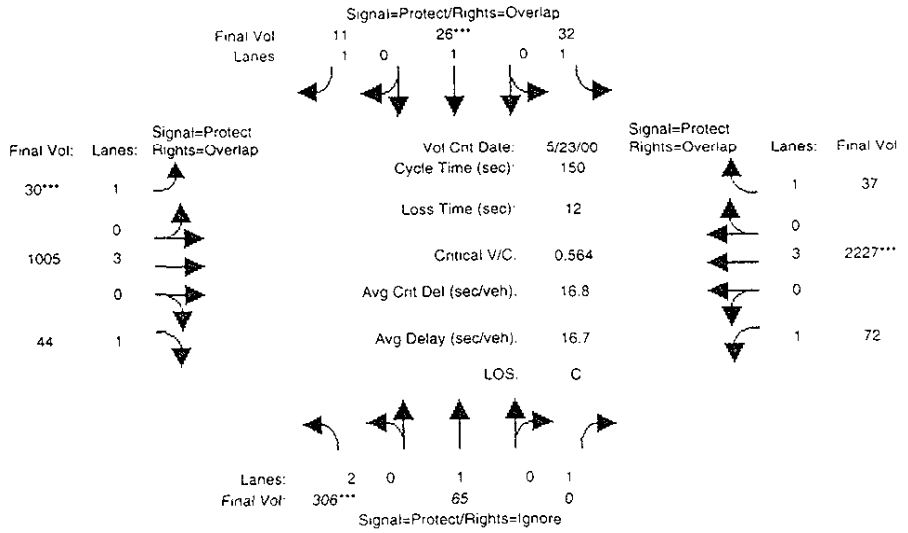
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #5712: VISTA PARK/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 23 May 2000 <<												
Base Vol:	306	65	93	32	26	11	30	1005	44	72	2227	37
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	306	65	0	32	26	11	30	1005	44	72	2227	37
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	306	65	0	32	26	11	30	1005	44	72	2227	37
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	306	65	0	32	26	11	30	1005	44	72	2227	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	306	65	0	32	26	11	30	1005	44	72	2227	37
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	306	65	0	32	26	11	30	1005	44	72	2227	37
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3150	1900	1750	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.03	0.00	0.02	0.01	0.01	0.02	0.18	0.03	0.04	0.39	0.02
Crit Moves:	****				****		****				****	
Green/Cycle:	0.16	0.13	0.00	0.09	0.07	0.11	0.05	0.65	0.81	0.05	0.65	0.74
Volume/Cap:	0.60	0.26	0.00	0.20	0.21	0.06	0.37	0.27	0.03	0.88	0.60	0.03
Delay/Veh:	46.0	44.4	0.0	47.8	50.5	45.1	54.0	8.7	2.2	96.2	11.9	3.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.0	44.4	0.0	47.8	50.5	45.1	54.0	8.7	2.2	96.2	11.9	3.9
DesignQueue:	22	5	0	2	2	1	2	31	1	6	73	1

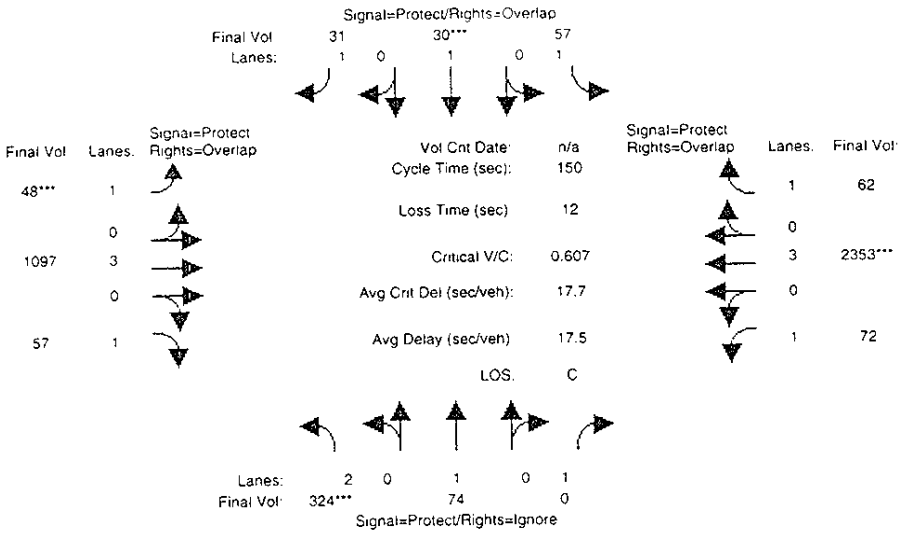
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5712: VISTA PARK/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	324	74	93	57	30	31	48	1097	57	72	2353	62
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	324	74	0	57	30	31	48	1097	57	72	2353	62
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	324	74	0	57	30	31	48	1097	57	72	2353	62
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	324	74	0	57	30	31	48	1097	57	72	2353	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	324	74	0	57	30	31	48	1097	57	72	2353	62
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	324	74	0	57	30	31	48	1097	57	72	2353	62
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3150	1900	1750	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.04	0.00	0.03	0.02	0.02	0.03	0.19	0.03	0.04	0.41	0.04
Crit Moves:	****				****		****				****	
Green Time:	24.1	20.1	0.0	14.1	10.0	17.0	7.0	96.9	121.0	7.0	96.9	110.9
Volume/Cap:	0.64	0.29	0.00	0.35	0.24	0.16	0.59	0.30	0.04	0.88	0.64	0.05
Delay/Veh:	46.6	44.7	0.0	48.9	50.6	45.7	60.5	8.9	2.2	96.2	12.5	4.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.6	44.7	0.0	48.9	50.6	45.7	60.5	8.9	2.2	96.2	12.5	4.0
DesignQueue:	23	5	0	4	2	2	4	34	1	6	78	1

99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5712: VISTA PARK/CAPITOL

Signal=Protect/Rights=Overlap

Final Vol:	31		30***		83
Lanes	1	0	1	0	1

Final Vol.	Lanes	Signal=Protect Rights=Overlap
48***	1	
	0	
1123	3	
	0	
57	1	

Vol Cnt Date:	n/a
Cycle Time (sec):	150
Loss Time (sec):	12
Critical V/C.	0.608
Avg Crit Del (sec/veh):	17.7
Avg Delay (sec/veh):	17.6
LOS	C

Signal=Protect Rights=Overlap	Lanes:	Final Vol:
	1	88
	0	
	3	2355***
	0	
	1	72

Lanes:	2	0	1	0	1
Final Vol:	324***		74		0

Signal=Protect/Rights=Ignore

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	324	74	93	57	30	31	48	1097	57	72	2353	62
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	324	74	0	57	30	31	48	1097	57	72	2353	62
Added Vol:	0	0	0	26	0	0	0	26	0	0	2	26
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	324	74	0	83	30	31	48	1123	57	72	2355	88
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	324	74	0	83	30	31	48	1123	57	72	2355	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	324	74	0	83	30	31	48	1123	57	72	2355	88
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	324	74	0	83	30	31	48	1123	57	72	2355	88
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3150	1900	1750	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.04	0.00	0.05	0.02	0.02	0.03	0.20	0.03	0.04	0.41	0.05
Crit Moves:	****				****		****				****	
Green Time:	24.1	10.0	0.0	24.1	10.0	17.0	7.0	96.9	121.0	7.0	96.9	121.0
Volume/Cap:	0.64	0.58	0.00	0.29	0.24	0.16	0.59	0.31	0.04	0.88	0.64	0.06
Delay/Veh:	46.7	56.4	0.0	42.3	50.6	45.7	60.5	8.9	2.2	96.2	12.5	2.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.7	56.4	0.0	42.3	50.6	45.7	60.5	8.9	2.2	96.2	12.5	2.2
DesignQueue:	23	6	0	6	2	2	4	35	1	6	78	1

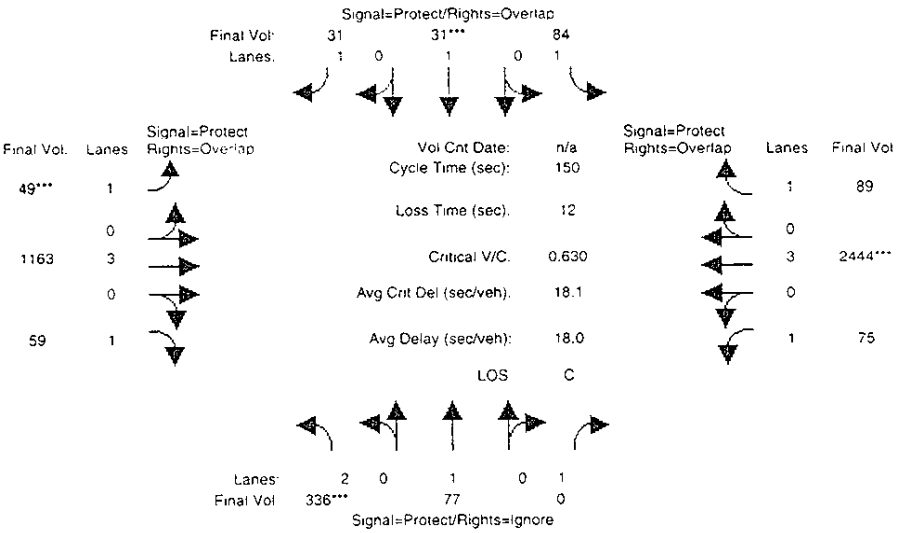
99-083

Copyright © 1998 Dowling Associates Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5712: VISTA PARK/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	336	77	97	84	31	31	49	1163	59	75	2444	89
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	336	77	0	84	31	31	49	1163	59	75	2444	89
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	336	77	0	84	31	31	49	1163	59	75	2444	89
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	336	77	0	84	31	31	49	1163	59	75	2444	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	336	77	0	84	31	31	49	1163	59	75	2444	89
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	336	77	0	84	31	31	49	1163	59	75	2444	89
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3150	1900	1750	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.04	0.00	0.05	0.02	0.02	0.03	0.20	0.03	0.04	0.43	0.05
Crit Moves:	****				****		****				****	
Green Time:	24.1	10.0	0.0	24.1	10.0	17.0	7.0	96.9	121.0	7.0	96.9	121.0
Volume/Cap:	0.66	0.61	0.00	0.30	0.24	0.16	0.60	0.32	0.04	0.92	0.66	0.06
Delay/Veh:	47.2	57.4	0.0	42.4	50.7	45.7	61.2	9.0	2.2	105.2	12.8	2.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.2	57.4	0.0	42.4	50.7	45.7	61.2	9.0	2.2	105.2	12.8	2.2
DesignQueue:	24	6	0	6	2	2	4	36	1	6	81	1

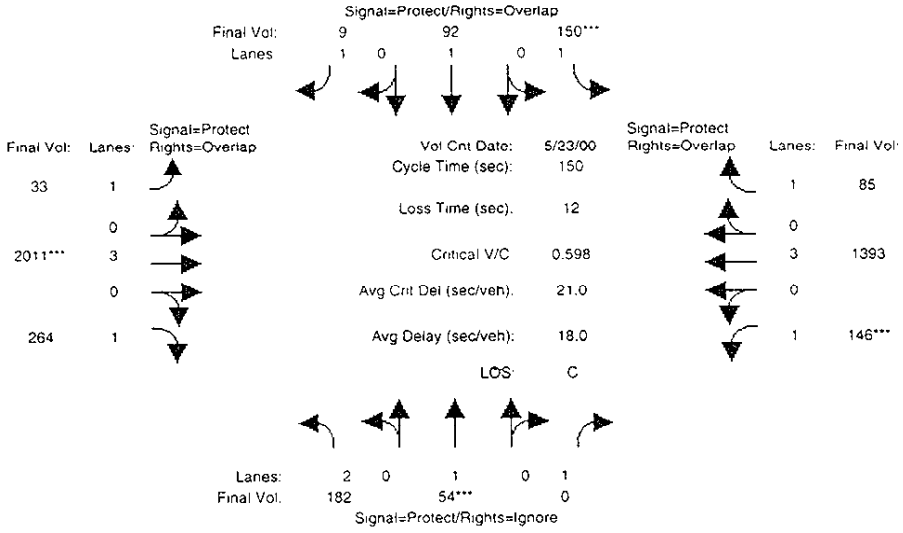
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #5712: VISTA PARK/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 23 May 2000 <<												
Base Vol:	182	54	67	150	92	9	33	2011	264	146	1393	85
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	182	54	0	150	92	9	33	2011	264	146	1393	85
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	182	54	0	150	92	9	33	2011	264	146	1393	85
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	182	54	0	150	92	9	33	2011	264	146	1393	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	182	54	0	150	92	9	33	2011	264	146	1393	85
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	182	54	0	150	92	9	33	2011	264	146	1393	85
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3150	1900	1750	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.03	0.00	0.09	0.05	0.01	0.02	0.35	0.15	0.08	0.24	0.05
Crit Moves:		****		****				****		****		
Green/Cycle:	0.14	0.07	0.00	0.14	0.07	0.11	0.05	0.58	0.72	0.14	0.67	0.81
Volume/Cap:	0.41	0.43	0.00	0.61	0.73	0.05	0.40	0.61	0.21	0.61	0.37	0.06
Delay/Veh:	45.1	52.5	0.0	49.2	64.5	45.0	54.6	16.0	5.4	49.6	8.4	2.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.1	52.5	0.0	49.2	64.5	45.0	54.6	16.0	5.4	49.6	8.4	2.2
DesignQueue:	13	4	0	11	7	1	3	78	6	11	41	1

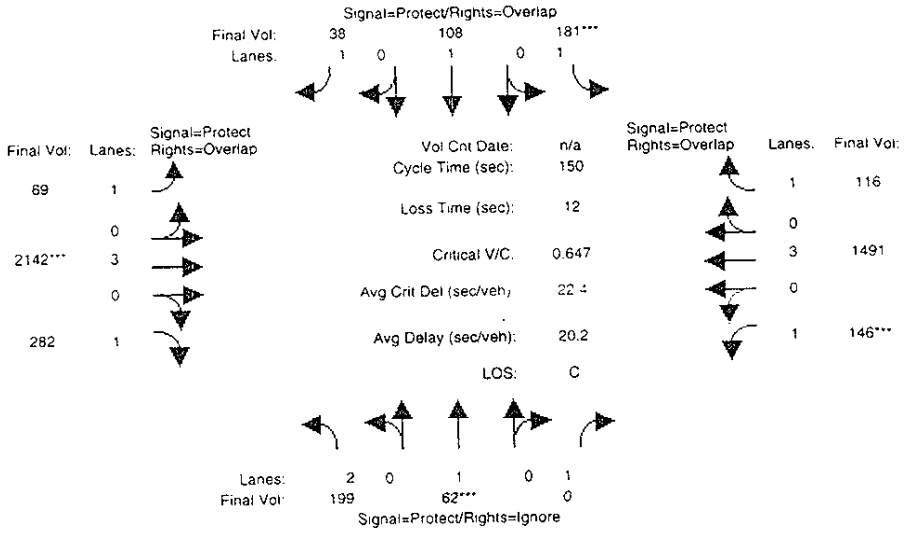
99-088

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5712: VISTA PARK/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	199	62	67	181	108	38	69	2142	282	146	1491	116
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	62	0	181	108	38	69	2142	282	146	1491	116
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	62	0	181	108	38	69	2142	282	146	1491	116
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	62	0	181	108	38	69	2142	282	146	1491	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	62	0	181	108	38	69	2142	282	146	1491	116
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	199	62	0	181	108	38	69	2142	282	146	1491	116
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3150	1900	1750	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.03	0.00	0.10	0.06	0.02	0.04	0.38	0.16	0.08	0.26	0.07
Crit Moves:		****		****				****		****		
Green Time:	23.5	10.0	0.0	23.5	10.0	17.0	7.0	85.5	109.0	19.0	97.5	121.0
Volume/Cap:	0.40	0.49	0.00	0.66	0.85	0.19	0.84	0.66	0.22	0.66	0.40	0.08
Delay/Veh:	43.6	53.7	0.0	49.1	79.4	45.9	88.5	17.2	5.1	52.3	9.5	2.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.6	53.7	0.0	49.1	79.4	45.9	88.5	17.2	5.1	52.3	9.5	2.3
DesignQueue:	14	5	0	13	9	3	6	85	7	11	47	2

99-083

Copyright (c) 1996 Dowling Associates, Inc.
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5712: VISTA PARK/CAPITOL

Signal=Protect/Rights=Overlap

Final Vol:	38		108		195***
Lanes:	1	0	1	0	1

Final Vol.	Lanes:	Signal=Protect Rights=Overlap
69	1	
	0	
2156***	3	
	0	
292	1	

Vol Crit Date:	n/a
Cycle Time (sec):	150
Loss Time (sec):	12
Critical V/C:	0.658
Avg Crit Del (sec/veh):	23.1
Avg Delay (sec/veh):	20.5
LOS:	C

Signal=Protect Rights=Overlap	Lanes:	Final Vol:
	1	165
	0	
	3	1495
	0	
	1	146***

Lanes:	2	0	1	0	1
Final Vol:	199		62***		0

Signal=Protect/Rights=Ignore

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	199	62	67	181	108	38	69	2142	282	146	1491	116
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	62	0	181	108	38	69	2142	282	146	1491	116
Added Vol:	0	0	0	14	0	0	0	14	0	0	4	49
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	62	0	195	108	38	69	2156	282	146	1495	165
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	62	0	195	108	38	69	2156	282	146	1495	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	62	0	195	108	38	69	2156	282	146	1495	165
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	199	62	0	195	108	38	69	2156	282	146	1495	165
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3150	1900	1750	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.03	0.00	0.11	0.06	0.02	0.04	0.38	0.16	0.08	0.26	0.09
Crit Moves:		****		****				****		****		
Green Time:	24.9	10.0	0.0	24.9	10.0	17.0	7.0	84.5	109.4	18.6	96.1	121.0
Volume/Cap:	0.38	0.49	0.00	0.67	0.85	0.19	0.84	0.67	0.22	0.67	0.41	0.12
Delay/Veh:	42.6	53.7	0.0	48.7	79.4	45.9	88.5	17.9	5.0	53.0	10.0	2.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.6	53.7	0.0	48.7	79.4	45.9	88.5	17.9	5.0	53.0	10.0	2.4
DesignQueue:	14	5	0	14	9	3	6	87	7	11	48	3

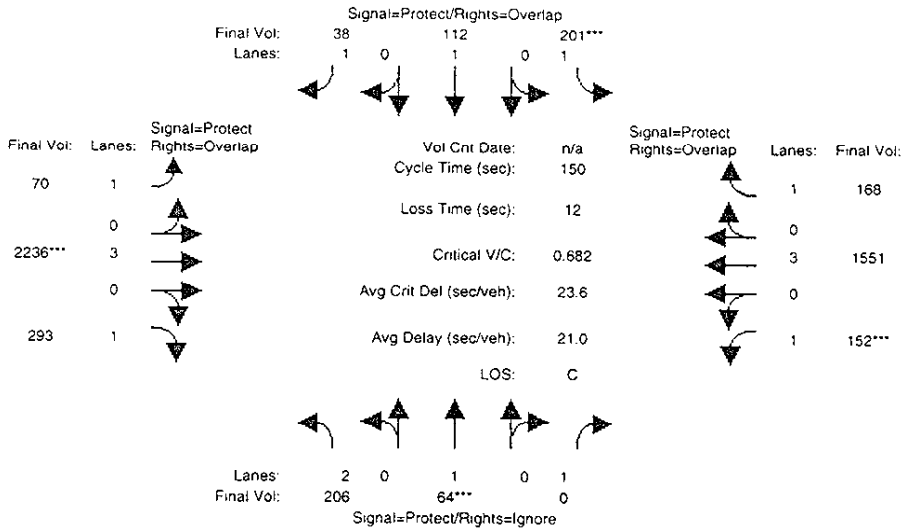
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans, San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5712: VISTA PARK/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	206	64	70	201	112	38	70	2236	293	152	1551	168
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	206	64	0	201	112	38	70	2236	293	152	1551	168
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	206	64	0	201	112	38	70	2236	293	152	1551	168
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	206	64	0	201	112	38	70	2236	293	152	1551	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	206	64	0	201	112	38	70	2236	293	152	1551	168
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	206	64	0	201	112	38	70	2236	293	152	1551	168
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3150	1900	1750	1750	1900	1750	1750	5700	1750	1750	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.07	0.03	0.00	0.11	0.06	0.02	0.04	0.39	0.17	0.09	0.27	0.10
Crit Moves:		****		****				****		****		
Green Time:	24.8	10.0	0.0	24.8	10.0	17.0	7.0	84.5	109.3	18.7	96.2	121.0
Volume/Cap:	0.40	0.51	0.00	0.70	0.88	0.19	0.86	0.70	0.23	0.70	0.42	0.12
Delay/Veh:	42.8	54.1	0.0	49.8	84.9	45.9	91.0	18.3	5.1	54.1	10.1	2.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.8	54.1	0.0	49.8	84.9	45.9	91.0	18.3	5.1	54.1	10.1	2.4
DesignQueue:	15	5	0	14	9	3	6	91	7	11	50	3

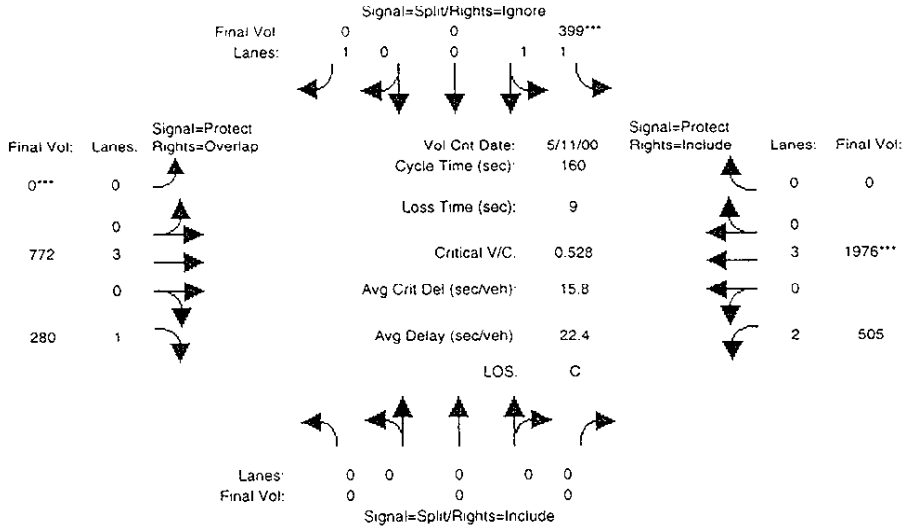
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #5713: 87/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Volume Module: >> Count Date: 11 May 2000 << 0.483												
Base Vol:	0	0	0	399	0	498	0	772	280	505	1976	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	399	0	0	0	772	280	505	1976	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	399	0	0	0	772	280	505	1976	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	399	0	0	0	772	280	505	1976	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	399	0	0	0	772	280	505	1976	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	399	0	0	0	772	280	505	1976	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.73	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	2631	0	1750	0	5700	1750	3150	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.14	0.16	0.16	0.35	0.00
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.33	0.33	0.33	0.66	0.00
Volume/Cap:	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.41	0.49	0.49	0.53	0.00
Delay/Veh:	0.0	0.0	0.0	37.0	0.0	0.0	0.0	31.9	33.2	32.9	11.1	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.48	1.48	1.48	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	0.0	0.0	0.0	54.7	0.0	0.0	0.0	31.9	33.2	32.9	8.0	0.0
DesignQueue:	0	0	0	26	0	0	0	48	17	31	66	0

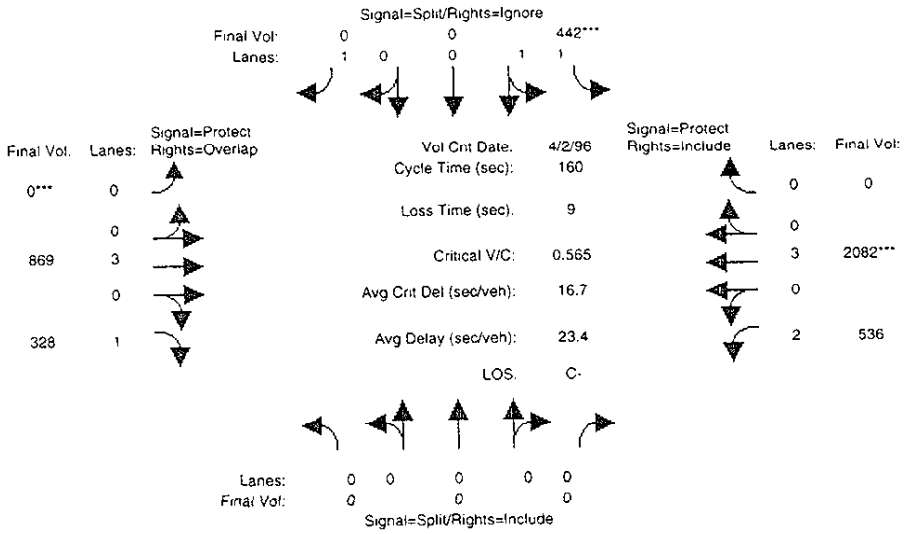
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans Soft USA

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5713: 87/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Volume Module: >> Count Date: 2 Apr 1996 << 0.483												
Base Vol:	0	0	0	442	0	539	0	869	328	536	2082	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	442	0	0	0	869	328	536	2082	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	442	0	0	0	869	328	536	2082	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	442	0	0	0	869	328	536	2082	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	442	0	0	0	869	328	536	2082	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	442	0	0	0	869	328	536	2082	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.73	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	2631	0	1750	0	5700	1750	3150	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.15	0.19	0.17	0.37	0.00
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	47.6	0.0	0.0	0.0	54.2	54.2	49.2	103	0.0
Volume/Cap:	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.45	0.55	0.55	0.57	0.00
Delay/Veh:	0.0	0.0	0.0	36.8	0.0	0.0	0.0	31.5	33.6	35.7	12.1	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.48	1.48	1.48	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	0.0	0.0	0.0	54.5	0.0	0.0	0.0	31.5	33.6	35.7	8.7	0.0
DesignQueue:	0	0	0	28	0	0	0	53	20	34	72	0

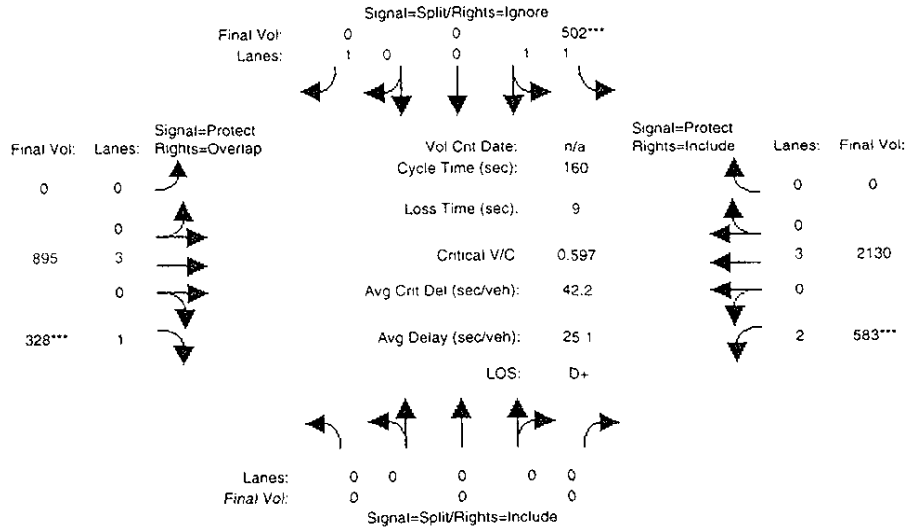
99-083

Copyright (c) 1996 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5713: 87/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Volume Module:												
Base Vol:	0	0	0	442	0	539	0	869	328	536	2082	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	442	0	0	0	869	328	536	2082	0
Added Vol:	0	0	0	60	0	0	0	26	0	47	48	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	502	0	0	0	895	328	583	2130	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	502	0	0	0	895	328	583	2130	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	502	0	0	0	895	328	583	2130	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	502	0	0	0	895	328	583	2130	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.73	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	2631	0	1750	0	5700	1750	3150	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.16	0.19	0.19	0.37	0.00
Crit Moves:				****					****	****		
Green Time:	0.0	0.0	0.0	51.2	0.0	0.0	0.0	50.2	50.2	49.6	99.8	0.0
Volume/Cap:	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.50	0.60	0.60	0.60	0.00
Delay/Veh:	0.0	0.0	0.0	35.6	0.0	0.0	0.0	34.1	36.5	36.3	13.9	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.48	1.48	1.48	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	0.0	0.0	0.0	52.7	0.0	0.0	0.0	34.1	36.5	36.3	10.0	0.0
DesignQueue:	0	0	0	31	0	0	0	57	21	37	79	0

99-083 9-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations Method (Future Volume Alternative)

Intersection #5713 87/CAPITOL

Cycle (sec): 160 Critical Vol./Cap. (X): 0.597
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 25.3
Optimal Cycle: 43 Level Of Service: D+

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ignore			Ovl			Include		
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Lanes:	0 0	0 0	0	1 1	0 0	1	0 0	3 1	0	2 0	3 0	0
Volume Module:												
Base Vol:	0	0	0	442	0	539	0	869	328	536	2082	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	442	0	0	0	869	328	536	2082	0
Added Vol:	0	0	0	60	0	0	0	26	0	47	48	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	502	0	0	0	895	328	583	2130	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	502	0	0	0	895	328	583	2130	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	502	0	0	0	895	328	583	2130	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	502	0	0	0	895	328	583	2130	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.73	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	2631	0	1750	0	5700	1750	3150	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.16	0.19	0.19	0.37	0.00
Crit Moves:				****					****	****		
Green Time:	0.0	0.0	0.0	51.2	0.0	0.0	0.0	50.2	50.2	49.6	99.8	0.0
Volume/Cap:	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.50	0.60	0.60	0.60	0.00
Delay/Veh:	0.0	0.0	0.0	35.6	0.0	0.0	0.0	34.1	35.6	36.3	13.9	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.48	1.48	1.48	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	0.0	0.0	0.0	52.7	0.0	0.0	0.0	34.1	35.6	36.3	10.0	0.0
DesignQueue:	0	0	0	31	0	0	0	57	21	37	79	0

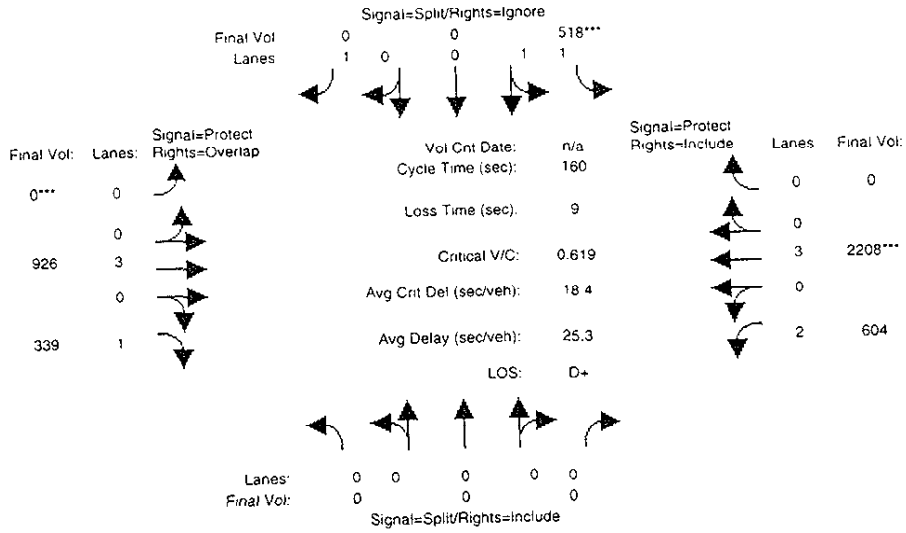
Traffix 7.1.0607 (c) 1999 Dowling Assoc. Licensed to Hexagon Trans. San Jose

99-083

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5713: 87/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Volume Module:												
Base Vol:	0	0	0	518	0	559	0	926	339	604	2208	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	518	0	0	0	926	339	604	2208	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	518	0	0	0	926	339	604	2208	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	518	0	0	0	926	339	604	2208	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	518	0	0	0	926	339	604	2208	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	518	0	0	0	926	339	604	2208	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.73	1.06	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	2631	0	1750	0	5700	1750	3150	5700	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.16	0.19	0.19	0.39	0.00
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	50.9	0.0	0.0	0.0	50.3	50.3	49.8	100	0.0
Volume/Cap:	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.52	0.62	0.62	0.62	0.00
Delay/Veh:	0.0	0.0	0.0	36.2	0.0	0.0	0.0	34.3	36.9	36.5	14.1	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.45	1.48	1.48	1.00	1.00	1.00	1.00	0.73	0.72
AdjDel/Veh:	0.0	0.0	0.0	52.6	0.0	0.0	0.0	34.3	36.9	36.5	10.3	0.0
DesignQueue:	0	0	0	33	0	0	0	59	22	39	82	0

99-083

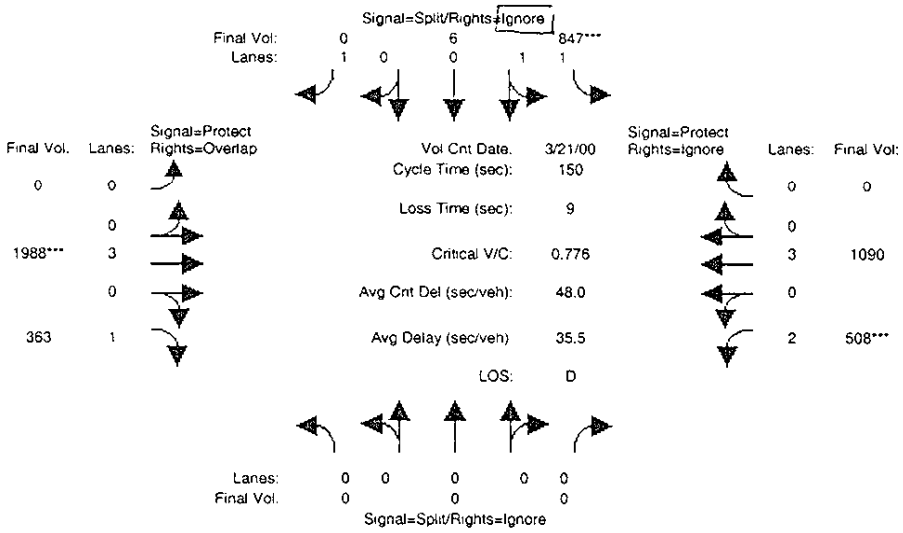
Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #5713: 87/CAPITOL

CALIBRATION ADJUSTMENTS ARE SHOWN IN BOXES ☐.



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	14	14	14	0	85	14	14	100	0
Volume Module: >> Count Date: 21 Mar 2000 << 0.621												
Base Vol:	0	0	0	847	6	418	0	1988	363	508	1090	0
Growth Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Initial Bse:	0	0	0	847	6	0	0	1988	363	508	1090	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	847	6	0	0	1988	363	508	1090	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	847	6	0	0	1988	363	508	1090	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	847	6	0	0	1988	363	508	1090	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	0	0	0	847	6	0	0	1988	363	508	1090	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.73	1.00	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	0.00	0.00	1.97	0.03	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	3400	48	1750	0	6000	1900	3400	6000	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.25	0.13	0.00	0.00	0.33	0.19	0.15	0.18	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.57	0.57	0.14	0.71	0.00
Volume/Cap:	0.00	0.00	0.00	1.07	0.54	0.00	0.00	0.58	0.34	1.07	0.26	0.00
Delay/Veh:	0.0	0.0	0.0	89.7	38.6	0.0	0.0	16.2	13.3	102.5	6.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	0.0	0.0	0.0	89.7	38.6	0.0	0.0	16.2	13.3	102.5	4.3	0.0
DesignQueue:	0	0	0	58	0	0	0	79	14	38	28	0

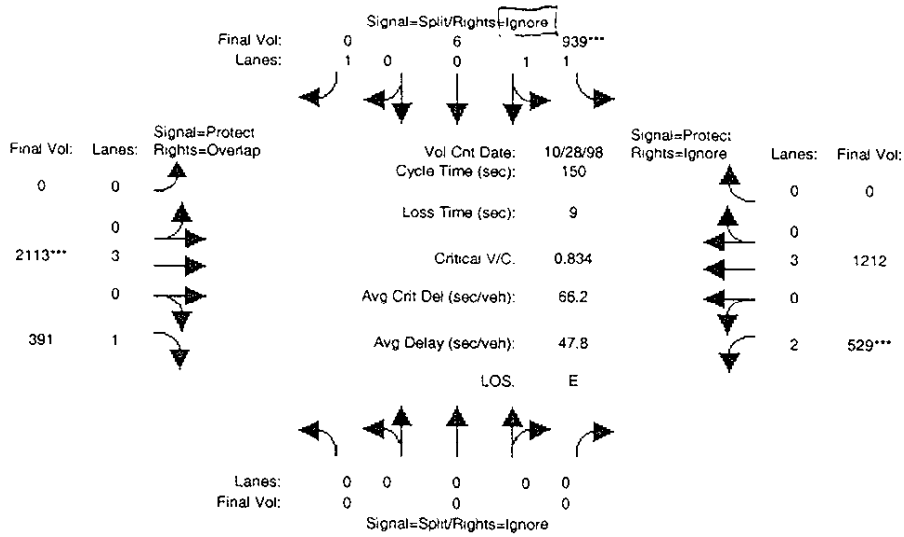
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5713: 87/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	14	14	14	0	85	14	14	100	0
Volume Module: >> Count Date: 28 Oct 1998 << 0.621												
Base Vol:	0	0	0	939	6	531	0	2113	391	529	1212	0
Growth Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Initial Bse:	0	0	0	939	6	0	0	2113	391	529	1212	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	939	6	0	0	2113	391	529	1212	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	939	6	0	0	2113	391	529	1212	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	939	6	0	0	2113	391	529	1212	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	0	0	0	939	6	0	0	2113	391	529	1212	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.73	1.00	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	0.00	0.00	1.98	0.02	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	3400	43	1750	0	6000	1900	3400	6000	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.28	0.14	0.00	0.00	0.35	0.21	0.16	0.20	0.00
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	35.8	35.8	0.0	0.0	85.0	85.0	20.2	105	0.0
Volume/Cap:	0.00	0.00	0.00	1.16	0.59	0.00	0.00	0.62	0.36	1.16	0.29	0.00
Delay/Veh:	0.0	0.0	0.0	132.1	38.8	0.0	0.0	16.8	13.6	145.7	6.4	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	0.0	0.0	0.0	132.1	38.8	0.0	0.0	16.8	13.6	145.7	4.6	0.0
DesignQueue:	0	0	0	64	0	0	0	85	15	40	32	0

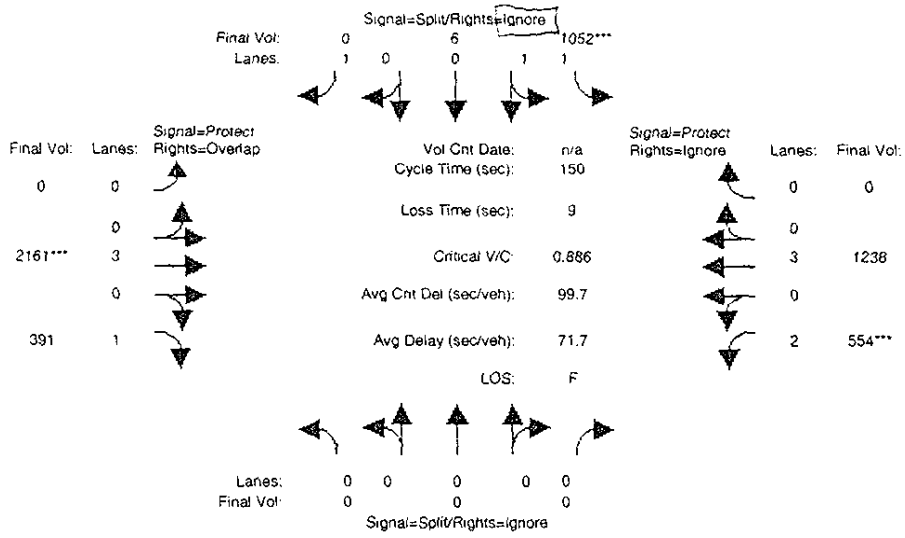
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5713: 87/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	14	14	14	0	85	14	14	100	0
Volume Module:												
Base Vol:	0	0	0	939	6	531	0	2113	391	529	1212	0
Growth Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Initial Bse:	0	0	0	939	6	0	0	2113	391	529	1212	0
Added Vol:	0	0	0	113	0	0	0	48	0	25	26	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1052	6	0	0	2161	391	554	1238	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	1052	6	0	0	2161	391	554	1238	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1052	6	0	0	2161	391	554	1238	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	0	0	0	1052	6	0	0	2161	391	554	1238	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.73	1.00	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	0.00	0.00	1.98	0.02	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	3400	38	1750	0	6000	1900	3400	6000	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.31	0.16	0.00	0.00	0.36	0.21	0.16	0.21	0.00
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	36.7	36.7	0.0	0.0	85.0	85.0	19.3	104	0.0
Volume/Cap:	0.00	0.00	0.00	1.27	0.64	0.00	0.00	0.64	0.36	1.27	0.30	0.00
Delay/Veh:	0.0	0.0	0.0	205.7	39.2	0.0	0.0	17.0	13.6	219.7	6.7	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	0.0	0.0	0.0	205.7	39.2	0.0	0.0	17.0	13.6	219.7	4.8	0.0
DesignQueue:	0	0	0	72	0	0	0	87	15	42	33	0

99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations Method (Future Volume Alternative)

Intersection #5713 87/CAPITOL

Cycle (sec): 150 Critical Vol./Cap. (X): 0.886
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 46.1
Optimal Cycle: 115 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ignore			Ignore			Ovl			Ignore		
Min. Green:	0	0	0	14	14	14	0	78	14	14	92	0
Lanes:	0 0	0 0	0	1 1	0 0	1	0 0	3 1	0	2 0	3 0	0
Volume Module:												
Base Vol:	0	0	0	939	6	531	0	2113	391	529	1212	0
Growth Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Initial Bse:	0	0	0	939	6	0	0	2113	391	529	1212	0
Added Vol:	0	0	0	113	0	0	0	48	0	25	26	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1052	6	0	0	2161	391	554	1238	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	1052	6	0	0	2161	391	554	1238	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1052	6	0	0	2161	391	554	1238	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	0	0	0	1052	6	0	0	2161	391	554	1238	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.73	1.00	0.97	0.97	1.05	1.00	0.88	1.06	0.97
Lanes:	0.00	0.00	0.00	1.98	0.02	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	3400	38	1750	0	6000	1900	3400	6000	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.31	0.16	0.00	0.00	0.36	0.21	0.16	0.21	0.00
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	41.3	41.3	0.0	0.0	78.0	78.0	21.7	99.7	0.0
Volume/Cap:	0.00	0.00	0.00	1.12	0.57	0.00	0.00	0.69	0.40	1.12	0.31	0.00
Delay/Veh:	0.0	0.0	0.0	111.4	35.8	0.0	0.0	20.9	16.6	127.0	8.1	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	0.0	0.0	0.0	111.4	35.8	0.0	0.0	20.9	16.6	127.0	5.8	0.0
DesignQueue:	0	0	0	69	0	0	0	96	17	41	37	0

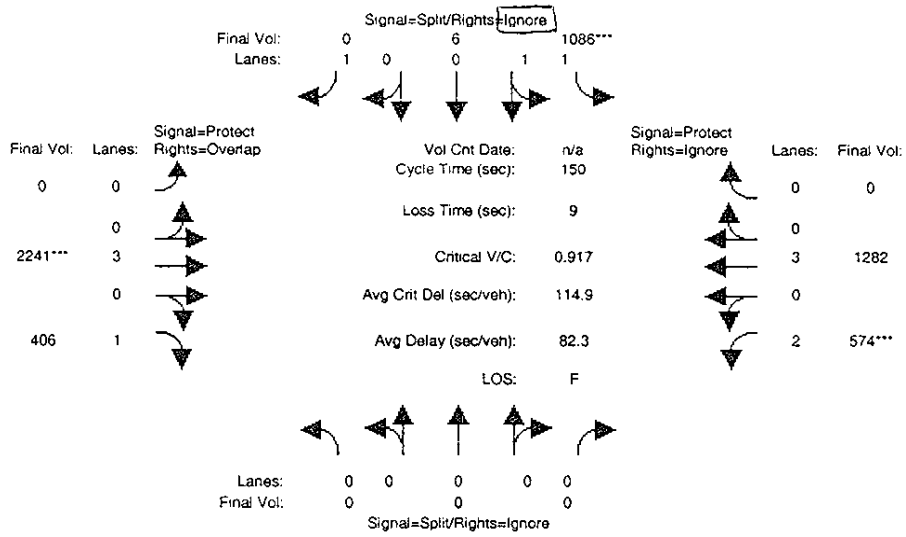
Traffix 7.1.0607 (c) 1999 Dowling Assoc. Licensed to Hexagon Trans. San Jose

99-083

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5713: 87/CAPITOL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	14	14	14	0	85	14	14	100	0
Volume Module:												
Base Vol:	0	0	0	1086	6	548	0	2241	406	574	1282	0
Growth Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Initial Bse:	0	0	0	1086	6	0	0	2241	406	574	1282	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1086	6	0	0	2241	406	574	1282	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	1086	6	0	0	2241	406	574	1282	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1086	6	0	0	2241	406	574	1282	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	0	0	0	1086	6	0	0	2241	406	574	1282	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.73	1.00	0.97	0.97	1.06	0.97	0.88	1.06	0.97
Lanes:	0.00	0.00	0.00	1.98	0.02	1.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	3400	37	1750	0	6000	1900	3400	6000	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.32	0.16	0.00	0.00	0.37	0.21	0.17	0.21	0.00
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	36.6	36.6	0.0	0.0	85.0	85.0	19.4	104	0.0
Volume/Cap:	0.00	0.00	0.00	1.31	0.66	0.00	0.00	0.66	0.38	1.31	0.31	0.00
Delay/Veh:	0.0	0.0	0.0	241.3	39.5	0.0	0.0	17.4	13.7	254.7	6.7	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	0.0	0.0	0.0	241.3	39.5	0.0	0.0	17.4	13.7	254.7	4.8	0.0
DesignQueue:	0	0	0	74	0	0	0	90	16	43	35	0

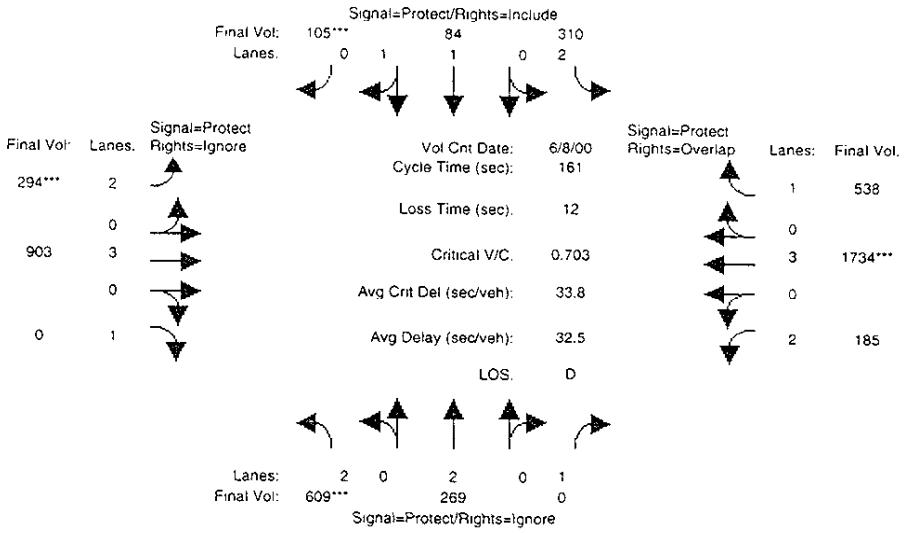
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (AM)

Intersection #5715: CAPITOL/SNELL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 8 Jun 2000 <<												
Base Vol:	609	269	709	310	84	105	294	903	191	185	1734	538
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	609	269	0	310	84	105	294	903	0	185	1734	538
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	609	269	0	310	84	105	294	903	0	185	1734	538
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	609	269	0	310	84	105	294	903	0	185	1734	538
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	609	269	0	310	84	105	294	903	0	185	1734	538
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	609	269	0	310	84	105	294	903	0	185	1734	538
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.19	0.07	0.00	0.10	0.04	0.06	0.09	0.16	0.00	0.06	0.30	0.31
Crit Moves:	****					****	****				****	
Green/Cycle:	0.27	0.15	0.00	0.21	0.09	0.09	0.13	0.41	0.00	0.15	0.43	0.64
Volume/Cap:	0.70	0.47	0.00	0.47	0.52	0.70	0.70	0.38	0.00	0.38	0.70	0.48
Delay/Veh:	41.7	48.0	0.0	42.8	54.6	59.9	54.4	25.2	0.0	46.9	29.0	11.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.48	1.48	1.00	1.48	1.34	1.00	1.00	1.00	1.00	0.77	0.72
AdjDel/Veh:	41.7	71.0	0.0	42.8	80.8	80.0	54.4	25.2	0.0	46.9	22.3	8.3
DesignQueue:	41	21	0	22	7	9	23	50	0	14	96	19

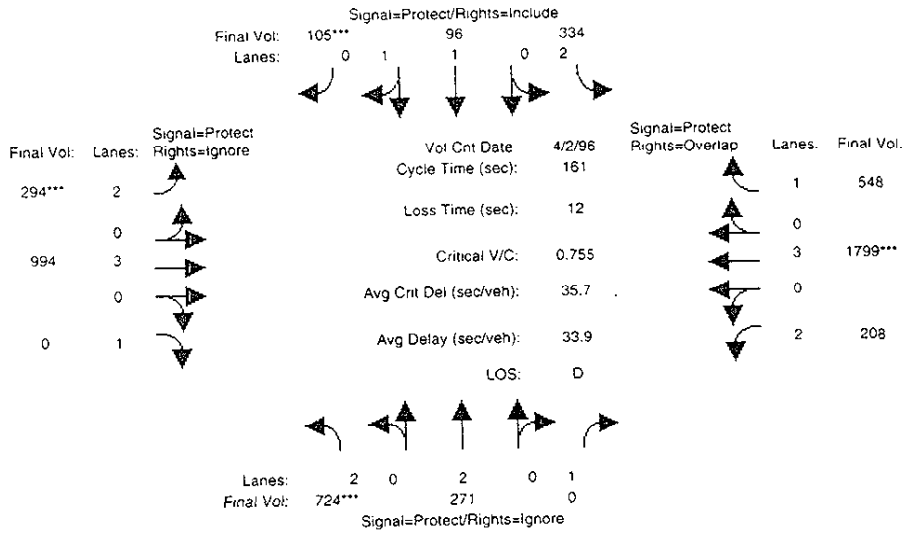
99 - 083

Copyright © 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5715: CAPITOL/SNELL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module: >> Count Date: 2 Apr 1996 <<												
Base Vol:	724	271	751	334	96	105	294	994	274	208	1799	548
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	724	271	0	334	96	105	294	994	0	208	1799	548
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	724	271	0	334	96	105	294	994	0	208	1799	548
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	724	271	0	334	96	105	294	994	0	208	1799	548
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	724	271	0	334	96	105	294	994	0	208	1799	548
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	724	271	0	334	96	105	294	994	0	208	1799	548
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.23	0.07	0.00	0.11	0.05	0.06	0.09	0.17	0.00	0.07	0.32	0.31
Crit Moves:	****					****	****				****	
Green Time:	49.0	24.9	0.0	36.9	12.8	12.8	19.9	63.2	0.0	23.9	67.3	104.2
Volume/Cap:	0.76	0.46	0.00	0.46	0.64	0.76	0.76	0.44	0.00	0.44	0.76	0.48
Delay/Veh:	40.9	47.5	0.0	41.0	57.5	63.0	57.4	27.4	0.0	47.9	31.3	11.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.48	1.48	1.00	1.43	1.26	1.00	1.00	1.00	1.00	0.80	0.72
AdjDel/Veh:	40.9	70.4	0.0	41.0	82.3	79.6	57.4	27.4	0.0	47.9	24.9	8.2
DesignQueue:	47	21	0	24	8	9	24	57	0	16	102	19

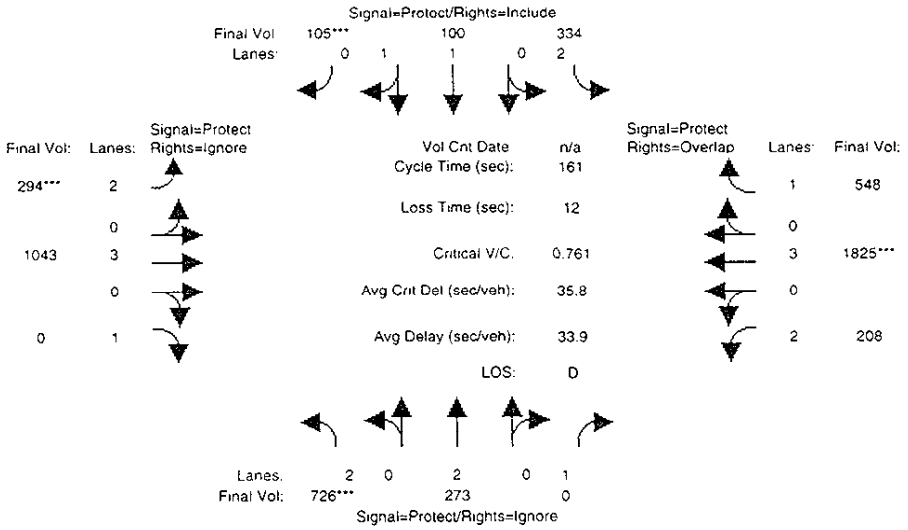
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5715: CAPITOL/SNELL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	724	271	751	334	96	105	294	994	274	208	1799	548
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	724	271	0	334	96	105	294	994	0	208	1799	548
Added Vol:	2	2	0	0	4	0	0	49	4	0	26	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	726	273	0	334	100	105	294	1043	0	208	1825	548
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	726	273	0	334	100	105	294	1043	0	208	1825	548
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	726	273	0	334	100	105	294	1043	0	208	1825	548
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	726	273	0	334	100	105	294	1043	0	208	1825	548
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.23	0.07	0.00	0.11	0.05	0.06	0.09	0.18	0.00	0.07	0.32	0.31
Crit Moves:	****					****	****				****	
Green Time:	48.8	24.8	0.0	36.6	12.7	12.7	19.8	64.3	0.0	23.2	67.8	104.4
Volume/Cap:	0.76	0.47	0.00	0.47	0.67	0.76	0.76	0.46	0.00	0.46	0.76	0.48
Delay/Veh:	41.2	47.6	0.0	41.2	58.5	63.3	57.8	27.1	0.0	48.5	31.2	11.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.48	1.48	1.00	1.39	1.26	1.00	1.00	1.00	1.00	0.80	0.72
AdjDel/Veh:	41.2	70.4	0.0	41.2	81.1	79.5	57.8	27.1	0.0	48.5	25.0	8.1
DesignQueue:	48	21	0	24	8	9	24	59	0	16	103	19

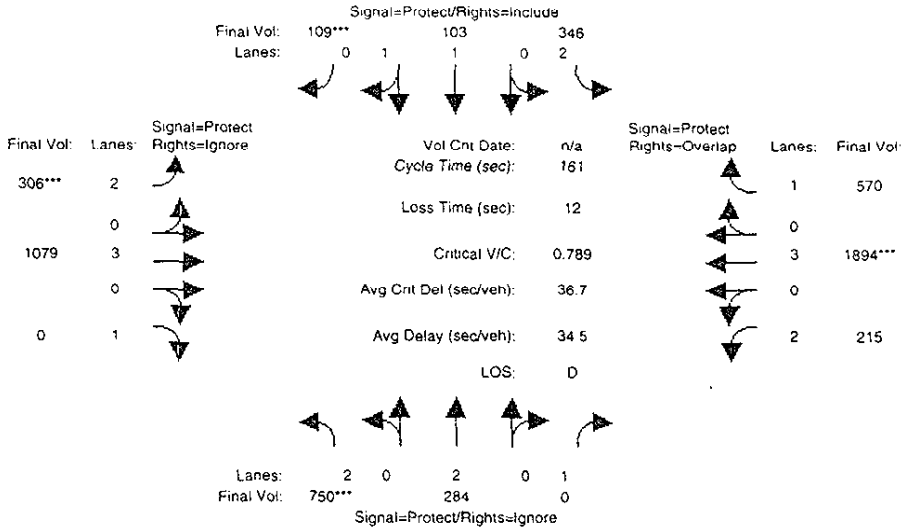
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5715: CAPITOL/SNELL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	750	284	779	346	103	109	306	1079	286	215	1894	570
Growth Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Initial Bse:	750	284	0	346	103	109	306	1079	0	215	1894	570
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	750	284	0	346	103	109	306	1079	0	215	1894	570
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	750	284	0	346	103	109	306	1079	0	215	1894	570
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	750	284	0	346	103	109	306	1079	0	215	1894	570
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	750	284	0	346	103	109	306	1079	0	215	1894	570
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.24	0.07	0.00	0.11	0.05	0.06	0.10	0.19	0.00	0.07	0.33	0.33
Crit Moves:	****					****	****				****	
Green Time:	48.6	24.8	0.0	36.5	12.7	12.7	19.8	64.4	0.0	23.2	67.8	104.3
Volume/Cap:	0.79	0.48	0.00	0.48	0.69	0.79	0.79	0.47	0.00	0.47	0.79	0.50
Delay/Veh:	42.3	47.8	0.0	41.5	59.1	65.2	59.2	27.3	0.0	48.7	32.0	11.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.48	1.48	1.00	1.36	1.22	1.00	1.00	1.00	1.00	0.81	0.72
AdjDel/Veh:	42.3	70.8	0.0	41.5	80.4	79.2	59.2	27.3	0.0	48.7	26.0	8.3
DesignQueue:	49	22	0	25	9	9	25	61	0	17	107	19

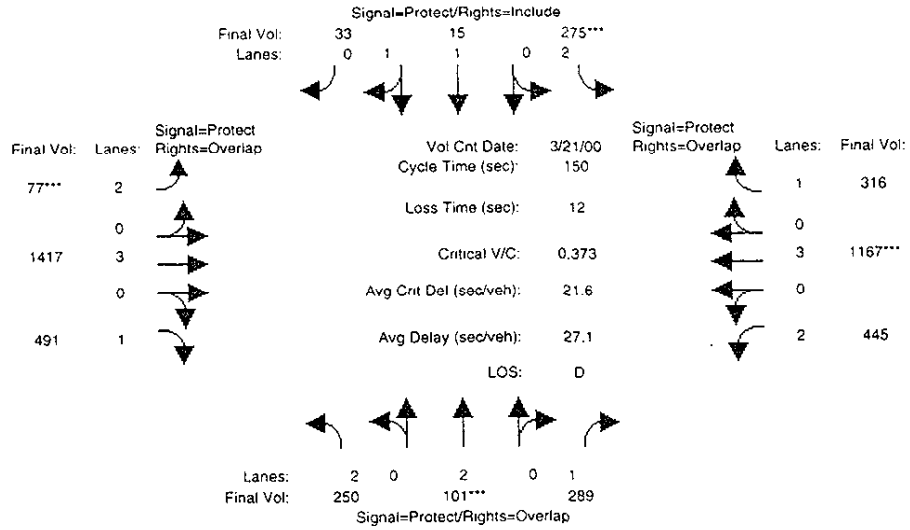
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Existing (PM)

Intersection #5715: CAPITOL/SNELL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	55	10	14	65	10
Volume Module: >> Count Date: 21 Mar 2000 <<												
Base Vol:	250	101	289	275	15	33	77	1417	491	445	1167	316
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	250	101	289	275	15	33	77	1417	491	445	1167	316
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	250	101	289	275	15	33	77	1417	491	445	1167	316
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	250	101	289	275	15	33	77	1417	491	445	1167	316
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	250	101	289	275	15	33	77	1417	491	445	1167	316
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	250	101	289	275	15	33	77	1417	491	445	1167	316
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.03	0.17	0.09	0.01	0.02	0.02	0.25	0.28	0.14	0.20	0.18
Crit Moves:		****		****			****				****	
Green/Cycle:	0.17	0.07	0.33	0.23	0.12	0.12	0.09	0.37	0.54	0.26	0.53	0.76
Volume/Cap:	0.46	0.39	0.51	0.39	0.06	0.15	0.26	0.68	0.52	0.55	0.39	0.24
Delay/Veh:	42.9	51.2	31.6	37.5	44.2	44.7	48.1	31.1	17.3	37.2	15.8	4.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.48	1.48	1.00	1.48	1.48	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	42.9	75.8	46.7	37.5	65.4	66.1	48.1	31.1	17.3	37.2	11.4	3.0
DesignQueue:	18	8	17	18	1	2	6	80	20	28	48	7

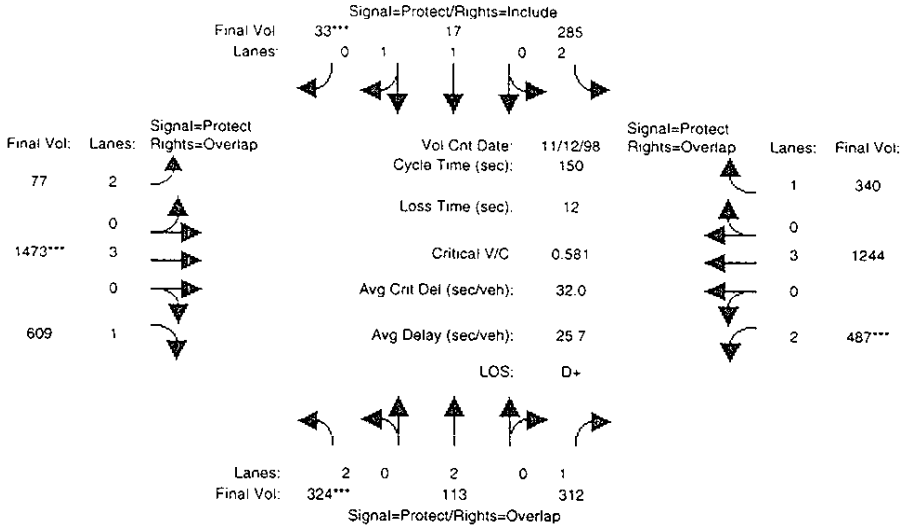
-089

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5715: CAPITOL/SNELL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	10	10	14	10	10	14	55	10	14	65	10
Volume Module: >> Count Date: 12 Nov 1998 <<												
Base Vol:	324	113	312	285	17	33	77	1473	609	487	1244	340
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	324	113	312	285	17	33	77	1473	609	487	1244	340
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	324	113	312	285	17	33	77	1473	609	487	1244	340
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	324	113	312	285	17	33	77	1473	609	487	1244	340
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	324	113	312	285	17	33	77	1473	609	487	1244	340
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	324	113	312	285	17	33	77	1473	609	487	1244	340
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.03	0.18	0.09	0.01	0.02	0.02	0.26	0.35	0.15	0.22	0.19
Crit Moves:	****					****		****		****		
Green Time:	25.5	14.8	53.2	20.7	10.0	10.0	18.2	64.1	89.6	38.4	84.3	105.0
Volume/Cap:	0.60	0.30	0.50	0.65	0.13	0.28	0.20	0.60	0.58	0.60	0.39	0.28
Delay/Veh:	45.2	47.9	29.5	49.0	50.1	50.9	45.2	25.5	14.8	38.3	14.0	6.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.48	1.48	1.00	1.48	1.48	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	45.2	70.8	43.6	49.0	74.2	75.3	45.2	25.5	14.8	38.3	10.1	4.6
DesignQueue:	23	9	18	21	1	3	6	75	22	31	48	9

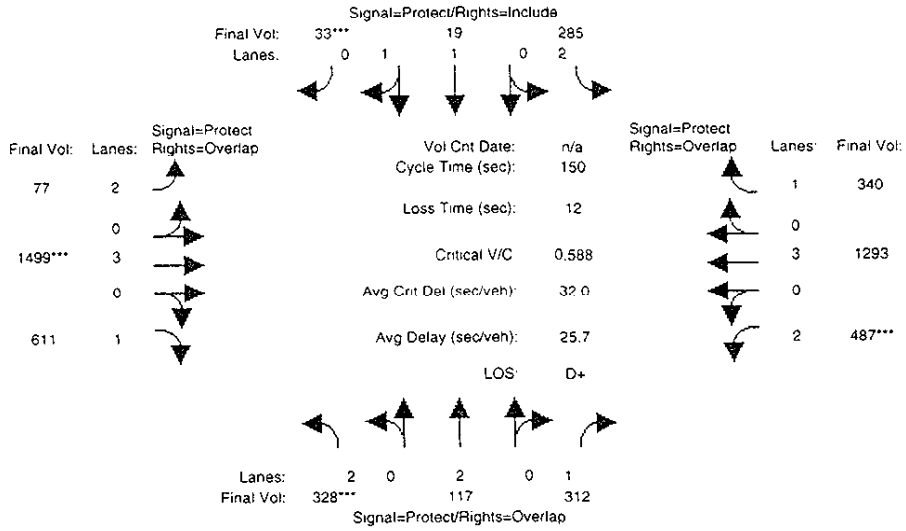
99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5715: CAPITOL/SNELL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	55	10	14	65	10
Volume Module:												
Base Vol:	324	113	312	285	17	33	77	1473	609	487	1244	340
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	324	113	312	285	17	33	77	1473	609	487	1244	340
Added Vol:	4	4	0	0	2	0	0	26	2	0	49	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	328	117	312	285	19	33	77	1499	611	487	1293	340
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	328	117	312	285	19	33	77	1499	611	487	1293	340
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	328	117	312	285	19	33	77	1499	611	487	1293	340
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	328	117	312	285	19	33	77	1499	611	487	1293	340
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.03	0.18	0.09	0.01	0.02	0.02	0.26	0.35	0.15	0.23	0.19
Crit Moves:	****					****		****		****		
Green Time:	25.5	14.8	52.7	20.7	10.0	10.0	18.2	64.5	90.1	37.9	84.3	105.0
Volume/Cap:	0.61	0.31	0.51	0.65	0.15	0.28	0.20	0.61	0.58	0.61	0.40	0.28
Delay/Veh:	45.3	47.9	29.7	49.0	50.2	50.8	45.2	25.4	14.6	38.6	14.2	6.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.48	1.48	1.00	1.48	1.48	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	45.3	70.9	44.0	49.0	74.3	75.2	45.2	25.4	14.6	38.6	10.2	4.6
DesignQueue:	23	9	18	21	1	3	6	76	22	31	50	9

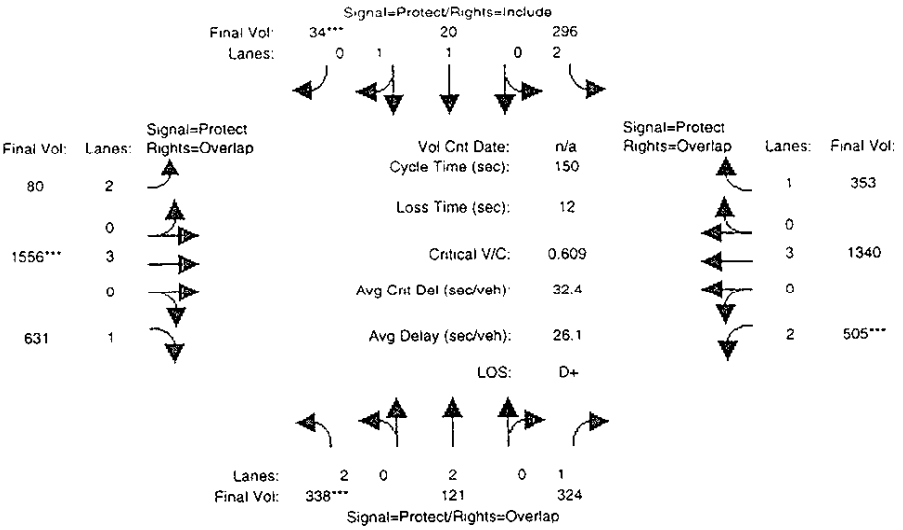
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5715: CAPITOL/SNELL



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	14	10	10	14	10	10	14	55	10	14	65	10
Volume Module:												
Base Vol:	338	121	324	296	20	34	80	1556	631	505	1340	353
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	338	121	324	296	20	34	80	1556	631	505	1340	353
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	338	121	324	296	20	34	80	1556	631	505	1340	353
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	338	121	324	296	20	34	80	1556	631	505	1340	353
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	338	121	324	296	20	34	80	1556	631	505	1340	353
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	338	121	324	296	20	34	80	1556	631	505	1340	353
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	2.00	1.00	2.00	1.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	3800	1750	3150	1900	1750	3150	5700	1750	3150	5700	1750
Capacity Analysis Module:												
Vol/Sat:	0.11	0.03	0.19	0.09	0.01	0.02	0.03	0.27	0.36	0.16	0.24	0.20
Crit Moves:	****					****		****		****		
Green Time:	25.4	10.0	48.0	25.4	10.0	10.0	18.2	64.6	90.0	38.0	84.4	109.8
Volume/Cap:	0.63	0.48	0.58	0.55	0.16	0.29	0.21	0.63	0.60	0.63	0.42	0.28
Delay/Veh:	45.8	52.4	33.5	44.4	50.2	50.9	45.2	25.8	14.9	39.1	14.3	5.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.48	1.48	1.00	1.48	1.48	1.00	1.00	1.00	1.00	0.72	0.72
AdjDel/Veh:	45.8	77.5	49.6	44.4	74.3	75.3	45.2	25.8	14.9	39.1	10.3	3.7
DesignQueue:	24	9	19	21	2	3	6	80	23	33	52	8

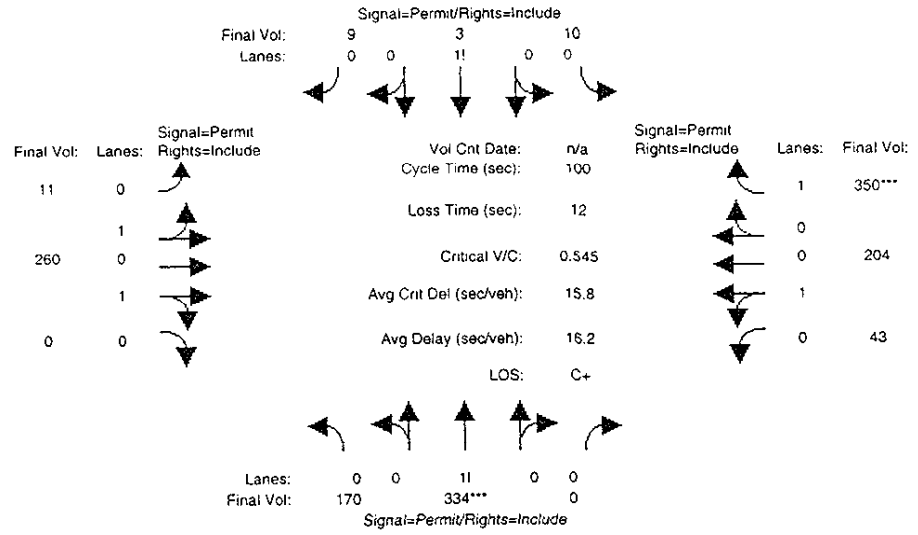
99-083

Copyright (c) 1998 Dowling Associates, Inc. Licensed to Hexagon Trans. San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (AM)

Intersection #5737: Old Almaden/Foxworthy



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	7	10	10	10	10	0	10	10	10
Volume Module:												
Base Vol:	170	334	0	10	3	9	11	260	0	43	204	350
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	170	334	0	10	3	9	11	260	0	43	204	350
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	170	334	0	10	3	9	11	260	0	43	204	350
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	170	334	0	10	3	9	11	260	0	43	204	350
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	334	0	10	3	9	11	260	0	43	204	350
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	170	334	0	10	3	9	11	260	0	43	204	350
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	0.97	0.97	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Lanes:	0.34	0.66	0.00	0.45	0.14	0.41	0.08	1.92	0.00	0.17	0.83	1.00
Final Sat.:	607	1193	0	795	239	716	146	3454	0	313	1487	1750
Capacity Analysis Module:												
Vol/Sat:	0.28	0.28	0.00	0.01	0.01	0.01	0.08	0.08	0.00	0.14	0.14	0.20
Crit Moves:		****										****
Green Time:	51.3	51.3	0.0	51.3	51.3	51.3	36.7	36.7	0.0	36.7	36.7	36.7
Volume/Cap:	0.55	0.55	0.00	0.02	0.02	0.02	0.21	0.21	0.00	0.37	0.37	0.55
Delay/Veh:	13.0	13.0	0.0	9.1	9.1	9.1	16.5	16.5	0.0	17.8	17.8	19.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.0	13.0	0.0	9.1	9.1	9.1	16.5	16.5	0.0	17.8	17.8	19.8
DesignQueue:	5	10	0	0	0	0	0	9	0	2	7	13

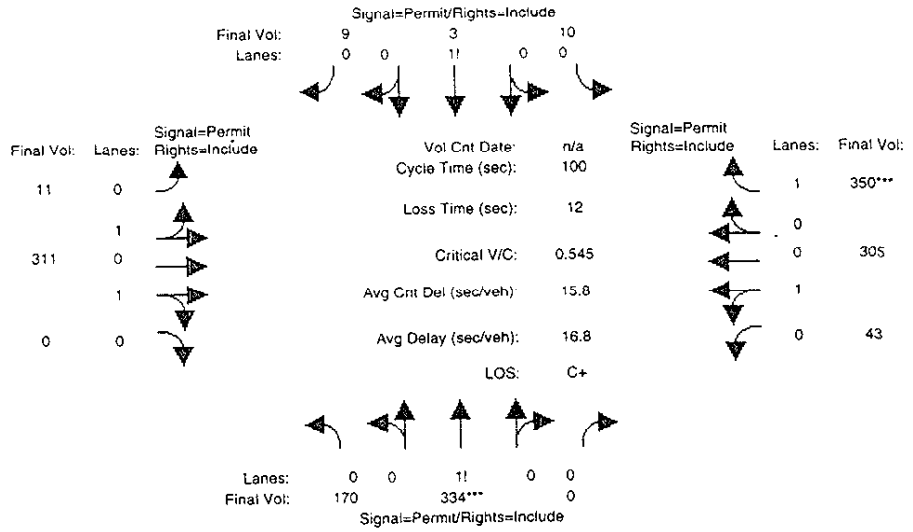
99-083

Copyright (c) 1998 Dowling Associates, Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (AM)

Intersection #5737: Old Almaden/Foxworthy



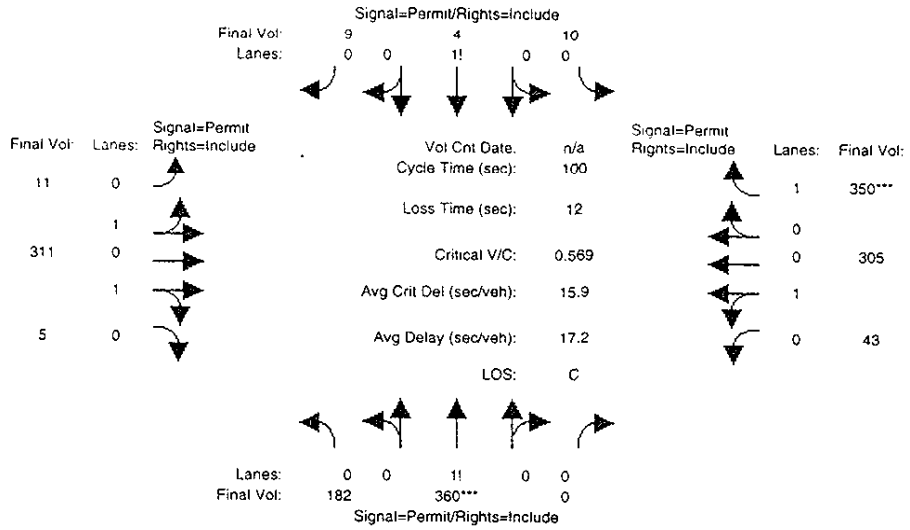
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	7	10	10	10	10	0	10	10	10
Volume Module:												
Base Vol:	170	334	0	10	3	9	11	260	0	43	204	350
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	170	334	0	10	3	9	11	260	0	43	204	350
Added Vol:	0	0	0	0	0	0	0	51	0	0	101	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	170	334	0	10	3	9	11	311	0	43	305	350
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	170	334	0	10	3	9	11	311	0	43	305	350
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	334	0	10	3	9	11	311	0	43	305	350
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	170	334	0	10	3	9	11	311	0	43	305	350
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	0.97	0.97	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Lanes:	0.34	0.66	0.00	0.45	0.14	0.41	0.07	1.93	0.00	0.12	0.88	1.00
Final Sat.:	607	1193	0	795	239	716	123	3477	0	222	1578	1750
Capacity Analysis Module:												
Vol/Sat:	0.28	0.28	0.00	0.01	0.01	0.01	0.09	0.09	0.00	0.19	0.19	0.20
Crit Moves:		****										****
Green Time:	51.3	51.3	0.0	51.3	51.3	51.3	36.7	36.7	0.0	36.7	36.7	36.7
Volume/Cap:	0.55	0.55	0.00	0.02	0.02	0.02	0.24	0.24	0.00	0.53	0.53	0.55
Delay/Veh:	13.0	13.0	0.0	9.1	9.1	9.1	16.8	16.8	0.0	19.5	19.5	19.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.0	13.0	0.0	9.1	9.1	9.1	16.8	16.8	0.0	19.5	19.5	19.8
DesignQueue:	5	10	0	0	0	0	0	11	0	2	11	13

99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (AM)

Intersection #5737: Old Almaden/Foxworthy



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	7	10	10	10	10	10	10	10	10
Volume Module:												
Base Vol:	182	360	0	10	4	9	11	311	5	43	305	350
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	182	360	0	10	4	9	11	311	5	43	305	350
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	182	360	0	10	4	9	11	311	5	43	305	350
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	182	360	0	10	4	9	11	311	5	43	305	350
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	182	360	0	10	4	9	11	311	5	43	305	350
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	182	360	0	10	4	9	11	311	5	43	305	350
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	0.97
Lanes:	0.34	0.66	0.00	0.44	0.17	0.39	0.07	1.90	0.03	0.12	0.88	1.00
Final Sat.:	604	1196	0	761	304	685	121	3424	55	222	1578	1750
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.00	0.01	0.01	0.01	0.09	0.09	0.09	0.19	0.19	0.20
Crit Moves:		****										****
Green Time:	52.9	52.9	0.0	52.9	52.9	52.9	35.1	35.1	35.1	35.1	35.1	35.1
Volume/Cap:	0.57	0.57	0.00	0.02	0.02	0.02	0.26	0.26	0.26	0.55	0.55	0.57
Delay/Veh:	12.7	12.7	0.0	8.6	8.6	8.6	17.6	17.6	17.6	20.6	20.6	20.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.7	12.7	0.0	8.6	8.6	8.6	17.6	17.6	17.6	20.6	20.6	20.9
DesignQueue:	5	10	0	0	0	0	0	11	0	2	12	13

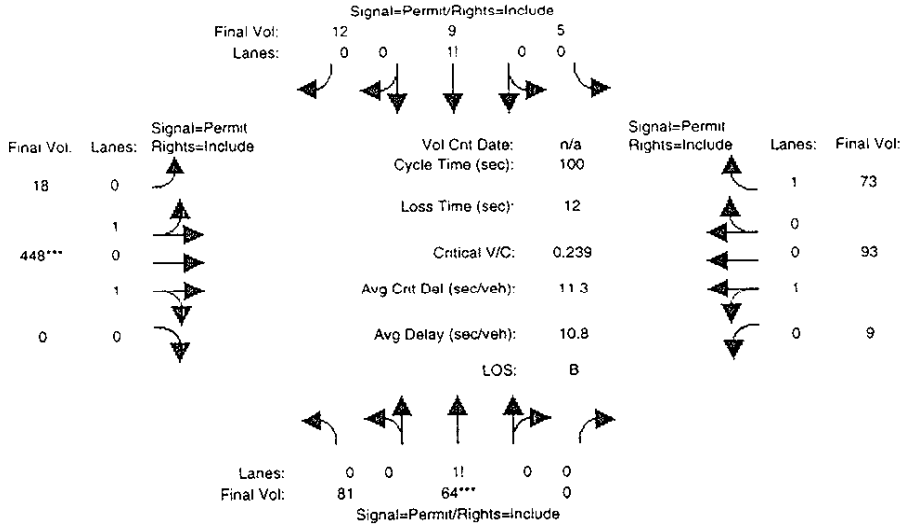
79-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Background (PM)

Intersection #5737: Old Almaden/Foxworthy



Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Min. Green:	7		10	0	7		10	10	7		10	0	7		10	10
Volume Module:																
Base Vol:	81		64	0	5		9	12	18		448	0	9		93	73
Growth Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	81		64	0	5		9	12	18		448	0	9		93	73
Added Vol:	0		0	0	0		0	0	0		0	0	0		0	0
ATI:	0		0	0	0		0	0	0		0	0	0		0	0
Initial Fut:	81		64	0	5		9	12	18		448	0	9		93	73
User Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	81		64	0	5		9	12	18		448	0	9		93	73
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Reduced Vol:	81		64	0	5		9	12	18		448	0	9		93	73
PCE Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Final Vol.:	81		64	0	5		9	12	18		448	0	9		93	73
Saturation Flow Module:																
Sat/Lane:	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800
Adjustment:	1.00		1.00	0.97	0.97		0.97	0.97	1.00		1.00	0.97	1.00		1.00	0.97
Lanes:	0.56		0.44	0.00	0.19		0.35	0.46	0.08		1.92	0.00	0.09		0.91	1.00
Final Sat.:	1006		794	0	337		606	808	139		3461	0	159		1641	1750
Capacity Analysis Module:																
Vol/Sat:	0.08		0.08	0.00	0.01		0.01	0.01	0.13		0.13	0.00	0.06		0.06	0.04
Crit Moves:			****								****					
Green Time:	33.8		33.8	0.0	33.8		33.8	33.8	54.2		54.2	0.0	54.2		54.2	54.2
Volume/Cap:	0.24		0.24	0.00	0.04		0.04	0.04	0.24		0.24	0.00	0.10		0.10	0.08
Delay/Veh:	18.2		18.2	0.0	16.9		16.9	16.9	9.2		9.2	0.0	8.4		8.4	8.3
Delay Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
ProgAdjFctr:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	18.2		18.2	0.0	16.9		16.9	16.9	9.2		9.2	0.0	8.4		8.4	8.3
DesignQueue:	3		2	0	0		0	0	0		12	0	0		2	2

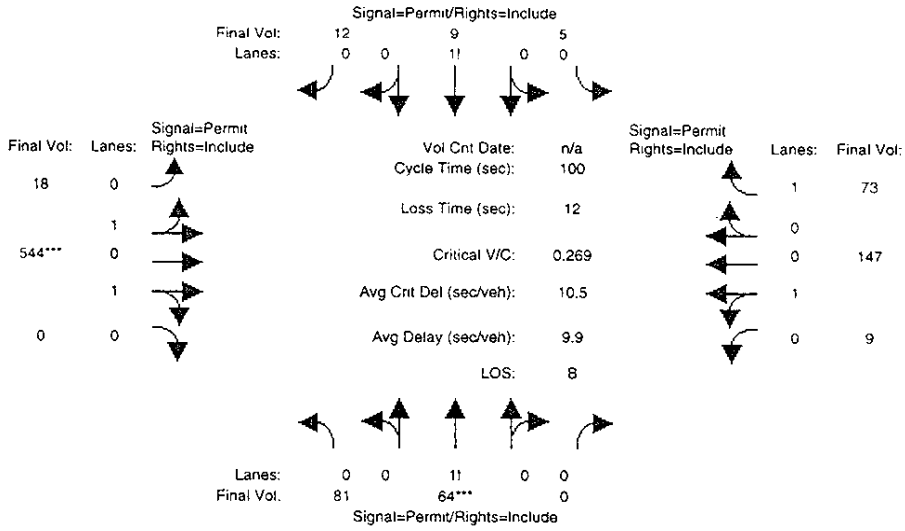
99-083

Copyright (c) 1998 Dowling Associates Inc Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Project (PM)

Intersection #5737: Old Almaden/Foxworthy



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	7	10	10	7	10	0	7	10	10
Volume Module:												
Base Vol:	81	64	0	5	9	12	18	448	0	9	93	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	81	64	0	5	9	12	18	448	0	9	93	73
Added Vol:	0	0	0	0	0	0	0	96	0	0	54	0
ATI:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	81	64	0	5	9	12	18	544	0	9	147	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	81	64	0	5	9	12	18	544	0	9	147	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	64	0	5	9	12	18	544	0	9	147	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	81	64	0	5	9	12	18	544	0	9	147	73
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	0.97	0.97	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Lanes:	0.56	0.44	0.00	0.19	0.35	0.46	0.06	1.94	0.00	0.06	0.94	1.00
Final Sat.:	1006	794	0	337	606	808	115	3485	0	104	1696	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.00	0.01	0.01	0.01	0.16	0.16	0.00	0.09	0.09	0.04
Crit Moves:		****						****				
Green Time:	30.0	30.0	0.0	30.0	30.0	30.0	58.0	58.0	0.0	58.0	58.0	58.0
Volume/Cap:	0.27	0.27	0.00	0.05	0.05	0.05	0.27	0.27	0.00	0.15	0.15	0.07
Delay/Veh:	20.3	20.3	0.0	18.9	18.9	18.9	7.9	7.9	0.0	7.3	7.3	7.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.3	20.3	0.0	18.9	18.9	18.9	7.9	7.9	0.0	7.3	7.3	7.0
DesignQueue:	3	3	0	0	0	0	0	13	0	0	4	2

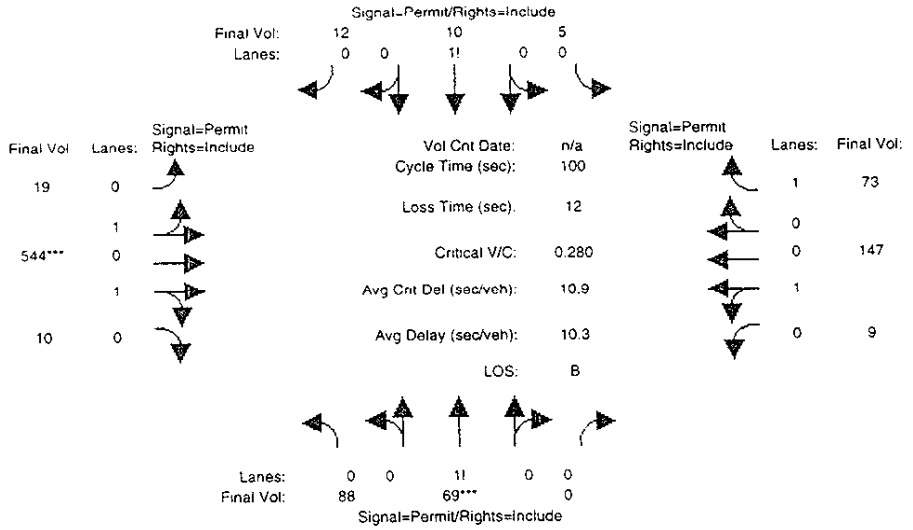
99-083

Copyright (c) 1998 Dowling Associates, Inc
Licensed to Hexagon Trans San Jose

Communications Hill
765 Dwelling Units

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
Future (PM)

Intersection #5737: Old Almaden/Foxworthy



Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	0	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	88	69	0	5	10	12	19	544	10	9	147	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	69	0	5	10	12	19	544	10	9	147	73
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Other Proj.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	69	0	5	10	12	19	544	10	9	147	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	69	0	5	10	12	19	544	10	9	147	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	69	0	5	10	12	19	544	10	9	147	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	88	69	0	5	10	12	19	544	10	9	147	73
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	0.97
Lanes:	0.56	0.44	0.00	0.19	0.37	0.44	0.07	1.90	0.03	0.06	0.94	1.00
Final Sat.:	1009	791	0	324	648	778	119	3418	63	104	1696	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.00	0.02	0.02	0.02	0.16	0.16	0.16	0.09	0.09	0.04
Crit Moves:		****						****				
Green Time:	31.2	31.2	0.0	31.2	31.2	31.2	56.8	56.8	56.8	56.8	56.8	56.8
Volume/Cap:	0.28	0.28	0.00	0.05	0.05	0.05	0.28	0.28	0.28	0.15	0.15	0.07
Delay/Veh:	19.8	19.8	0.0	18.3	18.3	18.3	8.4	8.4	8.4	7.8	7.8	7.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.8	19.8	0.0	18.3	18.3	18.3	8.4	8.4	8.4	7.8	7.8	7.4
DesignQueue:	3	3	0	0	0	0	0	14	0	0	4	2

99-083

Copyright (c) 1998 Dowling Associates, Inc.
Licensed to Hexagon Trans. San Jose

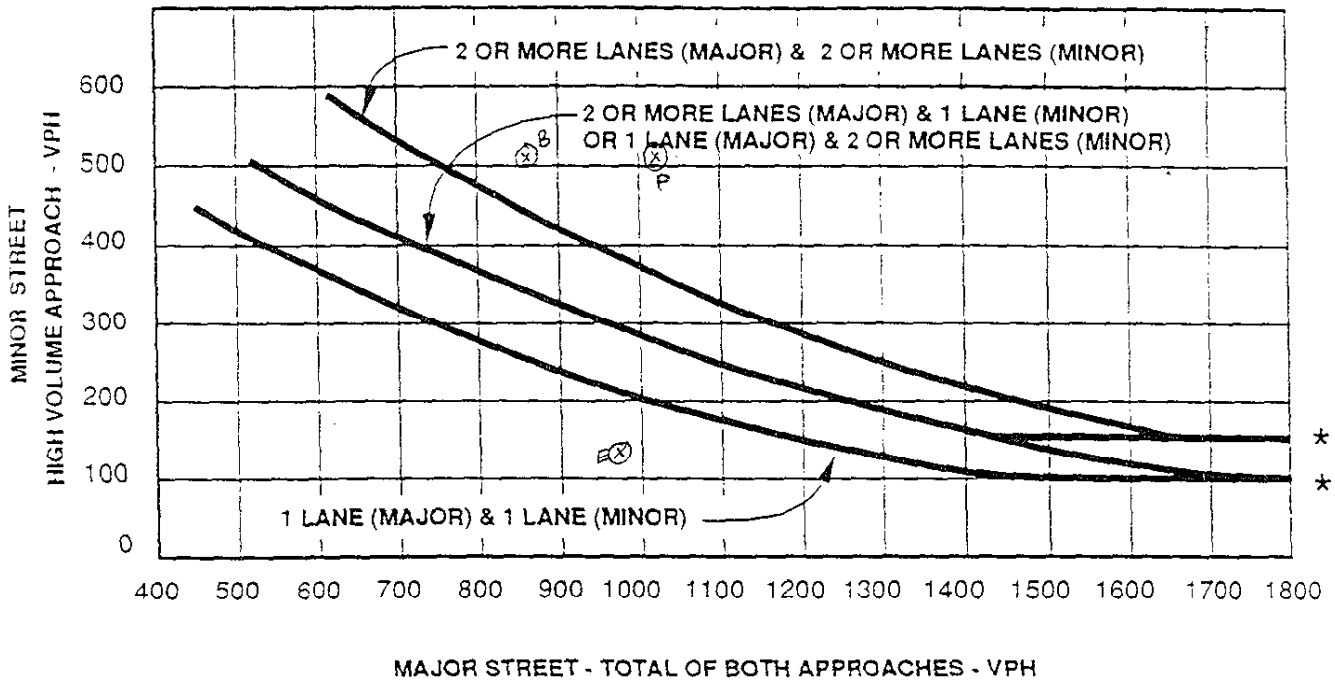
Appendix E

Signal Warrant

99-083

Figure 9-8
PEAK HOUR VOLUME WARRANT
(Urban Areas)

OLD ALMADEN RD/ FOXWORTHY AVE



WARRANT 11 - Peak Hour Volume AM SATISFIED* YES ☑ NO ☐

Approach Lanes	One	2 or more	Existing	Background	Project	Hour
Both Approaches - Major Street FOXWORTHY	X		135	868	1020	
Highest Approaches - Minor Street OLD ALMADEN	X		986	504	504	
			NO	YES	YES	

* Refer to Figure 9-8 (URBAN AREAS) or Figure 9-9 (RURAL AREAS) to determine if this warrant is satisfied.

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.

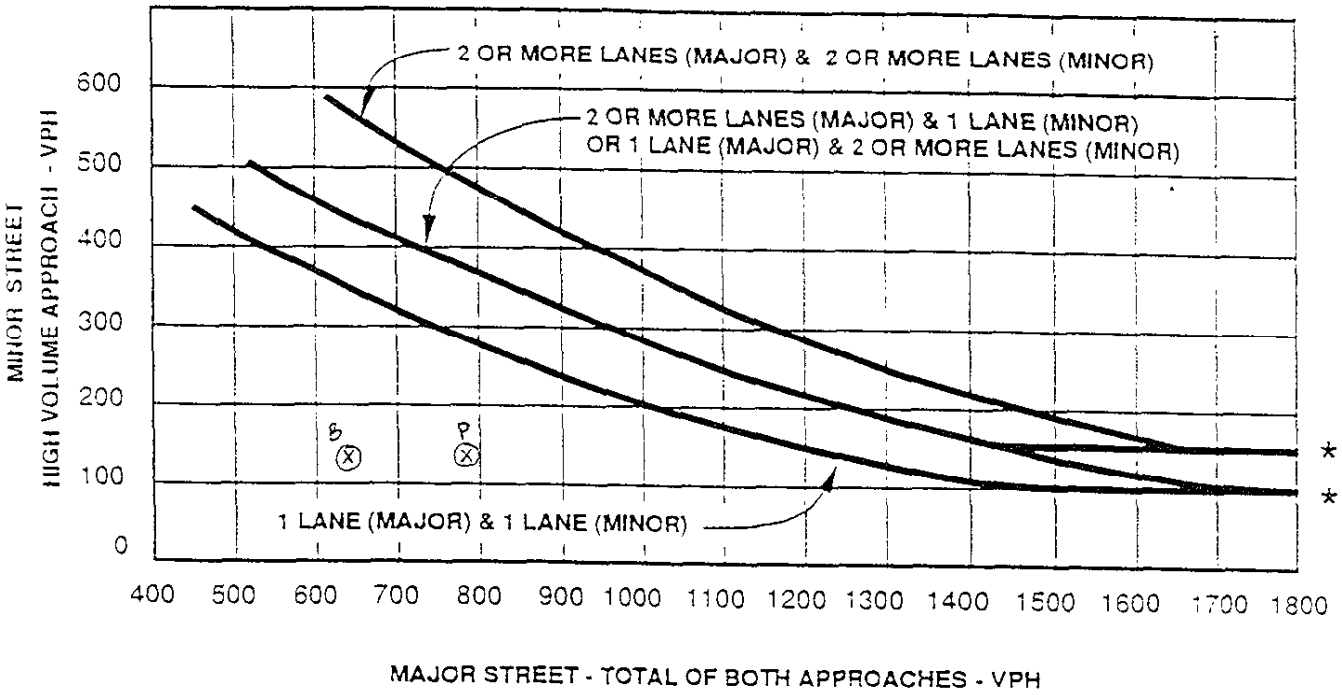
99-083

* NOTE:

150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Figure 9-8
PEAK HOUR VOLUME WARRANT
(Urban Areas)

OLD ALMADEN RD / FOXWORTHY AVE



WARRANT 11 - Peak Hour Volume PM

SATISFIED* YES ☐ NO ☑

Approach Lanes		One	2 or more	Existing	Background	Project	Hour
Both Approaches - Major Street FOXWORTHY		X		266	641	791	
Highest Approaches - Minor Street OLD ALMADEN		X		337	145	145	
				NO	NO	NO	

* Refer to Figure 9-8 (URBAN AREAS) or Figure 9-9 (RURAL AREAS) to determine if this warrant is satisfied.

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.

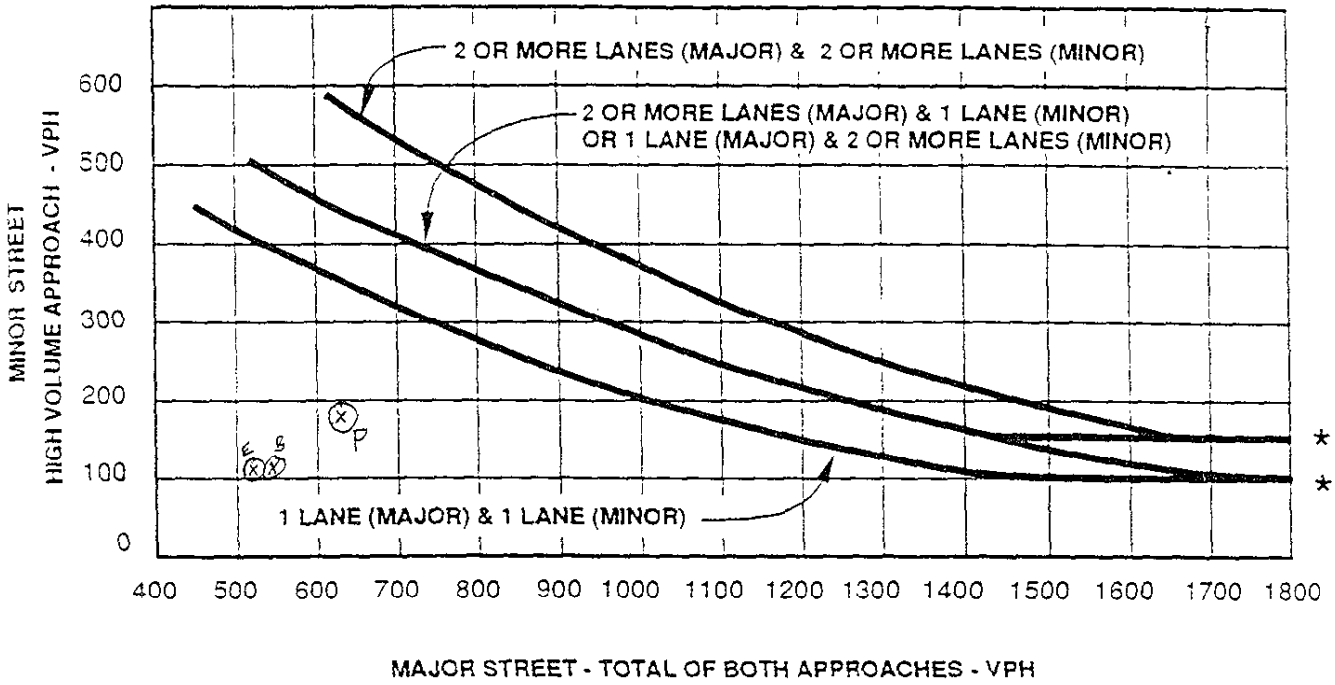
09-089

* NOTE:

150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Figure 9-8
PEAK HOUR VOLUME WARRANT
(Urban Areas)

PROJECT ENTRANCE / HILLSDALE AV.
VISTA PARK DR.



WARRANT 11 - Peak Hour Volume AM

SATISFIED* YES ☐ NO ☑

Approach Lanes		One	2 or more	Existing	Background	Project	Hour
Both Approaches -	Major Street HILLSDALE	X		512	538	627	
Highest Approaches -	Minor Street PROJ. ENT./ VISTA PARK	X		108	108	188	
				NO	NO	NO	

* Refer to Figure 9-8 (URBAN AREAS) or Figure 9-9 (RURAL AREAS) to determine if this warrant is satisfied.

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.

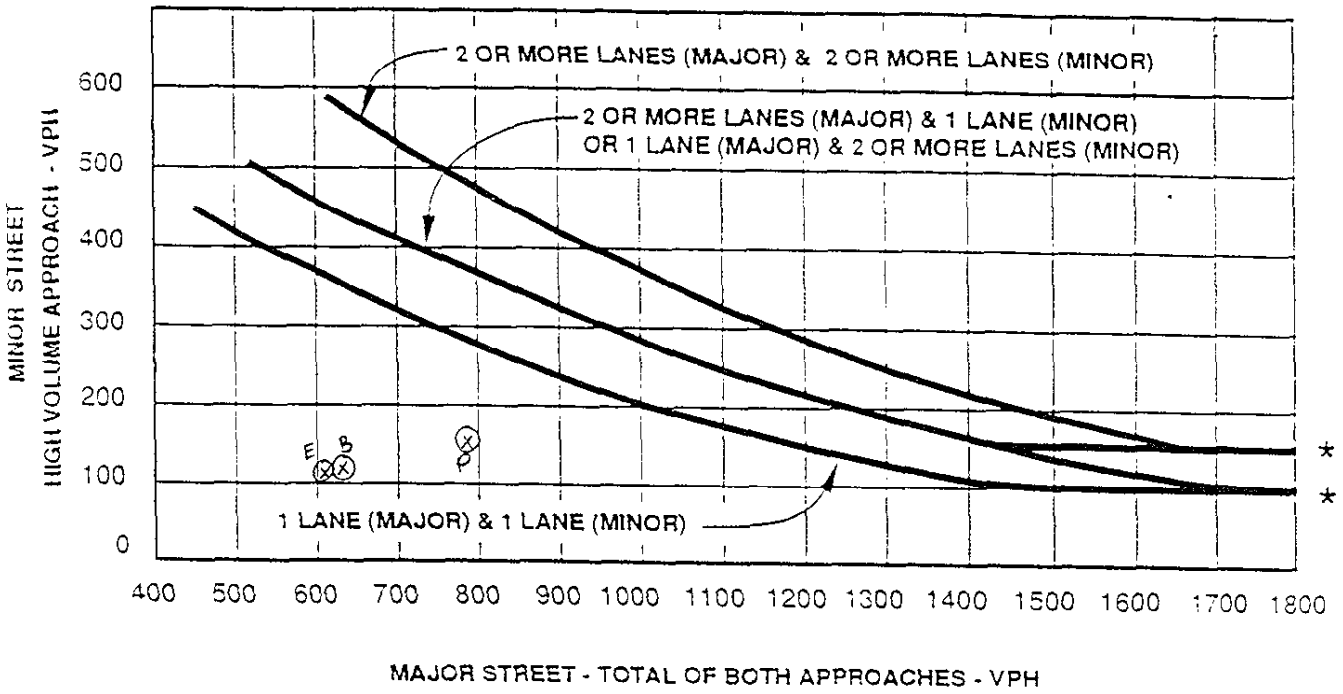
99 - 083

* NOTE:

150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Figure 9-8
PEAK HOUR VOLUME WARRANT
(Urban Areas)

PROJECT: ENTRANCE / HILLSDALE AV.
VISTA PARK DR.



WARRANT 11 - Peak Hour Volume PM

SATISFIED* YES ☐ NO ☑

Approach Lanes	One	2 or more	Existing	Background	Project	Hour
Both Approaches - Major Street HILLSDALE	X		603	629	795	
Highest Approaches - Minor Street VISTA PARK/ PROJ. ENT.	X		102	102	151	
			NO	NO	NO	

* Refer to Figure 9-8 (URBAN AREAS) or Figure 9-9 (RURAL AREAS) to determine if this warrant is satisfied.

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.

99-083

* NOTE:

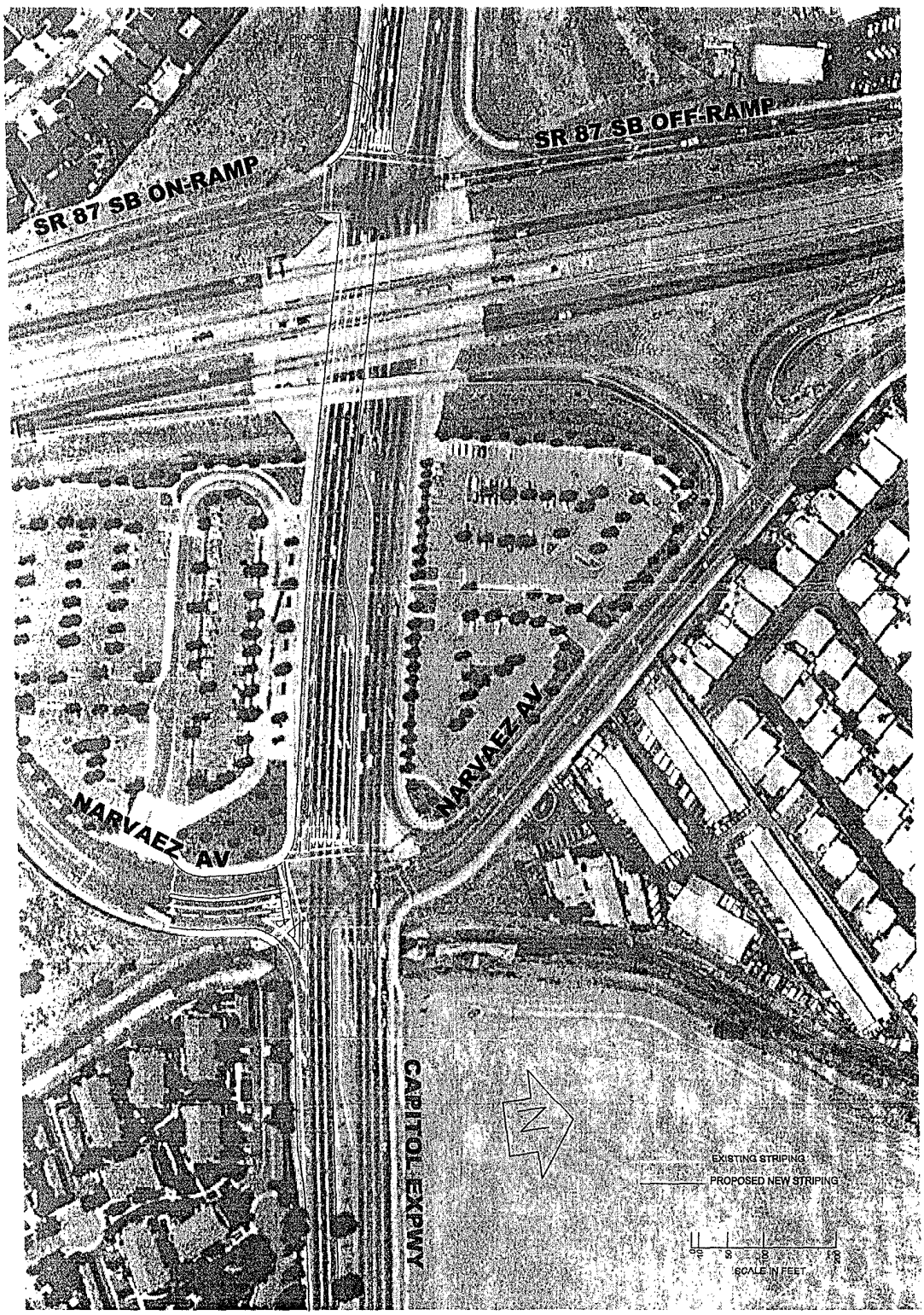
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Appendix F

Capitol Expressway Mitigation Feasibility Drawing

99-088

BEST AVAILABLE COPY



Capitol Expressway at SR 87 and Narvaez Aven

99-083

Mitigation Feasibility Drawi

ɔn
ɔrtation Consultants, Inc.

COMMUNICATIONS HILL
K & B RESIDENTIAL DEVELOPMENT

HYDROLOGY STUDY

Prepared by:

Schaaf & Wheeler, Consulting Civil Engineers

January 2001

99-083

99-083

COMMUNICATION HILL
DEVELOPMENT

HYDROLOGY STUDY

PREPARED FOR
Kaufman & Broad

99-083

PREPARED BY
SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

January 2001

COMMUNICATION HILL DEVELOPMENT

HYDROLOGY STUDY

Introduction

The Communications Hill project is located in the City of San Jose on the north side of Hillsdale Avenue. The project would include high-density housing on the hillside site. The site is generally bounded by Hillsdale Avenue on the south, the top of Communications Hill on the north, the Helzer Ranch project on the west, and the continuation of Vista Park Drive on the east. The site development was included in the Communications Hill Specific Plan.

Existing Flood Conditions

The effective City of San Jose FIRM (August 2, 1982) shows the project site located within Zone D, defined as an area of possible but unknown flood risk. Most of the areas outside the 100-year flood plain are shown as Zone D due to the potential food risk due to levee failures. The current flood maps were prepared prior to the current FEMA levee policy and did not consider levee failures. However, the entire site is located above the estimated 100-year flood elevation for Canoas Creek and is part of the hillside area that drains to Canoas Creek. The average slope on the site is approximately 12 percent. The site would not be subject to 100-year flooding for FEMA purposes.

The project site drains to Canoas Creek, a tributary to the Guadalupe River. Canoas Creek is an engineered drainage channel, owned and maintained by the Santa Clara Valley Water District (SCVWD). The reach of Canoas Creek from the Guadalupe River to Hillsdale Avenue is generally leveed on the west side. The east side generally follows the base of Communications Hill, without a levee.

The Guadalupe River is a generally natural channel that has been partially improved for flood control purposes. The SCVWD and the Corps of Engineers (COE) are in the process of completing the flood control project for the Lower Guadalupe River that would provide 100-year design capacity from San Francisco Bay to Highway 280 in downtown San Jose. The project is currently scheduled for completion in 2000. The reach upstream of Highway 280 does not have 100-year design capacity. The area near Alma Avenue and Highway 87 has flooded several times in the past 20 years, including 1995 and 1998. The SCVWD has proposed a flood control project for the Upper Guadalupe River to provide 100-year capacity. The projected time frame for the project is approximately 20 years.

The area west of Canoas Creek would be subject to flooding from Guadalupe River overflows upstream of the Capitol Expressway bridge during a 100-year flood event. An estimated 900 to 1300 cfs would overtop the east bank of the Guadalupe River and flow northward between the Guadalupe River and Canoas Creek. The overflow would end up on Nightingale Avenue at the Canoas Creek bridge. There, a combination of high water in the Guadalupe River and peak

flows in Canoas Creek would result in additional overbank flooding. The overbank flooding would proceed north past Canoas Creek through residential and commercial property to ultimately join the Guadalupe River south of Interstate 280.

Hydrology Methodology - Canoas Creek

The increase in impervious surfaces associated with project development would generally cause an increase in storm water runoff. The SCVWD has expressed concern that increased runoff from development in the Canoas Creek watershed may affect the existing flood conditions for flood plain areas downstream on Canoas Creek or the Guadalupe River.

The SCVWD HEC-1 hydrology model was modified to evaluate the potential impact of the proposed project and cumulative development on the hydrology for Canoas Creek and Guadalupe River. The HEC-1 model includes the entire upper Guadalupe River. The project site is located in Subarea F, the Canoas Creek watershed area generally north of Capitol Expressway. In the SCVWD HEC-1 model, Subarea F is included as an unurbanized area. Since the area is now over 50 percent urbanized, the area was modified to use the SCVWD urban methodology for the basin. The basin was also subdivided to separate the east and west sides of the Canoas Creek channel, and to separate the southwest portion of the Communications Hill near Hillsdale Avenue and the hillside areas near Narvaez Avenue that drain directly to the creek channel without levees.

Subarea F was divided into three new subareas: Subarea F-North includes the Narvaez Avenue area drainage and the southwest corner of Communications Hill which drains directly to Canoas Creek without levees; Subarea F-East includes the southeast portion of Communications Hill which drains to Hillsdale Avenue, and the development area south of Hillsdale Avenue to Capitol Expressway, which drain to the Hillsdale Avenue storm drain to Canoas Creek; and Subarea F-West which includes the portion of Subarea F west of Canoas Creek. The Communications Hill project is included in Subarea F North, and Subarea F-East. The subareas are shown in Figure 1.

The SCVWD urban hydrology methodology develops separate runoff hydrographs for the pervious and impervious portions of each subarea and adds these hydrographs for the total subarea runoff hydrograph. For the subareas within Subarea F, the areas west of Canoas Creek and south of Hillsdale Avenue were assumed to be developed with 60% impervious area and 40% pervious area. This is normal practice for urbanized subareas in the Canoas Creek watershed. For the area within the Communications Hill planning area and Dow Drive area, the existing condition was assumed to be 100% pervious. For developed conditions, the Communications Hill Specific Plan and Dow Drive Development land uses were assumed. Because of the higher densities proposed in the Specific Plan, the development areas within the Specific Plan area were assumed to be 80% impervious. However, because of the open space included in the Specific Plan, the net percent impervious values are less than the standard 60% used in other subareas. The individual drainage areas and estimated percent impervious values shown in Table 1.

99-083

Table 1
Subarea Drainage Data

Subarea	Drainage Area (sq mi)	1997 Existing % Impervious	Development % Impervious
F - West	0.453	30	60
F - East	0.320	30	59
F - North	0.330	18	37

The existing HEC-1 model uses a time interval of 30 minutes for calculation, which is sufficient for large watersheds with subareas of several square miles that have times of concentration greater than 90 minutes. For the smaller subarea within Subarea F, the times of concentration are 20 minutes, or less, and a smaller time interval was required. The subareas within Subarea F were modeled separately using a time interval of 5 minutes. The 30-minute rainfall pattern was divided into 5-minute intervals. Within the 30-minute interval of maximum rainfall, the rainfall was distributed to match the ratios of the 5- and 10- minute rainfall to the 30-minute rainfall from the San Jose Intensity-Duration-Frequency curve for a 100-year recurrence interval.

For urbanized watersheds, the SCVWD design hydrology model routes the runoff hydrograph through the storm drain system using the HEC-1 storage-discharge routing technique. The runoff hydrograph from Subareas F-West was routed through generalized storm drains systems, using the 1976 storage discharge relationship for leveed areas (no overbank flow to channel). For Subarea F-East, the subarea hydrograph was routed through generalized storm drains, using the 1976 storage discharge relationship for non-leveed areas. This relationship assumes that flows in excess of the storm drain capacity would flow overland to the creek channel. For Subarea F - North, the subarea was assumed to drain directly to the creek without routing through a storm drain storage relationship. The majority of the subarea is so steep that only limited storage would be available. Runoff that does not enter the storm drain system would flow overland to the channel with little or no ponding.

Subarea F Runoff

Because the SCVWD has expressed concerns relating to the entire Communications Hill Specific Plan area development, the planned development in Subarea F-North and Subarea F-East was evaluated to consider cumulative development conditions. The 1998 existing development was assumed for the existing conditions. The potential development impacts were evaluated using the modified SCVWD model. The results of the model for the North and East subareas are shown in Table 4 for existing conditions and developed conditions.

The development conditions for Subarea F-North include both the current project development and the Helzer Ranch development. The Helzer Ranch development is under construction.

However, the Helzer Ranch project includes a drainage detention pond that was sized to include the current project development in Subarea F-North. Both projects drain to a storm drain outfall to Canoas Creek at Narvaez Avenue. The Helzer Ranch project includes approximately 8 acres of development. The current Communications Hill project includes approximately 23 acres of development in the Narvaez Avenue drainage basin.

Table 2
Subarea Peak Flow Rates
Modified SCVWD Model Procedure

Location	1998 Existing Conditions (cfs)		Specific Plan Development (cfs)	
	10-yr	100-yr	10-yr	100-yr
Subarea F - North	113	173	125	187
Subarea F - East Before Storm Drain Routing	116	178	132	200
Subarea F - East After Storm Drain Routing	50	75	53	78

Based on the modified SCVWD model procedure, the 10-year peak runoff for Subarea F-North was estimated to be 113 cfs for existing conditions, and 125 cfs for development conditions, an increase of 12 cfs. The 100-year peak runoff was estimated to be 173 cfs for existing conditions, and 187 cfs for development conditions, an increase of 14 cfs.

For Subarea F-East, the Hillsdale Avenue storm drain area, the 10-year peak runoff was estimated to be 116 cfs for existing conditions, and 132 for development conditions, an increase of 16 cfs. The flow from Subarea F-East was routed through a generalized storm drain based on the SCVWD 1976 storage discharge relationship. After routing, the estimated 10-year flow rate was 50 cfs for existing conditions, and 53 cfs for project conditions, an increase of 3 cfs.

The 100-year peak runoff for Subarea F - East was estimated to be 178 cfs for existing conditions, and 200 cfs for development conditions, an increase of 22 cfs. After routing through the storm drain system, the contribution to Canoas Creek was estimated to be 75 cfs for existing conditions, and 78 cfs for development conditions, an increase of 3 cfs. During both the 10-year and 100-year flood events, the excess runoff that cannot enter the storm drain system would pond in streets and flow overland to the stream channel.

99-083

Hydrology Methodology - Site Runoff

The existing and developed conditions runoff hydrographs were also estimated using the SCS Curve Number (CN) methodology for the project site drainage areas. This methodology is part of the Districts draft hydrology procedure, but has not been implemented for existing design flow for major streams, including Canoas Creek.

The CN methodology includes model parameters to consider soil types and ground cover complexes that are not considered in the SCVWD design hydrology procedure. The major difference in the procedures is the calculated loss rates for pervious areas. The loss rate represents the portion of rainfall that is assumed to infiltrate into the soil and does not runoff as surface flow. The SCVWD procedure assumes a uniform loss rate throughout the watershed and does not consider local variations in soil types and vegetation. The existing conditions in Subarea F-North are generally steep hillsides with shallow clay type soils and grass vegetation. This means that the potential losses to infiltration would be lower than for other areas with deeper soils and less clay type soils, particularly during large flood events when the surface soils may be saturated by earlier rainfall.

For the CN procedure, impervious areas were assumed to have a CN of 98 (maximum runoff). The hilltop and hillside open space areas were assumed to have a CN of 84 (for Antecedent Moisture Condition II (AMC II). Lawn and open space areas were assumed to have a CN of 71 (AMC II). The AMC values were previously calibrated for the 10- and 100-year flood conditions to match the SCVWD design values for other natural watersheds. The calibrated AMC values were AMC II for the 10-year flood event, and AMC II½ for the 100-year flood. AMC II½ is half way between AMC II and AMC III. Based on the CN procedure, AMC II implies 1.4 to 2.1 inches of rainfall in the previous 5 days. AMC III implies more than 2.1 inches of rainfall in the previous 5 days. The 24-hour rainfall and storm pattern from the modified SCVWD model were used for the CN procedure.

Narvaez Drainage Area Site Runoff

The existing condition and development condition runoff was estimated for the local Helzer Ranch drainage basin using the CN procedure. The local drainage basin was considered to include the Helzer Ranch development area, the Communications Hill project site, and the hillside areas above the development area or above the access road from Helzer Ranch up to the Communications Hill site. The local drainage area is approximately 69.0 acres. The local drainage areas for the Narvaez drainage area are shown in Figure 2.

The existing and project condition unit hydrographs were based on the Clark's unit hydrographs procedure, based on the subarea parameters for the individual subbasins. For the pervious areas, the time of concentration was estimated based on the Kerby-Hathaway formula based on an average n-value of 0.07 for overland flow. The storage coefficient R was estimated to be equal to the Tc. The estimated Tc for the pervious area was 0.18 hr, (11 min). For the impervious areas, the Tc was estimated based on the estimated flow time in the project storm drain system.

The development condition Tc was estimated to be 0.10 hr, (6 min). The routing coefficient R was assumed to be 40 percent of the Tc.

Table 3
Local Drainage Area Peak Flow Rates
Narvaez Drainage System

Recurrence Interval	Existing Conditions Peak Flow (cfs)	Developed Conditions Peak Flow (cfs)
10 Year Storm	39	47
100 Year Storm	69	80

Based on the CN hydrology procedure, the 10-year peak runoff was estimated to be 39 cfs for existing conditions, and 47 cfs for development conditions, an increase of 18 cfs. The 100-year peak runoff was estimated to be 69 cfs for existing conditions, and 80 cfs for development conditions, an increase of 11 cfs.

Due to the site grading and the overall phasing of development on Communications Hill, the current project site includes a portion that would drain to a future storm drain system with full development. In order to build that portion of the site, the project would build an interim detention pond and pump station to discharge to the Narvaez drainage system. The interim pond and the drainage area are shown on the drainage area map in Figure 2. The estimated design capacity of the interim pond is 1.0 acre feet for the 100-year flood. The estimated design flow rate for the pump station would be approximately 0.5 cfs. The estimated developed conditions peak flow rate and hydrographs include the additional flow from the additional area.

Hillsdale Drainage Area Site Runoff

The existing condition and development condition runoff was estimated for the local Hillsdale drainage basin using the CN procedure. The local drainage basin was considered to include the current project development area, portions of the future Communications Hill specific plan area, the hillside areas above and below the development area at the area the access road from Hillsdale Avenue up to the Communications Hill site. The local drainage area is approximately 64.7 acres. The local drainage areas for the Hillsdale drainage area are shown in Figure 3.

The existing and project condition unit hydrographs were based on the Clark's unit hydrographs procedure, based on the subarea parameters for the individual subbasins. For the pervious areas, the time of concentration was estimated based on the Kerby-Hathaway formula based on an average n-value of 0.07 for overland flow. The storage coefficient R was estimated to be equal to the Tc. The estimated Tc for the pervious area was 0.20 hr, (12 min). For the impervious areas, the Tc was estimated based on the estimated flow time in the project storm drain system.

99-083

The development condition Tc was estimated to be 0.10 hr, (6 min). The routing coefficient R was assumed to be 40 percent of the Tc.

Table 4
Local Drainage Area Peak Flow Rates
Hillsdale Drainage System

Recurrence Interval	Existing Conditions Peak Flow (cfs)	Developed Conditions Peak Flow (cfs)
10 Year Storm	36	52
100 Year Storm	63	83

Based on the CN hydrology procedure, the 10-year peak runoff was estimated to be 36 cfs for existing conditions, and 52 cfs for development conditions, an increase of 13 cfs. The 100-year peak runoff was estimated to be 63 cfs for existing conditions, and 83 cfs for development conditions, an increase of 20 cfs.

Cumulative Flood Plain Impacts - Canoas Creek

Based on discussion with the SCVWD and City of San Jose staff, the potential cumulative impacts on Canoas Creek from development on Communication Hill were considered to be significant. For the combined runoff from the Narvaez drainage system and the Hillsdale drainage system, the potential cumulative development within the Communications Hill specific plan area would increase by approximately 16 cfs for the 10-year flood event, and 19 cfs for the 100-year flood event. These estimates were based on the HEC-1 models used to estimate the flow rates in Table 2.

The 10-year and 100-year flood hydrographs for Canoas Creek upstream of the confluence with the Guadalupe River are shown in Figures 4 and 5.

Due to the limited capacity of the storm drain systems which drain to Canoas Creek and the large amount of storage in the watershed area, the peak flows in the Canoas Creek channel last for a long period during the 100-year design storm. The peak flow rate at Capitol Expressway is 1963 cfs, but the channel flow rate is over 1800 cfs for more than 22 hours. Therefore, the increased runoff from Subarea F-North and Subarea F-East add to the peak channel flow. The 100-year peak flow rate in Canoas Creek at the Guadalupe River would increase by approximately 19 cfs, an increase of 0.89 percent. This would include the Communications Hill Specific Plan development.

99-083

Hydrology Methods

It should be noted that two different hydrology methods have been used to evaluate the potential impacts of the proposed project. The original SCVWD methodology was used to evaluate the potential impact on Canoas Creek. This method was used to establish the existing design flow rates on Canoas Creek and was the basis for the hydrology used for the existing FEMA Flood Insurance Rate Maps. The parameters and details for the Canoas and Guadalupe River watersheds have been established and approved in prior studies. The existing models provide a a basis for evaluation of impacts on identified downstream stream channels and flood plains. The model was used to evaluate whether the proposed project would have a significant effect on design and FEMA conditions.

The SCVWD has developed a new hydrology methodology and is in the process of implementation of the methodology in the county. However, very few large watersheds have been modeled with the 1996 methodology. In addition, the results of the 1996 methodology for a major stream should be reviewed and reconciled with the existing design flow rates to identify conflicts with existing studies. Therefore, the new methodology was not used to estimate flow rates for Canoas Creek.

The 1996 methodology was used to estimate the existing and project runoff for the small local watersheds. As noted previously, the CN procedure has some additional parameters which take into account more watershed features, such as soil type and ground cover. In general, more of the parameters are directly related to watershed features instead of being calibrated.

The results of the two different methodologies show that for the Communications Hill sites, the estimated increase due to development is smaller for the 1996 methodology. For Subarea F North, the 10-year increase was estimated to be 12 cfs based on the 1976 methodology, and 8 cfs for the Narvaez drainage system development. For Subarea F East, the 10-year increase was estimated to be 16 cfs based on the 1976 methodology, and 14 cfs for the Hillsdale drainage system development (before any storm drain routing). This appears to be an effect of the soil types in the local watersheds, and the relative size of the development within the subareas being calculated.

Detention Storage

The City of San Jose has proposed detention storage ponds within the Communications Hill Specific Plan that drain directly to Canoas Creek to mitigate for potential increased flows due to development. The specific plan included detention ponds in both the Narvaez and Hillsdale drainage areas. The Helzer Ranch project includes a detention pond that was designed to mitigate for both the Helzer Ranch project and the plan upstream development that would be included in the current project.

99-083

Narvaez System

The Helzer Ranch project includes a storage area designed to serve the upstream development area on the project site. The detention pond was graded to the final design contours. The outlet structure would be modified when the additional drainage area is added to the drainage system. The detention pond has a maximum design water depth of approximately 3 feet. The detention pond has a required capacity of approximately 1.0 acre-feet for the 100-year design storm. The detention pond location is shown in Figure 2.

Table 6
Narvaez Avenue Drainage Area
Ultimate Development
Peak Discharge Flow Rates

Recurrence Interval	Existing Conditions (cfs)	Developed Conditions (cfs)	Detention Conditions (cfs)
10-Year Storm	39	47	39
100-Year Storm	63	83	63

The 10-year and 100-year hydrographs for the existing, developed and detention conditions are shown in Figures 6 and 7. The existing, developed and mitigated peak discharge rates are shown in Table 6.

The specific requirements for the modified outlet from the Narvaez detention storage area may be affected by the specific site plans and grading conditions for the project and the planned development in the drainage area. In particular, a grading and drainage plan that increased the drainage area to the Narvaez system could affect the performance of the detention pond, and increase flows to Canoas Creek. The sizing and operation conditions of the detention storage area would be reviewed and updated as part of the final design of the individual development projects. The design criteria for the detention pond modifications would be to allow no net increase in the flow rate to Canoas Creek as a result of the project.

Hillsdale System

The proposed project includes a storage area designed to serve the development area on the project site and the future upstream development . The detention pond would be graded to the final design contours. The detention pond has a maximum design water depth of approximately 3 feet. The detention pond has a required capacity of approximately 1.5 acre-feet for the 100-year design storm. The detention pond location is shown in Figure 3.

99-083

The 10-year and 100-year hydrographs for the existing, developed and detention conditions are shown in Figures 8 and 9. The existing, developed and mitigated peak discharge rates are shown in Table 7.

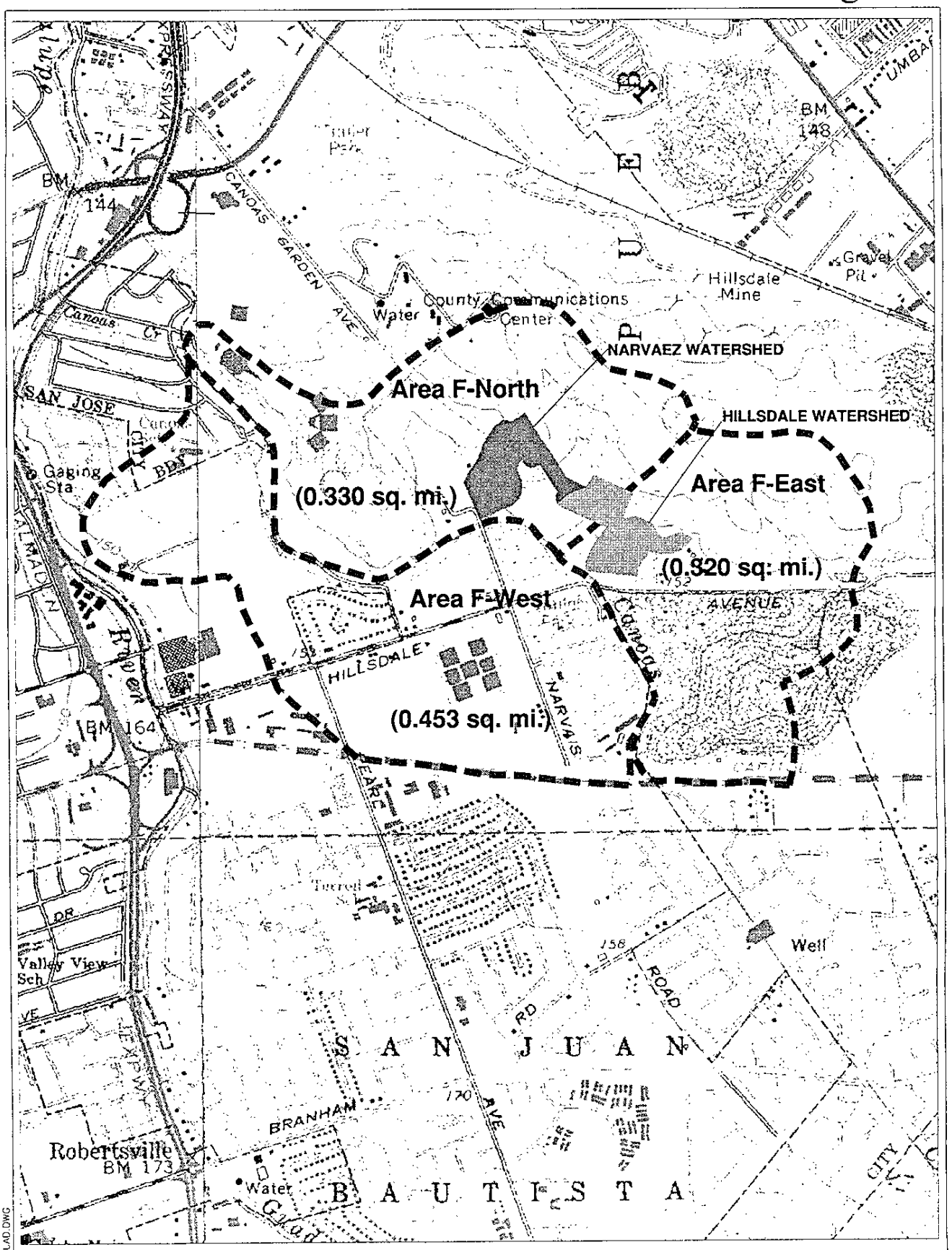
Table 7
Hillsdale Avenue Drainage Area
Ultimate Development
Peak Discharge Flow Rates

Recurrence Interval	Existing Conditions (cfs)	Developed Conditions (cfs)	Detention Conditions (cfs)
10-Year Storm	36	52	32
100-Year Storm	63	83	63

The specific requirements for the Hillsdale detention storage area may be affected by the specific site plans and grading conditions for the project and the planned development in the drainage area. In particular, grading on the top of Communications Hill has the potential to divert runoff from the north side to the south side of the hill, or the reverse. The north and east sides of the hill drain to Coyote Creek. A grading and drainage plan that increased the drainage area to Canoas Creek could affect the performance of the detention pond, and increase flows to Canoas Creek. The sizing and operation conditions of the detention storage area would be reviewed and updated as part of the final design of the individual development projects. The design criteria for the detention pond system would be to allow no net increase in the flow rate to Canoas Creek as a result of the project.

99-083

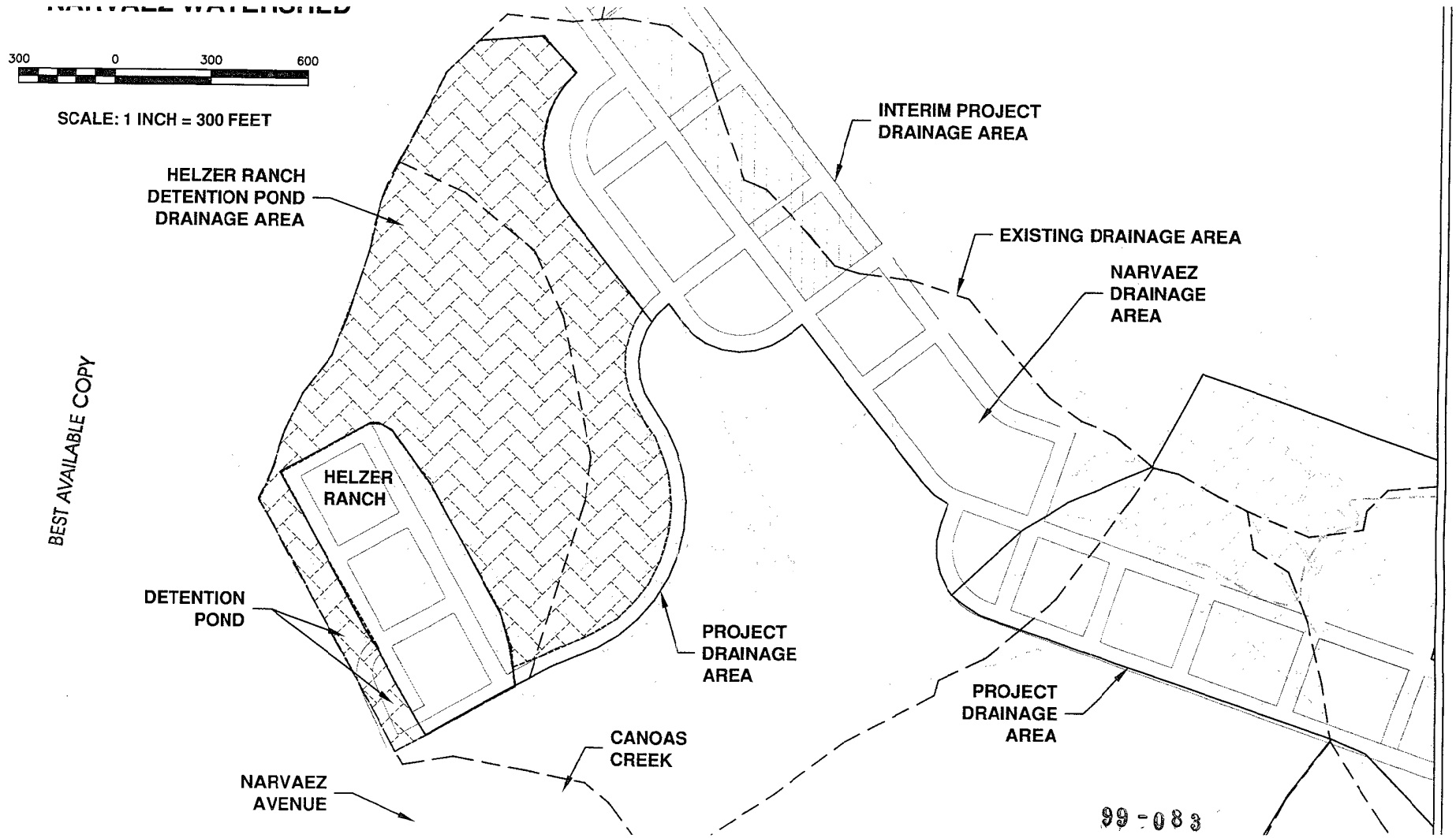
Figure 1



AREA F - DRAINAGE BASIN MAP 99 - 083

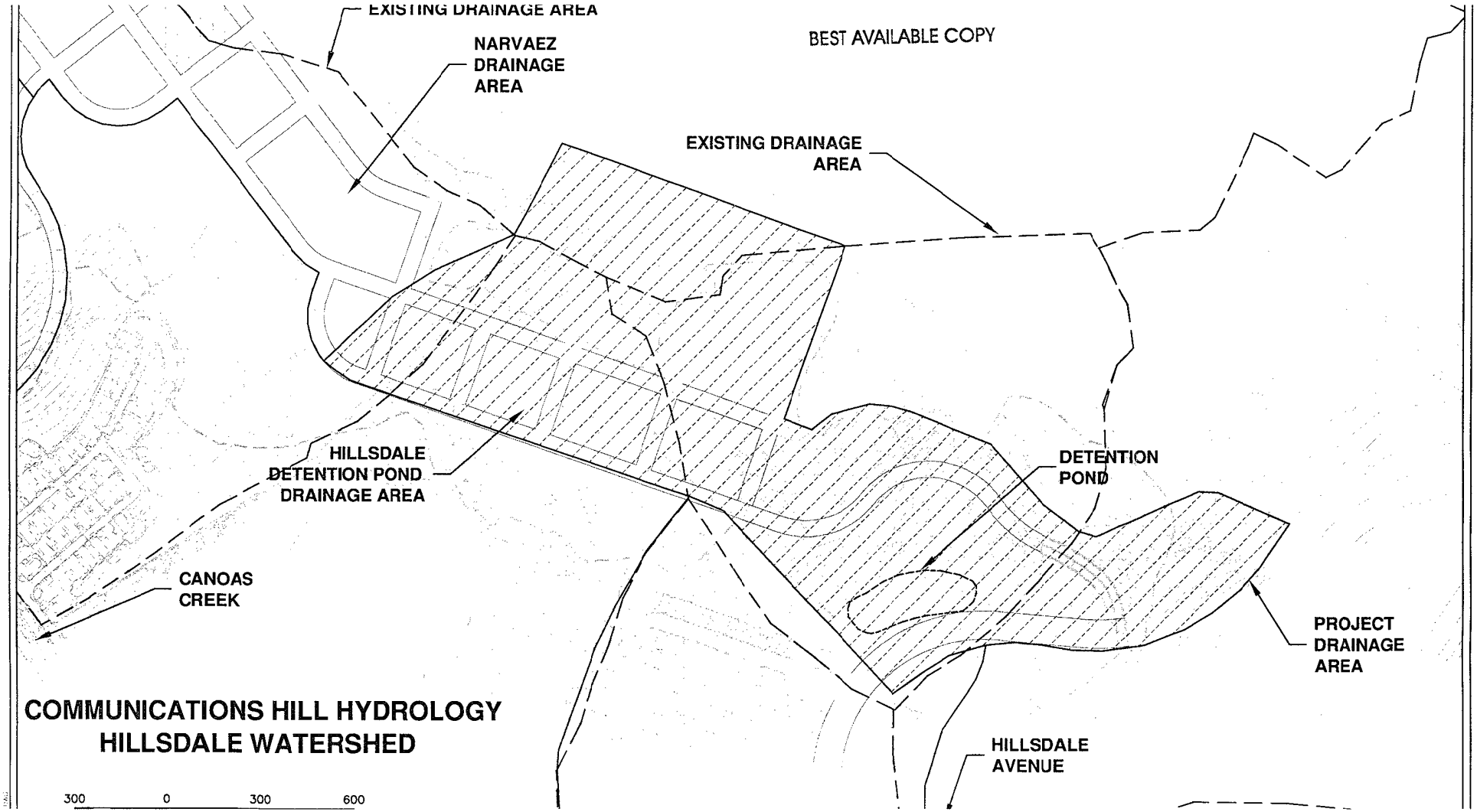
FILE NAME:COMMOLAD.DWG

Schaaf & Wheeler



BEST AVAILABLE COPY

Schaaf & Wheeler



BEST AVAILABLE COPY

COMMUNICATIONS HILL HYDROLOGY
HILLSDALE WATERSHED

Schaaf & Wheeler

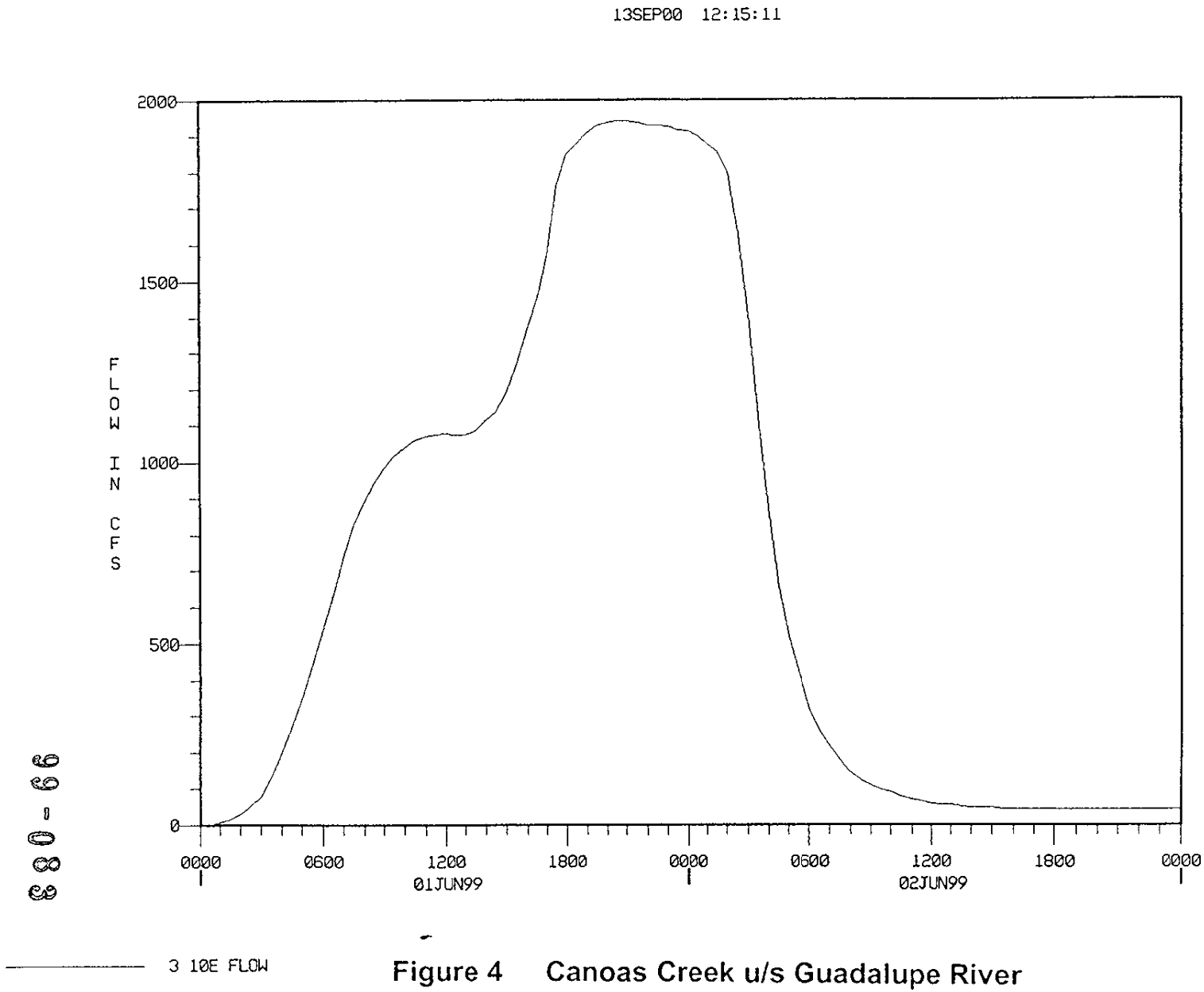


Figure 4 Canoas Creek u/s Guadalupe River
10-Year Flood

99-0083

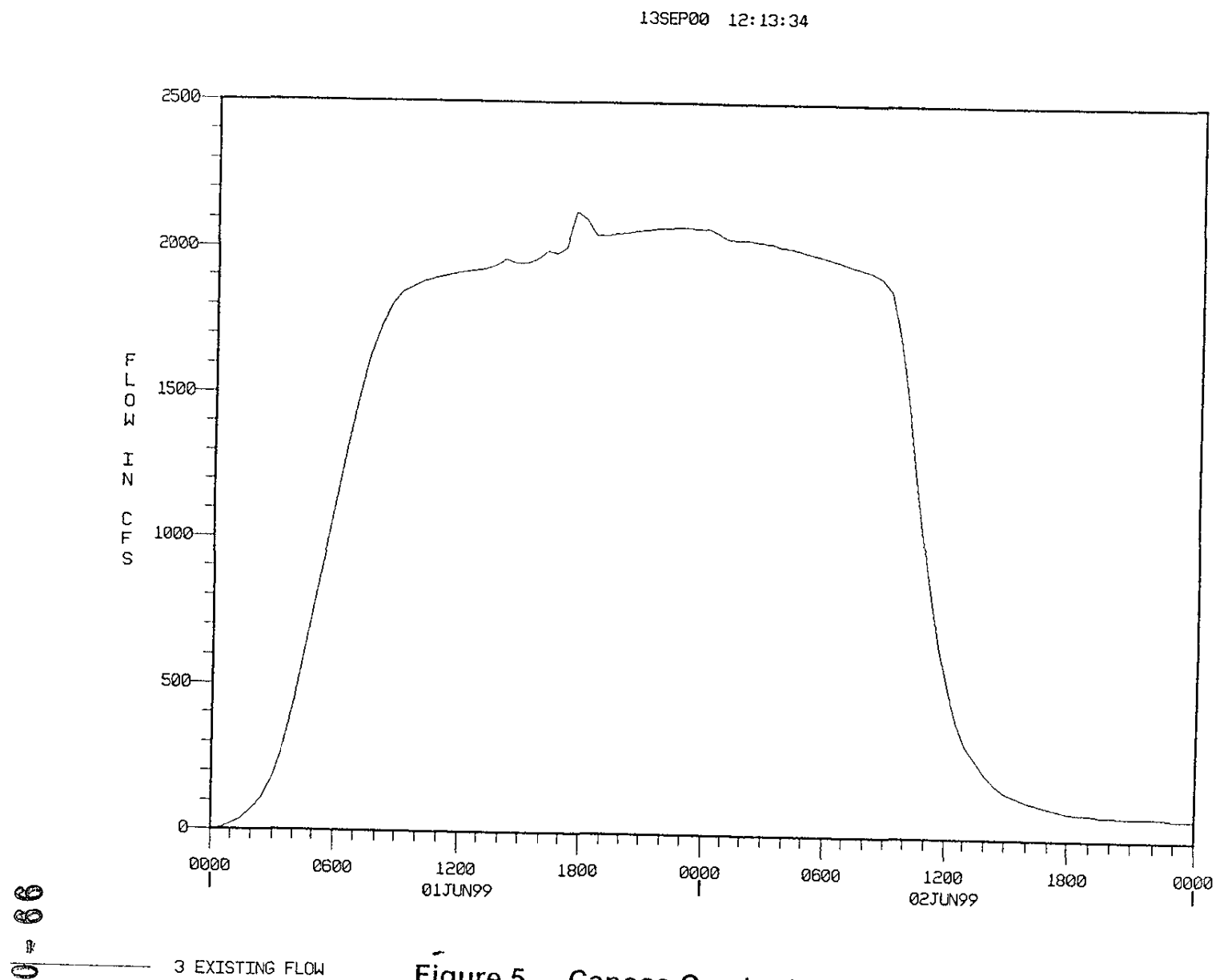


Figure 5 Canoas Creek u/s Guadalupe River
100-Year Flood

99-083

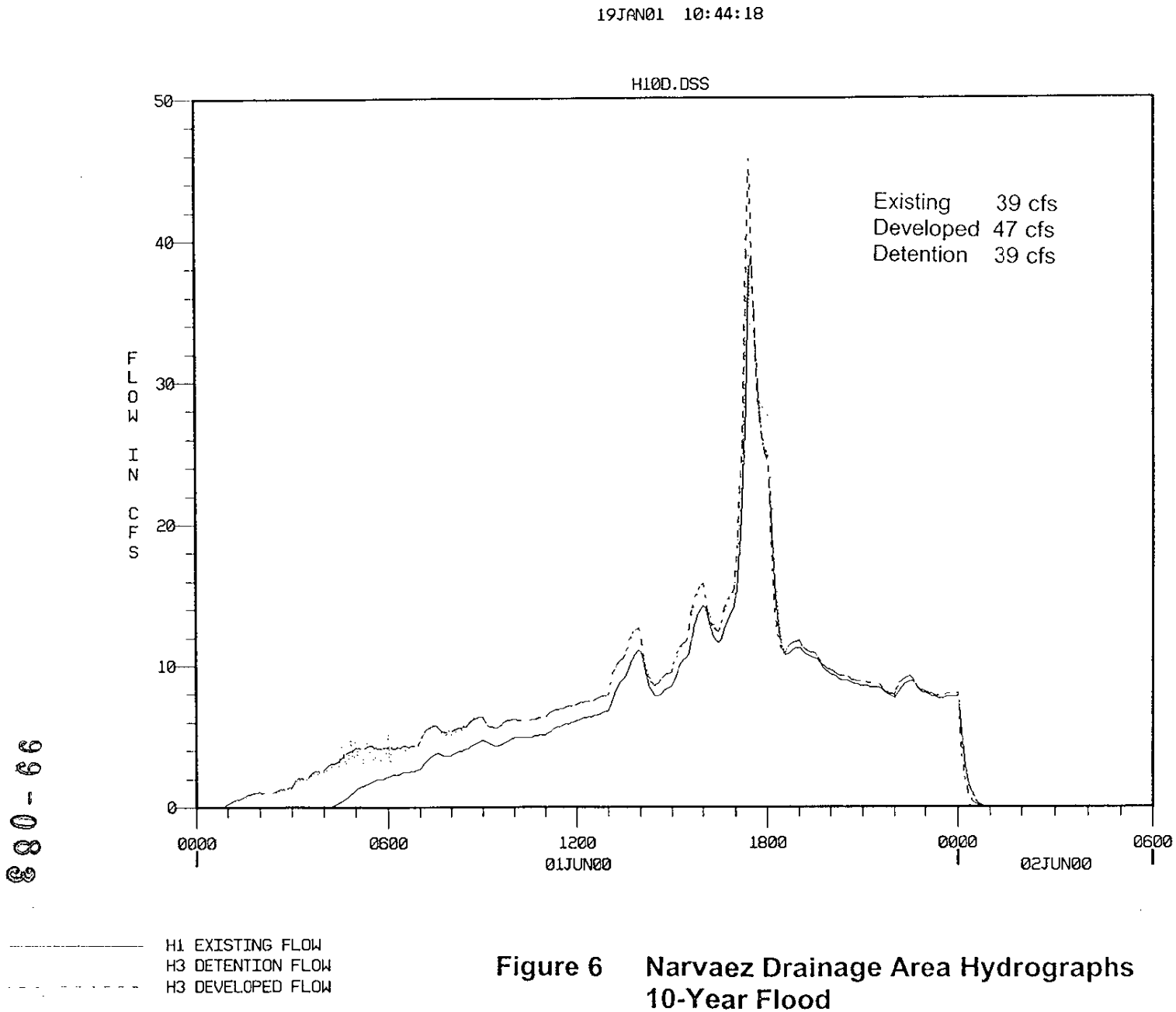


Figure 6 Narvaez Drainage Area Hydrographs 10-Year Flood

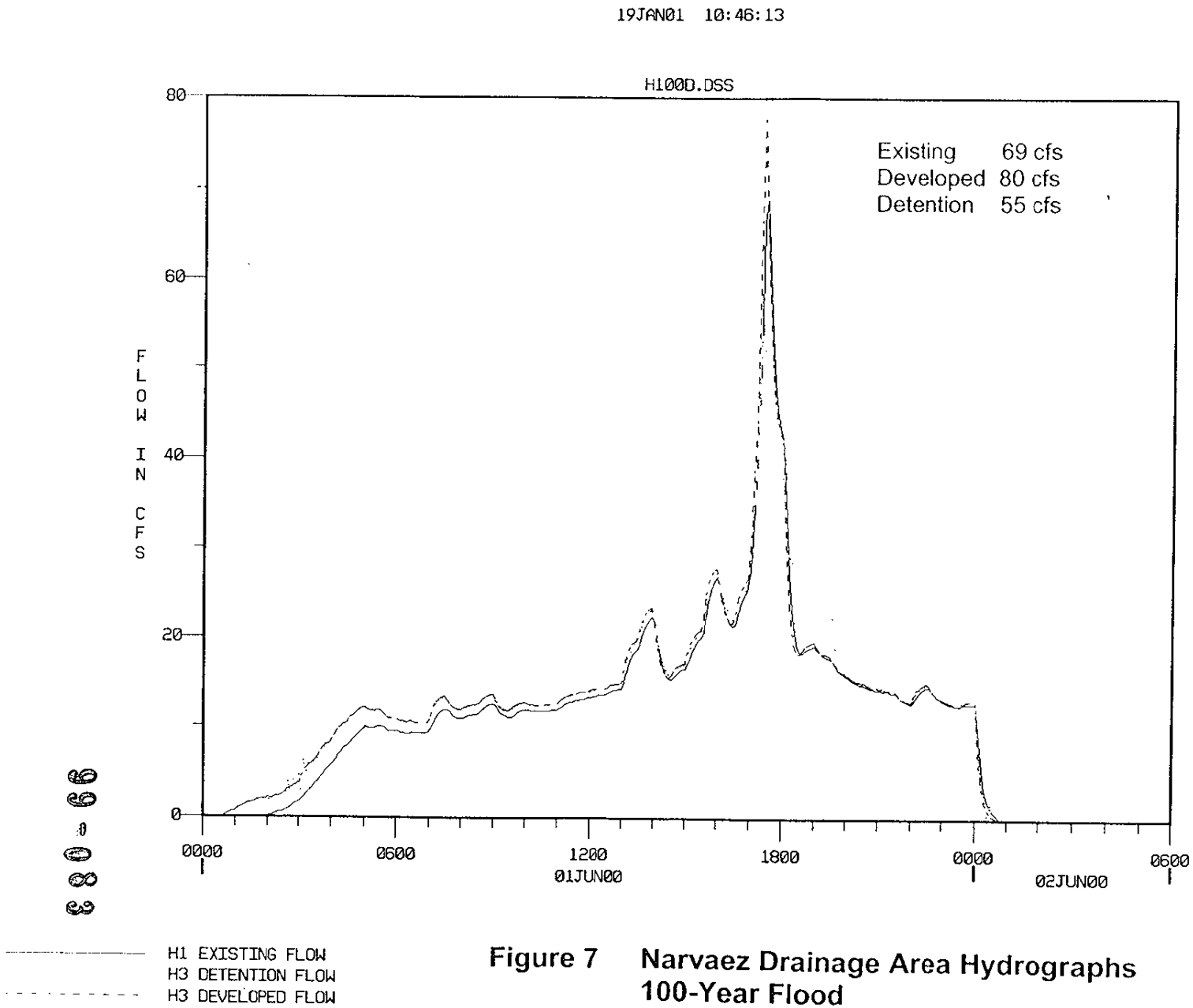
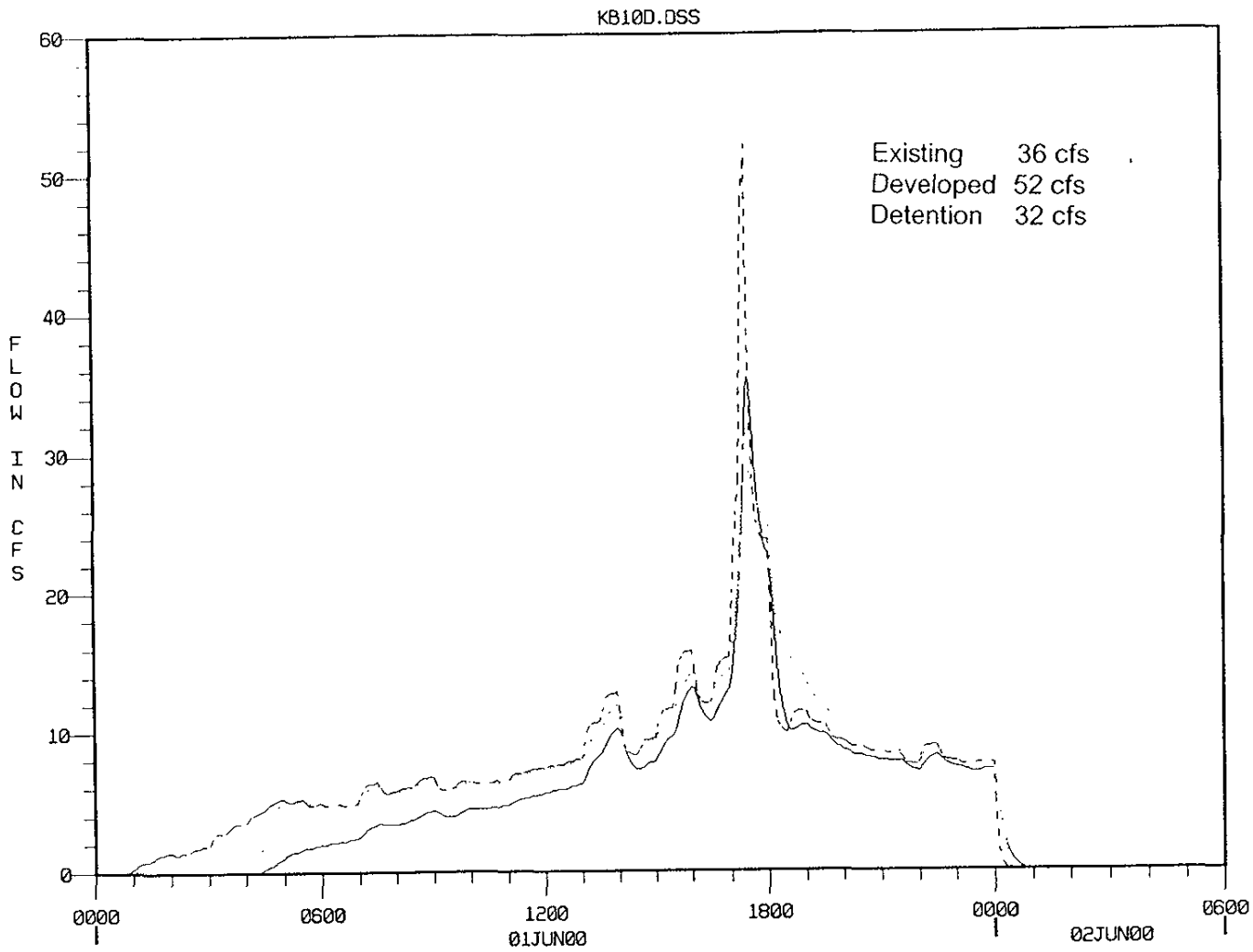


Figure 7 Narvaez Drainage Area Hydrographs 100-Year Flood

99-083

19JAN01 10:38:22



1 EXISTING FLOW
K3 DETENTION FLOW
K3 DEVELOPED FLOW

Figure 8 Hillsdale Drainage Area Hydrographs 10-Year Flood

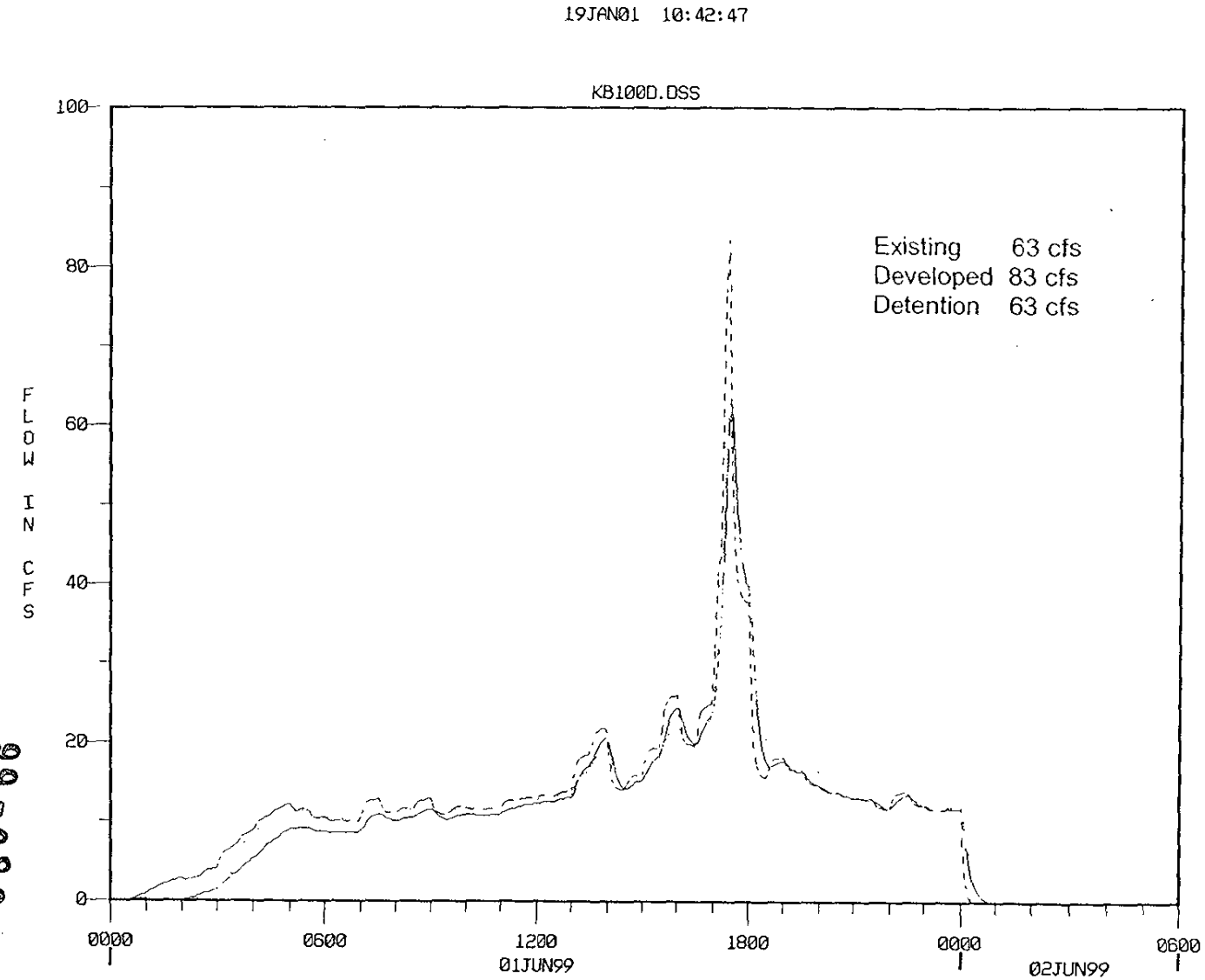


Figure 9 Hillsdale Drainage Area Hydrographs 100-Year Flood

J-66
680-66

SECTION V.

COPIES OF COMMENTS RECEIVED ON THE DRAFT SEIR

99-083

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W 2605
Sacramento, California 95825-1846

RECEIVED
JAN 17 2001
CITY OF SAN JOSE
PLANNING DEPARTMENT

IN REPLY REFER TO:
1-1-01-TA-0785

uary 16, 2001

Mr. Darryl Boyd
Department of Planning, Building, and Code Enforcement
City of San Jose
801 North First Street
Sacramento, California 95110-1795

Subject: Supplemental Draft Environmental Impact Report for the Planned Development Rezoning and Prezoning of Communications Hill, San Jose, Santa Clara County, California (San Jose File PDC99-10-083)

Dear Mr. Boyd:

This letter is in response to your November 9, 2000, request for our comments on the *Draft Supplemental Environmental Impact Report for the Communications Hill Kaufman Broad Residential Project* (SDEIR) dated November 2000. The SDEIR was received by the U. S. Fish and Wildlife Service (Service) on January 8, 2001. It appears that the SDEIR was inadvertently sent to the Service at an incorrect address; two electronic mail transmissions dated January 10, 2001, from Dr. David Wright of my staff to Mr. Joseph Horwedel of your Department, requested that your agency consider our comments given the fact that the City accidentally sent the SDEIR to us at the wrong address, as well as providing your staff with our correct address. The comments and recommendations in this letter are made under the authority of the Endangered Species Act of 1973, as amended (Act), and the Service's Mitigation Policy.

It is our understanding that the proposed project involves the construction of up to 765 residential units, consisting of townhomes, row homes, condominiums, and other medium to high-density attached dwellings on an approximately 130 acre site located on Communications Hill in the City of San Jose, Santa Cara County, California.

At issue are the potential adverse effects of the proposed project on the threatened bay checkerspot butterfly (*Euphydryas editha bayensis*); threatened California red-legged frog (*Rana aurora draytonii*), candidate California tiger salamander (*Ambystoma californiense*); endangered Santa Clara Valley dudleya (*Dudleya setchelli* ssp. *peramoenus*); and raptors. On October 16, 2000, the Service proposed to designate Communications Hill, including the proposed project site, as critical habitat for the threatened bay checkerspot butterfly (**Federal Register** 65:61218-

99-083

61244) because it contains the primary constituent elements that are essential for the primary needs of the animal, including foraging, sheltering, breeding, maturation, and dispersal.

We have previously provided comments to the City of San Jose and the County of Santa Clara regarding projects on Communications Hill including, but not limited to letters dated November 4, 1991 (Proposed General Plan Amendment for Communications Hill, SFWO file 1-1-92-TA-068); February 21, 1992 (First Amendment to the Communications Hill Specific Plan, SFWO file 1-1-92-TA-395); October 3, 1993 (Proposed Negative Declaration for the Azevedo Quarry, SFWO fie 1-1-TA-94-7); and October 21, 1993 (Draft Environmental Impact Report on the San Jose 2020 General Plan, SFWO file 1-1-TA-94-74);

Section 9 of the Act prohibits the take of any federally listed animal species by any person subject to the jurisdiction of the United States. As defined in the Act, take is defined as "...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm has been further defined to include habitat destruction when it injures or kills a listed species by interfering with essential behavioral patterns, such as breeding, foraging, or resting. Thus, not only are the bay checkerspot butterfly and California red-legged frog protected from such activities as collecting and hunting, but also from actions that damage or destroy their habitat. The Act prohibits activities that "...remove and reduce to possession any listed plant from areas under Federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law." The term "person" is defined as "...an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal government, of any State, municipality, or political subdivision of a State, or any other entity subject to the jurisdiction of the United States."

Take incidental to an otherwise lawful activity may be authorized by one of two procedures. If a Federal agency is involved with the permitting, funding, or carrying out of the project and a listed species is going to be adversely affected, then initiation of formal consultation between that agency and the Service pursuant to section 7 of the Act is required. Such consultation would result in a biological opinion addressing the anticipated effects of the project to the listed species and may authorize a limited level of incidental take. If a Federal agency is not involved in the project, and federally listed species may be taken as part of the project, then an incidental take permit pursuant to section 10(a)(1)(B) of the Act should be obtained. The Service may issue such a permit upon completion of a satisfactory conservation plan for the listed species that would be taken by the project.

The SDEIR appears to downplay or misinterpret the adverse impacts on federally listed species and wildlife species that may result from the proposed project as well as the adequacy of proposed mitigation. Our specific comments on the SDEIR are as follows.

1. Threatened bay checkerspot butterfly: The Service does not concur with the assertion in the SDEIR that the bay checkerspot butterfly does not inhabit Communications Hill. The SDEIR documents that the foodplants of the threatened bay checkerspot butterfly, dwarf plantain

(*Plantago erecta*) and owls cover (*Castilleja* species), occur at the project site. The adult bay checkerspot butterfly feeds on the nectar of a number of flowering plant species that are present at the site. An adult bay checkerspot butterfly was observed on Communications Hill in 1992. Information in SDEIR provides a list of the surveys that were conducted between the "mid-1980's" to 2000. Between 1993 and 2000, 1 survey was conducted in 1997, and 1 was conducted in 1998. Nine visits were made between March 19 and April 29, 2000. The SDEIR stated that "A check with biologists monitoring the bay checkerspot butterfly during its 2000 flight season revealed that the earliest adults were observed on March 10th at other locations, with adults being most active at most locations sometime during the week of March 13th. No butterflies were seen after the week of April 17th." Given the tardiness in initiating the field work, it is likely the 2000 survey may have missed adult bay checkerspot butterflies at the project site.

The population dynamics of this animal undergo dramatic fluctuations. For example, based on the results of a survey conducted in 1987, an entomologist concluded that a proposed residential development at Silver Creek would not adversely affect the bay checkerspot butterfly, given its "low" population size (letter from Dennis Murphy, Stanford University, to U. S. Fish and Wildlife Service, undated; D. Murphy, pers. comm. to the U. S. Fish and Wildlife Service June 1990). However, in the time period from 1987 to 1990, the animals dramatically increased the size and extent of their population, and more comprehensive studies at the site determined that the serpentine habitat at that location was very important for the species. Currently, Silver Creek is considered to contain one of the largest populations of the bay checkerspot butterfly.

The eggs, larvae, and pupae of the bay checkerspot butterfly are difficult to locate in the field (R. White. 1986[87]. *The Trouble with Butterflies*. Jour. Res. Lepidoptera 25(3):207-212). White noted that during the month of January, the diapausing fourth instar larvae are small, about 3-6 millimeters long. They are hidden in the soil and under rocks at peak densities of no more than one or two per square meter (White *ibid*). White (*ibid* page 210) concluded that "Small size, low density, and mobility have made field study of this species impossible." In addition, the ability of larvae of a related taxa, the endangered quino checkerspot butterfly (*Euphydryas editha quino*), to become dormant during adverse environmental conditions (aestivate) is well documented and they likely are able to survive long periods of time in this state (R. Mattoni, G. Pratt, T. Longcore, J. Emmel, and J. George. 1995(97). *The Endangered Quino Checkerspot Butterfly, Euphydryas editha quino (Lepidoptera:Nymphalidae)*. Jour. Res. Lepidoptera 34:991-1008). From the perspective of judging whether a population of the quino checkerspot butterfly has been extirpated, it is important to know that even a robust population may generate no adults at all under poor environmental conditions (Dr. T. Longcore, pers. comm. to C. Nagano). It is likely the bay checkerspot butterfly, a subspecies of the same species, possesses this same life history trait.

Finally, the SDEIR (page 5 paragraph 2 of *Report of Surveys Conducted for Special-Status Invertebrates at Communications Hill in San Jose, California* dated June 2000, that was prepared by Richard A. Arnold) and other information document that the bay checkerspot butterfly possesses a "metapopulation type" of distribution and population structure. A metapopulation is a network of semi-isolated populations with some level of regular or intermittent migration and gene flow among them, in which populations may disappear, but then are recolonized by dispersing individuals from other populations. Other populations of this animal

are known from the immediate vicinity at Santa Teresa County Park, Tulare Hill, Silver Creek, Kirby Canyon, and the Morgan Hill area. The bay checkerspot butterfly also was intentionally released at 38 sites that contain serpentine grassland in Santa Clara County (Susan Harrison. 1989. *Long Distance Dispersal and Colonization in the Bay Checkerspot Butterfly, Euphydryas editha bayensis*. Ecology 70:1236-1243). It is not known if any of these releases resulted in the establishment of permanent populations, however, individuals were observed at four of the 38 sites two years after the releases occurred (Susan Harrison *ibid*).

Therefore, given the presence of suitable serpentine habitat at the project site, the observation of an adult bay checkerspot butterfly on Communications Hill, the inadequate survey that was conducted in 2000, the biology of the species, as well as the mobility of the animal, it is highly likely this listed taxa inhabits the project site. We recommend that the applicant obtain incidental take for the bay checkerspot pursuant to sections 7 or 10(a)(1)(B), as appropriate, prior to any ground breaking at the project site.

2. Endangered Santa Clara Valley dudleya: Santa Clara Valley dudleya is known to occur only in the serpentine soils of Santa Clara County. Page 73 of the SDEIR notes that "Grading for the project would result in the loss of all existing Santa Clara Valley dudleya habitat on the slopes of the site, and the project would result in the removal of virtually all Santa Clara Valley dudleya plants within the grading area of the project site." The SDEIR goes on to further note that this action is considered a significant impact.

The Service views the proposed "mitigation" of the Santa Clara Valley dudleya at Communications Hill by attempting to insert transocated plants, seeds, and propagated plants into slopes and other areas that are largely proposed for grading as inappropriate. Furthermore, we view the proposed large scale loss or fragmentation of the population of this listed plant at Communications Hill, together with the indirect impacts that will result to the taxa at the project site as a significant negative effect on the species. We do not concur that the implementation of the proposed mitigation would "...reduce impacts to the Santa Clara Valley dudleya to a less than significant level." The City of San Jose should contact us to discuss the actions that are appropriate to avoid or compensate for adverse effects to this listed species.

3. Threatened California red-legged frog and candidate California tiger salamander: The Service does not concur with the assertion in the SDEIR that the proposed project would not result in significant impacts to the California red-legged frog. This opinion apparently is based on a survey conducted in 1992 of an unspecified duration and intensity, and the lack of observations of this animal in "...aquatic habitats near the study site." The SDEIR notes that the project site "..could potentially..." support the California tiger salamander. We do not concur that implementation of the activities listed on page 83 of the SDEIR will result in no impacts to the California tiger salamander. Page 33 of the *Biological Inventory of the Communications Hill Study Area, San Jose, California* dated September 2000, that was prepared by Olberding Environmental (appendix C of the SDEIR) states that "With both the known presence of the California tiger salamanders in areas adjacent to the project site and the lack of upland habitat in the dense urban environment surrounding Communications Hill, focused studies of potential upland use of the project site by California tiger salamander are warranted" and "Potential upland habitat for California red-legged

frog also occurs on the project site." Therefore, we recommend that adequate surveys for the California red-legged frog and the California tiger salamander be conducted on the project site, especially in appropriate upland habitats, and the Service contacted if either of these animals are located.

4. Raptors: The Service concurs with the SDEIR that the loss of approximately 130 acres of raptor foraging habitat (ruderal and serpentine grassland) is a significant impact. However, we do not concur that the proposed activities listed on page 78 of the SDEIR will "...reduce impacts...to a less than significant level." This habitat provides important foraging, resting, and breeding habitat for raptors, as well as loggerhead shrikes (*Lanius ludovicianus*), snakes, lizards, and other native and migratory wildlife species. We recommend that grasslands of equal or higher quality be permanently protected to reduce the loss of this wildlife habitat to a level of less than significant.

The SDEIR does not adequately address the threatened bay checkerspot butterfly and its proposed critical habitat, threatened California red-legged frog, endangered Santa Clara Valley dudleya, candidate California tiger salamander, and raptors at Communications Hill. Several of these issues were raised by us in our previous correspondence with the City of San Jose. We are concerned that planning for this project is proceeding ahead of the statutory requirement for resolving potential adverse impacts to listed species. Therefore, we recommend that the City of San Jose hold in abeyance the environmental review process until the issues regarding listed species and wildlife has been resolved with the Service. If the final environmental impact report is certified without achieving resolution of these issues, the document should clearly acknowledge this fact and state how the City of San Jose intends to comply with the Act.

We are interested in working with the City of San Jose in the resolution of these issues. Please contact Chris Nagano or Curt McCasland (frog) of my staff at the letterhead address or at 916/414-6645 if you have any questions.

Sincerely,

Karen J. Miller

Karen J. Miller
Chief, Endangered Species Division

cc: CDFG: Yountville, CA (Attn: Martha Schauss)

m:ESD:sacvalley:Chris:commhill.bcb

99-083

STATE OF CALIFORNIA • THE RESOURCES AGENCY

Gray Davis, Gove

DEPARTMENT OF FISH AND GAME
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-5500

January 8, 2001

Mr. Darryl Boyd
City of San Jose
Department of Planning,
Building and Code Enforcement
801 N. First Street, Room 400
San Jose, California 95110-1795

Dear Mr. Boyd:

Draft Supplemental Environmental Impact Report (DEIR)
SCH 2000092043
Communications Hill Planned Development
(City File No. PDC99-10-083)
Kaufman & Broad Residential Project
City of San Jose, Santa Clara County

Department of Fish and Game personnel have reviewed the above-referenced DEIR and are providing comments to the City of San Jose. The Department's comments specifically address potential project impacts and mitigation measures for western burrowing owl (*Athene cunicularia*), California tiger salamander (*Ambystoma californiense*) (CTS), nesting raptors, and Santa Clara valley dudleya (*Dudleya setchellii*).

The DEIR indicates that burrowing owls were not located on the project site, and that only a few burrows and rock crevice areas are available for owl use. While the area is not commonly used by burrowing owls, the species may utilize grassland habitats in the San Jose area. Since take of burrowing owls and their nests is a violation of the Fish and Game Code, the Department recommends that pre-construction surveys for burrowing owls be conducted on the project site. If burrowing owls or owl burrows are identified, appropriate mitigation, including take avoidance and habitat conservation, should be required and implemented. The DEIR should be revised to include these mitigation measures.

The DEIR identifies potential impacts and mitigation measures for CTS. The Department finds that the proposed mitigation for CTS is not clear. For example, if CTS are located at the Hillsdale Avenue pond, it is not clear if the pond will be conserved and how much estivation habitat will be conserved on-site. The DEIR also includes a mitigation measure to survey the potential estivation habitat on-site that could serve the quarry pond population. It is not clear how this survey will be

99-083

conducted and what habitat conservation would be provided. The Department requests that the DEIR be modified to clarify the mitigation requirements and to include Department recommended mitigation discussed below.

In the past few months, the Department has documented evidence from Contra Costa County of CTS moving more than one-half mile away from a breeding location to find estivation areas. It is likely that CTS may move up to 0.75 to 1.0 mile or more from a breeding location. At this same site, protocol level nocturnal surveys failed to provide a complete indication of the numbers of CTS present on the site and the extent of the site that was utilized by CTS. Applying this and other CTS information to the City of San Jose, it is reasonable to assume that CTS are using all grassland habitat within 0.5 miles of a breeding location for estivation. It is also likely that CTS utilize estivation habitat more than 0.5 miles from a breeding location. Locating aestivating CTS, even using current protocols, can be difficult. Therefore, the Department should be consulted following the completion of breeding and estivation habitat surveys to assess the data and develop appropriate mitigation and conservation strategies. Any breeding and estivation habitat that is impacted should be mitigated through the conservation of existing on-site or off-site CTS habitat. A Mitigation Agreement should be completed with the Department to address these impacts.

The DEIR identifies potential significant impacts to nesting raptors and proposes avoidance mitigation by not allowing tree removal between February 15 and June 30. While this may be sufficient for most species of concern, June 30 is an early date to assume that fledging will have occurred for all nesting raptors. The Department recommends increasing the avoidance period to July 31 or conducting surveys prior to tree removal to ensure that no nesting raptors or chicks will be impacted.

The mitigation identified for Santa Clara valley dudleya involves translocation, propagation and planting of the species into re-created habitat areas in graded project areas. The Department does not believe this is adequate mitigation for impacts to this species. Habitat for any plant or animal species should be conserved intact, in large, contiguous blocks, in a natural state. Conservation of three smaller areas provides lower quality than conservation of one larger area. Also, all re-created habitat areas are considered experimental, since the

long-term viability of these sites over decades has not been confirmed. A significant amount of funding is necessary to provide the level of monitoring necessary to document successful establishment, and more importantly, regeneration and propagation through several generations. Sites that have been monitored for a shorter term and appear to have successful establishment of the species are useful for developing and evaluating experimental mitigation, but cannot be considered full mitigation by themselves. The loss of habitat for this species needs to be offset through habitat conservation for mitigation to be considered adequate. The proposed mitigation also fails to address the impacts associated with habitat fragmentation and greater proximity to urban development and future impacts. The Department recommends that extant populations of this species be conserved in their natural state to provide adequate mitigation for project impacts. The Department requests that the DEIR be modified to incorporate this mitigation.

The Department requests that subsequent documents related to this project be submitted for our review. If you have any questions regarding our comments, please contact Scott Wilson, Environmental Specialist, at (510) 245-2472; or Carl Wilcox, Habitat Conservation Manager, at (707) 944-5525.

Sincerely,

Cindy Catalano
for Robert W. Floerke
Regional Manager
Central Coast Region

cc: State Clearinghouse

99-083

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse

Gray Davis
GOVERNOR

Steve Nis
ACTING DIRE

RECEIVED
JAN 04 2001
CITY OF SAN JOSE
PLANNING DEPARTMENT

January 2, 2001

Darryl Boyd
City of San Jose
801 North First Street, Room 400
San Jose, CA 95110-1795

Subject: Planned Development Prezoning (City File No. PDC99-10-083)...
SCH#: 2000092043

Dear Darryl Boyd:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on December 29, 2000, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Terry Roberts

Terry Roberts
Senior Planner, State Clearinghouse

Enclosures
cc: Resources Agency

99-083

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
916-445-0613 FAX 916-323-3018 WWW.OPR.CA.GOV/CLEARINGHOUSE.HTML

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse

Gray Davis
GOVERNOR

Steve Nissen
ACTING DIRECTOR

ACKNOWLEDGEMENT OF RECEIPT

RECEIVED
NOV 30 2000
CITY OF SAN JOSE
PLANNING DEPARTMENT

DATE: November 27, 2000

TO: Darryl Boyd
City of San Jose
801 North First Street, Room 400
San Jose, CA 95110-1795

RE: Planned Development Prezoning (City File No. PDC99-10-083)...
SCH#: 2000092043

This is to acknowledge that the State Clearinghouse has received your environmental document for state review. The review period assigned by the State Clearinghouse is:

Review Start Date: November 14, 2000
Review End Date: December 28, 2000

We have distributed your document to the following agencies and departments:

California Highway Patrol
Caltrans, District 4
Department of Conservation
Department of Fish and Game, Region 3
Department of Health Services
Department of Parks and Recreation
Native American Heritage Commission
Office of Historic Preservation
Regional Water Quality Control Board, Region 2
Resources Agency
State Lands Commission

The State Clearinghouse will provide a closing letter with any state agency comments to your attention on the date following the close of the review period.

Thank you for your participation in the State Clearinghouse review process.

99-083

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
916-445-0613 FAX 916-323-3018 WWW.OPR.CA.GOV/CLEARINGHOUSE.HTML

Document Details Report
State Clearinghouse Data Base

SCH# 2000092043
Project Title Planned Development Prezoning (City File No. PDC99-10-083)...
Lead Agency San Jose, City of

Type EIR Draft EIR
Description Development of up to 765 residential units, consisting of townhouses, row homes, condominiums and other medium to high-density attached dwellings.

Lead Agency Contact

Name Darryl Boyd
Agency City of San Jose
Phone (408) 277-4576 **Fax**
email
Address 801 North First Street, Room 400
City San Jose **State** CA **Zip** 95110-1795

Project Location

County Santa Clara
City San Jose
Region
Cross Streets Hillsdale Avenue/Vista Park Drive
Parcel No. 284-02-007, 008
Township **Range** **Section** **Base**

Proximity to:

Highways 87/85/101/280
Airports
Railways UPRR
Waterways Canoas Creek
Schools East Side Union High and Franklin-McKinley Elementary
Land Use General Plan Designation is Communication Hill Planned Residential Community (25-40 DU/AC). Zoning is agricultural and residential.

Project Issues Air Quality; Archaeologic-Historic; Flood Plain/Flooding; Geologic/Seismic; Minerals; Noise; Public Services; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wildlife; Growth Inducing; Landuse; Cumulative Effects; Drainage/Absorption; Aesthetic/Visual; Recreation/Parks; Schools/Universities; Other Issues

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Game, Region 3; Office of Historic Preservation; Department of Parks and Recreation; California Highway Patrol; Caltrans, District 4; Department of Health Services; Regional Water Quality Control Board, Region 2; Native American Heritage Commission; State Lands Commission

Date Received 11/14/2000 **Start of Review** 11/14/2000 **End of Review** 12/29/2000

99-083

Note: Blanks in data fields result from insufficient information provided by lead agency.

CALIFORNIA
HISTORICAL
RESOURCES
INFORMATION
SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLARA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
1801 East Cotati Avenue
Rohnert Park, California 94928-3609
Tel: 707.664.2494 • Fax: 707.664.3947
E-mail: nwic@sonoma.edu

December 13, 2000

File Number: 00-SC-71E

Mr. Darryl Boyd, Principal Planner
Department of Planning, Building and Code Enforcement
801 North First Street
San Jose, CA. 95110-1795

RECEIVED
DEC 13 2000
CITY OF SAN JOSE
PLANNING

RE: File # PDC99-10-083; Communication Hill Project

Dear Mr. Boyd;

Our office has no additional comments on the above referenced document. Thank you for your continued concern for protecting our historical heritage.

Sincerely,

Kathleen Thorne
Record Search Coordinator for
Leigh Jordan, M.A.
Coordinator

99-088

STATE OF CALIFORNIA - BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
P O BOX 23660
OAKLAND, CA 94623-0660
Tel: (510) 286-4444
TDD (510) 286-4454

December 27, 2000

RECEIVED
DEC 2 8 2000
STATE CLEARINGHOUSE

clear 12/28/00 e

SCL-87-2.04
2000092043
SCL087071

Mr. Darryl Boyd
Department of Planning, Building
and Code Enforcement
801 North First Street, Room 400
San Jose, CA 95110-1795

Dear Mr. Boyd:

Draft Environmental Impact Report (DEIR) for the Communications Hill Residential Project, City of San Jose

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the proposed project. We have examined the above-referenced document and have the following comments:

1. The impact on level of service (LOS) on State Route 87 (SR 87) and its ramp intersections is not desirable. Additional comments regarding the LOS will follow within the next week.

2. Page 10, Paragraph 2 states that: "A new water system will be constructed in order to meet the demand for domestic water use and fire service on the site and the remainder of Communications Hill." Does this mean the private water lines that run from Carol Drive south towards the Santa Clara County Communication Facility, parallel to the eastern edge of State right-of-way will be replaced by a municipal system? The State has an interest in these lines as they were relocated during construction of SR 87.

Should you require further information or have any questions regarding this letter, please call Haiyan Zhang of my staff at (510) 622-1641.

Sincerely,

HARRY Y. YAHATA
District Director

By Jean C. R. Finney

JEAN C. R. FINNEY
District Branch Chief
IGR/CEQA

99-083

METROPOLITAN
TRANSPORTATION
COMMISSION

Joseph P. Bort MetroCenter
101 Eighth Street
Oakland, CA 94607-4700
Tel: 510.464.7700
TTY/TDD: 510.464.7769
Fax: 510.464.7848
E-mail: mtc@mtc.ca.gov
Web site: www.mtc.ca.gov

RECEIVED
NOV 30 2000
CITY OF SAN JOSE
PLANNING DEPARTMENT

November 28, 2000

James T. Beall Jr., Chair
Sharon J. Brown, Vice Chair
Ralph J. Appezzato
Keith Axtell
Sue Bierman
Mark DeSaulnier
Dorene M. Giacopini
Mary Griffin
Mary V. King
Steve Kinsey
Sue Lempert
John McLemore
Charlotte B. Powers
Jon Rubin
Angelo J. Siracusa
James P. Spering
Kathryn Winter
Sharon Wright
Harry Yahata
Lawrence D. Dahms
Executive Director
Steve Heminger
Deputy Executive Director

Mr. Darryl Boyd
City of San Jose
Dept. of Planning, Bldg., & Code Enforcement
801 North First Street, Room 400
San Jose, CA 95110-1795

Re: Draft SEIR for the Kaufman & Broad Residential Project on Communications Hill

Dear Mr. Boyd:

This letter sets forth the Metropolitan Transportation Commission's (MTC) staff comments and recommendations on the Draft SEIR for the proposed Kaufman & Broad South Bay, Inc. residential project on Communications Hill, as described below.

Kaufman & Broad proposes to build 765 residential units (consisting of townhomes, row homes, condominiums and other medium to high-density attached dwellings) on approximately 105-acre site on Communications Hill. The project site is located along the southern portion of Communications Hill, north of Hillsdale Avenue and Narvaez Avenue, and east of State Route 87 in San Jose. The project also develops approximately 1.3 acres of public park on the site and includes open space (primarily hillside slopes). Construction is expected to begin in Spring 2001, and will take two to three years to complete. An EIR for the Communications Hill Specific Plan, which provides a planning framework for the development of the 400 acres of Communications Hill, was certified in October 1991. This SEIR provides subsequent environmental review of the proposed project.

Our comments and recommendations are as follows:

1. The Draft SEIR (pages 112-116) finds that the proposed project would result in significant LOS impacts to three freeway segments operating at LOS F—SR 87 NB (Curtner Avenue to Almaden Expressway), SR 87 NB (Almaden Expressway to Alma Avenue), and SR 87 SB (I-280 to Alma Avenue). The Draft SEIR further states that a mitigation measure such as the addition of HOV lanes on SR 87 (a Santa Clara County Measure A/B project) would restore freeway conditions to LOS E or better, but this is deemed infeasible due to cost considerations, project timing issues, and the regional nature of freeway planning. However, the Draft SEIR does not provide sufficient information on the SR 87 HOV Lane project to support this finding.

   It is recommended that the Final SEIR provide additional project details on the SR 87 HOV Lane project such as cost estimates, funding status, project implementation schedule, and agency responsible for implementing the project. If this improvement is deemed to be feasible, it should be added as a mitigation measure, and the project applicant should be required to pay a fair share contribution towards this improvement (which could

conceivably accelerate the delivery of this project). Also, please note that MTC's *1998 Regional Transportation Plan* includes the SR 87 HOV Lane project (RTP #94124).

2. The Draft SEIR (pages 164-166) shows that four Congestion Management Program (CMP) study intersections would operate at LOS F during at least one of the peak hours under the cumulative conditions (Year 2003). As such, the Final SEIR should discuss whether the City of San Jose would be required to prepare a deficiency plan in accordance with the Santa Clara County CMP.

Thank you for the opportunity to comment on the Draft SEIR. We look forward to receiving the Final SEIR, including responses to our comments. If you have any questions, call me at 510.464.7809.

Sincerely,

Ashley Nguyen
Environmental Review Officer

cc: ABAG Clearinghouse
MTC Chair J. Beall & Commissioners J. McLemore, C. Powers

C:\My Documents\environmental review\kaufman&broad-sj-seir.doc

99-083

SANTA CLARA
Valley Transportation Authority

December 29, 2000

City of San Jose
Department of Planning, Building and Code Enforcement
801 North First Street
San Jose, CA 95110

Attention: Darryl Boyd, Principal Planner

Subject: File No. PDC99-10-083/ Kaufman & Broad Residential Project on Communication Hill Draft Supplemental EIR

Dear Mr. Boyd:

Santa Clara Valley Transportation Authority (VTA) staff have reviewed the Draft Supplemental Environmental Impact Report (Draft SEIR)for the project referenced above to allow up to 765 residential dwellings on 130 acres in the Communication Hill Specific Plan area east of Route 87, west of Monterey Road between Curtner and Hillsdale Avenues. We have the following comments.

Transportation Impact Analysis

The following are comments from VTA's Congestion Management Program (CMP) on the Transportation Impact Analysis (TIA) prepared for this proposed development.

1. **Missing Appendices**: The TIA makes references to several items that were included in appendices. However, only traffic volume count sheets and LOS calculation sheets for a few intersections were provided in the appendices that we received. The final TIA should include all appendices.

2. **Results Inconsistent with CMP Monitoring Analysis**: Page 20 of the TIA describes adjustments that were made to the analysis of existing conditions at Capitol Expressway/SR 87 southbound ramps, a CMP intersection. The adjustments lead to analysis results in the Draft SEIR and the TIA that are not consistent with results provided to the CMP by the local agencies for the 2000 CMP monitoring program. The introduction of such adjustments should be conducted under consultation with the affected local agencies. In this case, Santa Clara County and City of San Jose staff should be consulted, if they already haven't been consulted.

99-083

3331 North First Street · San Jose, CA 95134-1906 · Administration 408.321.5555 · Customer Service 408.321.2300

3. **Inconsistent Signal Timing Data**: Pages xiii and 115 of the Draft SEIR and pages v, 33 and 45 of the TIA discuss mitigations for the project impact identified at the Capitol Expressway/SR 87 southbound ramps intersection. These pages identify signal timing changes as part of the mitigations. In particular, a change to the minimum green time for the eastbound approach from 85 seconds to 78 seconds is proposed. The CMP database shows an existing minimum green time of 70 seconds for this approach. Changes to minimum green times and other timing parameters are usually not allowed for mitigation purposes. In any event, determination of such changes should be conducted under consultation with local agency staff. In this case, Santa Clara County and City of San Jose staff should be consulted, if they already haven't been consulted.

4. **Striping and Geometric Changes to Capitol Expressway**: The pages noted in Comment 3 above also include mitigations requiring changes to striping and geometrics on Capitol Expressway. The affected agencies should be consulted on proposed changes to roadway design.

5. **Queuing Analysis Assumption**: Pages 38 and 39 of the TIA provide the results of queuing analyses. It is stated that the assumed length of a vehicle for these calculations was 20 feet. The default value for this parameter in TRAFFIX is 25 feet. It is unclear whether the 20 feet was only used to convert the queue length reported in TRAFFIX from number of vehicles to queue length in feet, or if the 25 feet default value in the program was changed to 20 feet. Back-up calculation sheets for this queuing analysis should be provided in the TIA, along with a clarification of the vehicle length assumed in TRAFFIX.

6. **Queuing Impacts in SEIR**: Pages 38 to 40 and vi of the TIA identify three locations impacted by queuing with the proposed project and recommended improvements for these impacts. It is unclear from the TIA whether the affected local agencies have been consulted on these improvements. The Draft SEIR does not include these impacts and the recommended improvements. Please address this issue.

7. **Other Queuing Impacts**: Page 38 of the TIA discusses possible queuing impacts at the Capitol Expressway/SR 87 southbound ramps intersection based on the LOS analysis, but discounts this possibility based on field observations. Given Comments 2 and 3 above, back-up information supporting the "no impacts" finding should be provided in the TIA.

99-083

8. **Immediate Implementation Action List:** Pages v and 36 of the TIA and pages xiii, 112 and 115 of the Draft SEIR discuss that there are three identified freeway segments that would be significantly impacted by the project. It is concluded that these are significant unavoidable impacts.

   In the case of such impacts, the CMP TIA guidelines (adopted May 7, 1998) state that the Lead Agency must or require the proposed project's sponsor to implement the "Immediate Implementation Action List" in Appendix D of the CMP TIA guidelines as part of project approval. This requirement is in lieu of the preparation of a local deficiency plan and pending adoption of a Countywide Deficiency Plan. The TIA and SEIR should include this requirement for the project.

   The "Immediate Implementation Action List" includes actions to improve the bicycle and pedestrian environment, enhance public transit, and encourage the implementation of Transportation Demand Management Programs. In order to reduce the number of single occupant vehicle trips generated by the project, VTA requests that the City consider applying the following as conditions of approval or mitigation measures:

   - Transit Fare Incentives such as Eco Pass and Commuter Checks
   - Shuttles to Transit
   - Inclusion of Bicycle Lanes or Paths
   - Bicycle Lockers and Bicycle Racks
   - On-site or Walk-Accessible Employee Services (day-care, dry-cleaning, fitness, banking, convenience store)
   - On-site or Walk-Accessible Restaurants

Bicycle Access and Parking

VTA's October 6, 2000 comment letter on the Notice of Preparation (NOP) and September 21, 2000 comment letter on the PD Rezoning provided comments on bicycle access and parking that are not addressed in the Draft SEIR and TIA. As such these comments are repeated here.

VTA considers bicycling to be an important commute mode by itself and in combination with other modes. As such, all VTA buses and light rail cars are equipped with bicycle racks. Bicycles are allowed on Caltrain as well. This project is near VTA bus routes, two light rail stations and a Caltrain station. The project is also near the bike path east of SR 87 as well as the bike lanes on Narvaez Avenue that are part of the Cross-County Bicycle Corridor System. Therefore the project

should include provisions, such as the inclusion of bicycle lanes or paths, to facilitate residents' use of bicycles to access these transit and bicycle facilities.

In addition, VTA suggests that the project include appropriate bicycle support facilities, such as secure bicycle storage facilities for occupants of new multi-family structures without private garages. These storage facilities could take the form of a special bicycle parking room off a common garage. VTA's Bicycle Technical Guidelines provides guidance on estimating supply, siting, and design for bicycle storage facilities. Contact Sylvia Star-Lack at (408) 321-5725 or sylvia.star-lack@vta.org to obtain a copy of these guidelines.

Pedestrian-Oriented Development

VTA's October 6, 2000 comment letter on the NOP provided comments on pedestrian-oriented development that are not addressed in the Draft SEIR and TIA. As such, these comments are repeated here.

The Draft SEIR notes that the "approved Communications Hill Specific Plan provided a comprehensive planning framework for development of a unified, high-density, pedestrian-oriented, urban community with a mix of uses." The SEIR should describe how the project conforms to these plans.

To create a unified, pedestrian-oriented urban community, the following features should be included in the project: neighborhood-serving commercial/retail land uses, continuous sidewalks along all streets within and adjacent to the project, pedestrian-friendly street environment including 10-foot sidewalks, street trees and pedestrian-scale lighting, wheelchair curb ramps in compliance with ADA requirements at all driveways and intersections within and adjacent to the project site and shuttles to transit.

Existing Transit Service

Although VTA currently has no plans to bring service directly to the development, this project is near existing VTA bus routes, two light rail stations and a Caltrain Station. As a mitigation for the project's impact on traffic, the infrastructure of the project should include the following features so the establishment of possible future bus service within and adjacent to the development is not precluded.

- Minimum 22' curb lanes on major streets within and adjacent to the project site. This minimum width will allow buses to service bus stops while out of the flow of traffic and will help to reduce conflicts between buses and other vehicles traveling on the roadways.
- Continuous sidewalks along all streets within and adjacent to the project site. The sidewalks are included in the project according to the plans reviewed.

VTA staff request that future designs for the project be forwarded for VTA review and possible development of future bus service in the area.

We appreciate the opportunity to review this project. If you have any questions, please call Lauren Bobadilla of my staff at (408) 321-5776.

Sincerely,

Lauren Bobadilla for

Roy Molseed
Senior Environmental Analyst

RM:LGB:kh

cc: Timm Borden, San Jose Public Works Department
Casey Emoto, CMP

Santa Clara Valley Water District

5750 ALMADEN EXPWY
SAN JOSE CA 95118-3686
TELEPHONE (408) 265-2600
FACIMILE (408) 266-0271
www.scvwd.dst.ca.us
AN EQUAL OPPORTUNITY EMPLOYER

January 10, 2001

Mr. Darryl Boyd
Department of Planning, Building
and Code Enforcement
City of San Jose
801 North First Street
San Jose, CA 95110-1795

Dear Mr. Boyd:

Subject: Draft Supplemental Environmental Impact Report for the Communications Hill Kaufman & Broad Residential Project

The Santa Clara Valley Water District (District) has reviewed the Draft Environmental Impact Report (DEIR) for the Communications Hill Kaufman & Broad Residential Project, dated November 2000 and submitted to the District on November 17, 2000. In addition, the District reviewed the complete hydrology study revised December 6, 2000, by Schaaf & Wheeler and submitted to the District on December 8, 2000. While the comments provided herein are past the required response date, the District would like the City of San Jose (City) to consider them during the environmental review process for this project.

The site drains to Canoas Creek, a District flood control facility. The runoff from the site may negatively impact District facilities and downstream homeowners if increases in runoff from the project are not adequately mitigated, since currently areas of Canoas Creek experience flooding during as little as a 7-year flood flow.

Based on our review of the proposed project as shown on the above-referenced plans, we have the following comments regarding the project site:

1. The Narvaez and Hillsdale watersheds should be clearly shown on the Canoas Creek watershed map, Figure 1.

2. On page 3 of the hydrology report, it is unclear why Subarea F-North has not been routed through a storm drain system or detention basin, since it appears that the interim detention basin and the

99-083

Helzer Ranch detention basins are located within this subarea and that for the project conditions there will be storm drains and detention basins.

3. On page 4 of the hydrology report, the value for the 100-year flowrate for the Specific Plan Development for Subarea F-North appears to be incorrect. The table indicates a value of 191 cubic feet per second (cfs), but the HEC-1 run (CH100) indicates a value of 187 cfs.

4. On page 4 of the hydrology report, there are inconsistencies between the values in Table 2 and those in the text of the report. The report should be revised for consistency and the increase in runoff between the existing and project conditions should be verified for each subarea. In addition, the values on page 37 of the DEIR, Section C, should also be verified for accuracy, since this section summarizes the results presented in the hydrology report.

5. On December 8, we received a full copy of the hydrology report from Schaaf & Wheeler that included modifications to the Tc and R-values used as part of the CN method calculations. These changes were not included in the text of the report included in the DEIR. The final Environmental Impact Report (EIR) will need to include a copy of the final hydrology report used for this project.

6. The changes made to the Tc and R-values, resulted in a R/(Tc + R) value of 0.5 for rural and pervious areas. This value is not very conservative and may lead to underestimating the size required for the detention basins. The HEC-1 runs should also be run using a R/(Tc + R) value of 0.7 for the rural and pervious areas to determine the sensitivity of the model and to verify that the increased flowrates calculated have not been underestimated which could potentially impact flooding in the area.

7. Figures 2 and 3 of the report need to be labeled, as well as the detention basin for the Hillsdale watershed.

8. The attached figures should clearly indicate which areas drain to each detention basin and which areas do not drain to the detention basins.

9. It is unclear on page 8 of the hydrology report how the potential cumulative increases in flowrate to Canoas Creek,16 cfs for the 10-year flood event and 19 cfs for the 100-year flood event, were obtained. These values appear to be lower than the increases calculated for both the Hillsdale and Narvaez watersheds, though the above values are for the entire development of Communications Hill. There is to be no net increase in the flowrate to Canoas Creek as a result of this project. The hydrology report and DEIR text should clearly state this requirement and indicate detention basins will be used as part of the project to meet this requirement.

10. It is unclear why the area was modeled using both the old District design hydrology procedure and the CN method. There does not appear to be any discussion relating the results of the two methods. In addition, the text of the DEIR in Section C discusses the increases in runoff based on the results of the old District design hydrology procedure, though the required detention was

determined using the results of the CN method. The use of these two methods should be more clearly explained in both the text of the DEIR and the hydrology report.

11. It does not appear that the HEC-1 runs for the Narvaez watershed included both the interim detention basin and the existing Helzer Ranch detention basins. The analyses need to properly model the project conditions with the interim detention basin.

12. In the last paragraph on page 40 and in the second paragraph on page 41 of the DEIR, there are summary statements regarding the increased flowrates in Canoas Creek due to the project before mitigation. These numbers do not appear to be consistent with the values presented in the discussions earlier in the text of each sub-watershed impacts. This section needs to be reviewed and revised for consistency, clarity, and accuracy.

13. The final detention basin designs will need to reflect the final hydrology calculations. In addition, the December 6 revisions to the report by Schaaf & Wheeler have changed the required detention for both the Hillsdale and Narvaez watersheds, which may have altered the sizes of the basins.

14. The text of the DEIR regarding the hydrology and flooding should be reviewed for consistency with the final hydrology report and revised as needed based on the December 6 Schaaf & Wheeler revisions and comments made in this letter.

15. The calculations, design, and operating and maintenance manual for the interim detention basin in the Narvaez watershed and the permanent basin for the Hillsdale watershed should be submitted to the District for review and comment. In addition, the calculations and design information for the detention basins at Helzer Ranch, including the modifications to the outlet for this project, need to be submitted to the District for review. Our records do not indicate that a copy of the final calculations and design and operating and maintenance manual for the Helzer Ranch detention basins was sent to the District.

16. The DEIR should indicate the responsible party for the maintenance and operation of the new detention basins. Mitigation for the increases in flow to Canoas Creek and the flooding cannot be properly mitigated for without having a designated party responsible for the proper maintenance and operation of the basins.

17. It is unclear on page 153 of the DEIR under Storm drainage what is meant by the statements "Runoff from developed portions of the site vicinity which are outside of the City of San Jose limits does not enter the City storm drain system. This runoff is conveyed to detention basins for evaporation and percolation into the ground." Any runoff from the project site that enters the proposed detention basin in the Hillsdale watershed will be discharged to Canoas Creek via a City storm drain. Water that enters the interim detention basin in the Narvaez watershed or the Helzer Ranch detention basins will enter Canoas Creek through an outfall from the Helzer Ranch basin. In addition, the detention basins do provide for some evaporation and percolation though the main purpose is to temporarily detain water from entering the creek to prevent flooding.

99-083

18. As noted in our October 4, 2000, letter regarding the Notice of Preparation (NOP) for this project, the stability of the hillside slopes with respect to the siting of the proposed detention basins is of concern. The document indicates that portions of the south facing slopes are located in areas subject to earthquake induced landslides, and it is unclear if the detention basin for the Hillsdale watershed is located in this potential unstable area. A geologic and soils report should be prepared which evaluates the finish slopes on the site, identifies any necessary subdrains associated with the hillside grading, and addresses the stability of the slopes where the detention basins are located.

19. As noted in our letter regarding the NOP, the project site should include postconstruction measures to prevent pollution of the runoff from the site and to protect the water quality in the receiving streams. The document mentions as part of the mitigation monitoring plan for water quality, in the Drainage, Flooding, and Water Quality chapter, that vegetated swales and catch basin inserts are to be used where possible. Stronger language should be used in describing the mitigation measures proposed, *i.e.*, the project *will* include vegetated swales and catch basin inserts as water quality mitigation measures. The document should clearly identify which types of postconstruction measures for water quality protection can and will be included in the project instead of only mentioning two measures that may or may not be included. A good source to reference for information regarding how to include such features in the final site design is the *Start at the Source Design Guidance Manual for Stormwater Quality Protection*, a copy of which can be obtained through the Bay Area Stormwater Management Agencies Association.

    New, more stringent water quality regulations of the Clean Water Act have recently been triggered because the National Pollutant Discharge Elimination System permits program has failed to protect beneficial uses of the County's creeks and the South San Francisco Bay, as evidenced by such observations as violations of ambient water quality criteria; high concentrations of toxic substances; and fish consumption health advisories. These new regulations require that the Total Maximum Daily Loads (TMDL) of sediment, heavy metals, exotic species, pesticides, and other pollutants are to be calculated for discharges to the Guadalupe River and/or South San Francisco Bay. Since discharges to Canoas Creek discharge to the Guadalupe River and ultimately the South San Francisco Bay, it is likely that TMDLs developed for these pollutants will establish load allocations for discharges to and from Canoas Creek. Further, because the Guadalupe River and South San Francisco Bay are identified as impaired water bodies due to these pollutants for which TMDLs will be developed, as well as other applicable water quality laws, any change of land use must have a neutral impact on the loading of these pollutants. The City should require the project proponent to develop and implement a nonpoint source treatment plan that ensures that loads of sediment, heavy metals, and pesticides are not increased, and that exotic species are not increased in number or variety, due to activities or impacts attributable to the site that occur during and after site development.

District records show no wells located on the project site. In accordance with District Ordinance 90-1, the owner should show any existing well(s) on the plans. The well(s) should be properly registered with the District and either be maintained or abandoned in accordance with the District's standards. Property

owners or their representative should call Mr. Mike Duffy, (408) 265-2607, extension 2743, for more information.

Please submit two copies of the final EIR and supplemental information requested that address the above comments to the District for review and comment. Reference District File No. 25960 on further correspondence regarding this project.

If you have any questions or need further information, you can reach me at (408) 265-2607, extension 2322.

Sincerely,

Colleen Haggerty
Assistant Engineer
Community Projects Review Unit

99-083

County of Santa Clara

Roads & Airports Department

101 Skyport Drive
San Jose, CA 95110-1302
(408) 573-2400 FAX 441-0142

January 8, 2000

Mr. James R. Derryberry
Director of Planning
City of San Jose
801 North First Street, Rm 400
San Jose, CA 95110-1795

Subject : Project Review – Communication Hill Development SEIR
Project Coordinator : Darryl Boyd

Dear Mr. Derryberry,

We have reviewed the Supplemental Environmental Impact Report (SEIR) for the proposed Kaufman and Broad Residential Project on Communication Hill dated November, 2000. Our comments are as follows:

1) Extend the proposed Eastbound through lane of Capitol Expressway from Highway 87 to Vistapark Drive (See "Mitigation Measures Included in the Project", Page 115, Volume 1).

2) Figure 8, "Project Trip Distribution" (Appendix E, Page 31, Volume 2) shows only 5% of trips are assigned to Capitol Expressway. This number appears low. 30% would seem reasonable. Please revise this figure or show us how this number was derived.

3) The Executive Summary (Appendix E, Page iv, Volume 2) indicates that the project will build 765 single family attached residential dwelling units. There are no definitions for this in the Trip Generation Guidelines, 6th edition If the units are single family units, the trip generation/units would be around 10, not 7.5 as indicate on page iv.

4) Please provide level of service information for Capitol Expressway and Narvarez, a CMP intersection.

Thank you for the opportunity to review and comment on this project. If you have any questions, please call me at (408) 573-2463.

Sincerely,

Sean Quach
Project Engineer

99-083

cc: DEC SK AKC RVE File

rsj14-00

Board of Supervisors: Donald F. Gage, Blanca Alvarado, Pete McHugh, James T. Beall Jr., Liz Kniss
County Executive: Richard Wittenberg

Santa Clara Valley Audubon Society

Founded 1926

December 28, 2000

Darryl Boyd, Principal Planner
Dept. of Planning, Building, and Code Enforcement
801 North First Street, Room 400
San Jose, CA 95110

RE: Communications Hill Kaufman & Broad Residential Project Draft Supplemental Environmental Impact Report

Dear Mr. Boyd:

Thank you for the opportunity to comment on the Draft Supplementary Environmental Impact Report (EIR) for the Kaufman & Broad Communications Hill Residential Project (Project). As is noted in my October 27 letter to Project Manager Jodie Clark, this project raises a number of environmental concerns. Due to this area's relatively undeveloped (natural) state, the project's proximity to Canoas Creek, and the presence of serpentine soils, the land on which the project is proposed to be built is environmentally sensitive. The applicant and the City of San Jose (City) must take greater consideration of this sensitivity and adjust the EIR to truly reflect the environmental impacts.

Open Space

• The EIR notes a significant loss of open space, which goes unmitigated despite the preservation of various steep slopes. The EIR should look to off-site mitigation opportunities to reduce this impact to less than significant. In particular, since serpentine habitats are impacted, the EIR should consider the acquisition of other serpentine lands in south San Jose or adjacent Santa Clara County for acquisition either in fee title or conservation easement. Such a mitigation measure was included in the Dow Drive project on Communications Hill, where the city found it feasible to mitigate impacts to Santa Clara Valley Dudleya through off-site acquisition. This possible mitigation measure may also be useful in mitigating impacts to serpentine outcroppings and the dudleya, thus serving a multifold purpose. We know that at least one landholder in the Diablo Range (Castle and Cooke) has sold conservation easements for this purpose, indicating that this mitigation measure is feasible.

• It is unclear from the EIR whether the Project complies with San Jose or the Communications Hill Specific Plan standards regarding public parks. Dedication of 1.3 acres of parkland for the Project's 765 residential units would appear to be well below the city's standard. This should be analyzed as a potentially significant impact based on inconsistency with the city's General Plan and/or the Specific Plan. In addition, this same impact (lack of public park lands) should be analyzed on a cumulative basis for the area. For example, a similar lack of dedicated park acreage occured on the Kaufman and Broad development on the Rabino site adjacent to Communications Hill. A cumulative parks analysis is needed.

Wildlife Diversity

22221 McClellan Road, Cupertino, CA 95014 Phone 408 • 252 • 3747 Fax 408 • 252 • 2850

Printed on Recycled Paper with Soy Ink

99 - 083

• The mitigation measures designed to address the loss of serpentine soils and its associated native grassland habitat are inadequate. Because of its unique ability to sustain native species, serpentine soils must be given special consideration and a greater attempt to conserve them or to mitigate for their loss must be made. The mitigation plan fails to include the land that will be lost to impervious surfaces. A proper mitigation plan would include not only measures to restore serpentine grassland habitats on-site, but also off-site easements that would compensate for the total loss of these valuable soils.

• The EIR disregards the significance of this project's location by ignoring the United States Fish and Wildlife Service's (FWS) designation of this land as critical habitat for the Bay Checkerspot Butterfly. When considering the significance of the project's impacts, the EIR states one of its thresholds to be, "conflict with any applicable land use policy adopted for the purpose of avoiding or mitigating an environmental effect" (p.18) Clearly, the purpose of designating this area as critical habitat was to avoid negative environmental impacts and to preserve the integrity of this vital land. Because the applicant does not acknowledge the importance of this designation, the EIR fails in meeting its own threshold of significance and in including a mitigation plan for the loss of this serpentine-rich, critical habitat. Until these issues are addressed, the EIR is inadequate.

• The EIR acknowledges a significant, cumulative, unmitigated impact on ruderal and grasslands habitats, resulting in a significant loss of wildlife diversity in the region. Requiring the project to use only native plant materials in landscaping should be considered as a mitigation for this impact. This should include the elimination of turf grasses on public and private areas of the project site (except perhaps the public park) and requirements that public and private areas be managed for native grasses, shrubs, and trees. This is a feasible mitigation, as it could still fulfill all project objectives and has been accomplished in development projects in surrounding communities.

• An Alternative should be considered which utilizes avoidance of the Santa Clara Valley dudleya habitat but does not significantly reduce the number of residential units. It is difficult from the EIR's scant discussion of alternatives to understand whether this may be feasible. Possible methods of acheiving this alternative would include reducing the size of the individual units in order to place more units on a given area of land or reducing the amount of landscaping in and around the units in order to aggregate that open space as public park area.

• The EIR notes that Santa Clara Valley dudleya moves from one rock outcropping to another. Elimination from one area and colonization of another appears to be part of the plant's survival mechanism in the area. Given that the Project will eliminate many of these outcroppings, will the plants have sufficient areas remaining to continue this survival mechanism?

• The EIR should contain a discussion of the success or failure of the Santa Clara Valley dudleya population on the Dow Drive site on Communications Hill. This is the closest mitigation site and therefore may give the best indication of whether mitigation on the Project site will be successful. A brief discussion of mitigation measures taken on the Dow Drive site and their results compared to success criterion would suffice.

Water Issues

• Due to Canoas Creek's propensity to flood, the build out of this project and the resultant the increase of 60-80% in the amount of impervious surfaces will only further exacerbate the problem. In order to best understand this project's impacts, a study should be conducted to consider the percentage increase in flooding of Canoas Creek caused by this project. While the EIR describes a temporary, local detention basin, the applicant should also consider a longer term, regional detention facility to control the cumulative increase to the creek.

• Stating that the Project will prepare a Storm Water Pollution Prevention Plan (SWPPP) in order to mitigate potentially significant impacts on water quality to a less that significant level is not satisfactory. Recent research by SCVAS shows that significant number of construction sites are out of compliance with their SWPPP's and that the city shows little ability or inclination to monitor these sites for compliance or enforce these permits. This fact is confirmed by the Regional Water Quality control Board in their letter dated December 2000 noting at least six sites currently in violation (see attachment). The City even failed to respond adequately to that letter by neglecting to complete all of the required site inspections. Therefore, this mitigation has proven unsuccessful and can not be relied upon in the manner this EIR attempts. A sufficient mitigation measure would spell out the measures to be taken on the site to reduce water quality impacts, provide measurable success criteria for those measures, and ensure an adequate level of enforcement (e.g. the site will be inspected at least X times...).

Miscellaneous

• Please explain how the Communications Hill Specific Plan calls for a "pedestrian-oriented" community with mixed uses while the Project EIR states that "The Project's location in hilly terrain limits the potential for non-auto modes of travel" and notes that adoption of non-auto modes of travel would have next to no impact on traffic and air quality. Does this mean the Project is inconsistent with the Specific Plan? More likely, the Specific Plan contains the kind of language that the city likes to talk about, but not really follow up on.

By addressing the above mentioned concerns and perhaps considering greater off-site mitigation plans, the applicant can ensure the adequacy of the EIR and the overall protection of our natural resources.

Thank you for your time and consideration. If you have any questions regarding these comments, please contact me at (408) 252-3747.

Sincerely,

Jennifer Peritz

Jennifer Peritz
Conservation Assistant

99-083

California Regional Water Quality Control Board

San Francisco Bay Region

Winston H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov
1515 Clay Street, Suite 1400, Oakland, California 94612
Phone (510)

Gray Davis
Governor

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 6
To Jennifer	From George Leyva
Co.	Co. RWQCB
Dept.	Phone # 510-622-2329
Fax # 408-252-2850	Fax # -2450

CERTIFIED MAIL

Del D. Borgsdorf, City Manager
City of San Jose
801 North First Street, Room 436
San Jose CA 95110

SUBJECT: Notice of Violation of Order No. 95-180, NPDES Municipal Storm Water Permit

Dear Mr. Borgsdorf:

The City of San Jose is in violation of its NPDES Permit No. CAS029718, Board Order No. 95-180, Provision C.1, which requires implementation of measures to eliminate or minimize the threat of storm water discharges which could degrade Waters of the United States. Pursuant to the subject Permit, the City of San Jose is responsible for inspecting construction projects in its jurisdiction and requiring that property owners implement proper erosion control best management practices (BMPs), as described in the City's New Development Construction Inspection Procedures, Section H, NDI Inspection Standards of the City's Urban Runoff Management Plan (URMP). Counter to the Permit, the City allowed inadequate storm water controls and inadequate erosion protection to exist beyond the October 1, 2000, deadline to implement those measures. Inspections performed by Board staff early in November 2000, indicate that the City has not performed diligent oversight of construction projects in its jurisdiction.

Sites observed to be in violation of the California Water Code include:

1. Foxworthy Bridge (City owned project)
   Unacceptable discharge of sediment violating 401 Water Certification; a Notice To Comply (NTC) was issued;
2. Tuers Capitol Golf Course, (City Owned Project)
   Erosion Control and Storm Water Control Measures not implemented; a NTC was issued;
3. The Evergreen Market Place
   Inadequate Erosion Control and Storm Water Controls; a NTC was issued;
4. Legacy Partners, Alviso
   Inadequate Erosion Control and Storm Water Controls and Potential for sediment laden runoff;
5. Country View Estates, Glenview Dr.
   Inadequate Erosion Control and Storm Water Controls and Individual Property owners within this 208-acre development were building without a Storm Water Permit (observed by SCVWD only); and,
6. East Side Union High School @ Quimby
   Erosion Control and Storm Water Control Measures not adequate; a NTC was issued.

While staff will continue to monitor development sites within the City of San Jose, and will consider appropriate enforcement action(s) against owners/operators, the City should immediately implement the appropriate Construction Inspection Procedures listed in the City's URMP to control discharges of pollutants in storm water to the maximum extent practicable at all construction sites in its jurisdiction. Appropriate measures are described in the Board's Erosion and Sediment Control Field Manual, the Association of Bay Area Government's Erosion Control Handbook, or comparable documents. Staff's recent construction site inspections reveal that the City has not done so at a minimum at the above listed sites. In addition, the City should immediately direct developers within the City's jurisdiction to implement appropriate erosion and storm water control measures and that each property owner (to include single lot developments), within a development greater than five acres in size, obtain coverage under the State's storm water General Permit.

Therefore, based upon staff's findings, the City should comply with the following:

- Perform immediate corrective oversight actions for General Permit violations at all projects permitted by the City ; and,
- Submit a technical report to our office no later than **December 15, 2000**, briefly describing actions taken to ensure that City staff are implementing the appropriate Construction Inspection Procedures listed in the City's URMP; proof of adequate training necessary for appropriate City staff; an analysis of the cause of the City's failure to perform proper inspections and enforcement against non-compliant developers as observed by Board staff; inclusion of construction inspections in future annual certifications; and measures planned to correct the City's failure to act.

You should be aware that this is a formal request for technical report pursuant to California Water Code Section 13267. Failure to respond or late response to this request may subject you to administrative civil liability imposed by the Board to a maximum amount of $1,000 per day. Any extensions of the time deadlines set forth above must be confirmed in writing by Board staff. In addition, failure of the City to implement appropriate Construction Inspection Procedures as detailed in the City's URMP or any other violations of its Permit may subject the City to formal enforcement actions by the Board. If you have any questions please call my staff members George Leyva at (510) 622-2379, e-mail at gvl@rb2.swrcb.ca.gov , or John West at (510) 622-2438, e-mail at jrw@rb2.swrcb.ca.gov.

Sincerely,

Loretta K. Barsamian
Executive Officer

cc:
Honorable Ron Gonzales, Mayor, City of San Jose, 801 North First Street, San Jose, CA 95110
Debra Caldon, City of San Jose, 4245 Zanker Rd., San Jose, CA, 95134

99-083